
FARM NGDALE CAMPUS CENTER

TABLE OF CONTENTS

ALL COURSES

AUTOMOTIVE TECHNOLOGY (AET)

AET 101 Internal Combustion Engine Theory and Servicing
This is a theory/laboratory course designed to introduce the student to basic heat engine types, their physical configurations and various engine operating cycles. Analytic pressure-volume diagrams are utilized to illustrate the effects of gasoline engine design on performance and combustion requirements. Topics discussed include design, construction, inspection techniques and servicing of the internal combustion engine and its components. Laboratory activities are performed to provide relevant hands-on experience to the students. Also engine aspiration, combustion using the principles of fluid dynamics and thermodynamics, volumetric efficiency and fuel metering systems will be discussed in this course. Corequisite(s): AET 101L
Course Offered: Fall, Summer
Credits:

AET 104 Combustion Engine Theory
This is a theory course designed to introduce the student to basic heat engine types, their physical configurations and various engine operating cycles. Analytic pressure-volume diagrams are utilized to illustrate the effects of gasoline engine design on performance and combustion requirements. Engine-vehicle performance parameters are analyzed, utilizing individual and group problem solving techniques.
Course Offered: Fall, Summer
Credits:

AET 105 Fuel Systems - SI Engines
This is a theory/laboratory course developed to give the student a basic understanding of spark ignited internal combustion engine fuel systems. Topics discussed include engine aspiration and combustion using the principles of fluid dynamics and thermodynamics as they apply to the intake, exhaust, volumetric efficiency and fuel metering systems. Engine air/fuel requirements are examined along with state of the art fuel delivery systems (carburation and fuel injection), with consideration given to fuel economy and exhaust emissions. Performance characteristics of SI Engines utilizing alternate types of fuels are also examined. Related laboratory activities and demonstrations are included in the required laboratory section (AET105L).
Course Offered: Summer
Credits:

AET 106 Suspension and Control Systems
This is a theory/laboratory course designed to provide a thorough understanding of the design, construction and operation of automotive chassis and suspension systems. Topics will include a study of the vehicle frame, suspension, steering, wheels, tires and braking systems. Emphasis is directed to the analysis of the vehicle's systems during operation. Related laboratory activities and demonstrations are included in the required laboratory section (AET106L).
Course Offered: Fall, Summer
Credits:

AET 107 Manual Drivetrains and Driveaxles
This is a theory/laboratory course designed to provide a thorough understanding of the vehicle's drive train. Topics will include the design, construction, inspection techniques, and service and associated repair operations of the drivetrain and driveaxle components. The topics will include clutches, propeller shafts, universal joints, CV joints, manual transmissions, differentials and other components used in both front and rear wheel drive systems. Related laboratory activities and demonstrations are included in the required laboratory section. Corequisite: AET 107L
Course Offered: Fall, Summer
Credits:

AET 109 Automotive Electrical Principles
This is an automotive theory course designed to introduce students to basic automotive-oriented electrical principles as they relate to both A.C. and D.C. circuits utilized in contemporary automotive electrical systems.
Course Offered: Fall, Summer
Credit:

AET 150 Automotive Computer Applications
This is a theory/laboratory course designed to introduce the student to basic computer utilization and programming. Topics include a thorough introduction to personal computers, instruction in and development of basic programming. Students will be required to develop basic programs for technical automotive problem solving and practical automotive applications. Extensive use of the computer laboratory will be provided in the required laboratory section (AET150L).
Course Offered: Fall, Summer
Credits:

AET 208 Automotive Electrical Applications
This is a theory/laboratory course designed to introduce the student to basic automotive-oriented electrical principles as they relate to both A.C. and D.C. circuits utilized in contemporary automotive electrical systems. The course also covers automotive electrical and electronic systems and their application. The student is required to utilize and understand the operation of various types of electronic equipment, including both computerized engine and emissions analyzers. Related laboratory activities and demonstrations are included in the required laboratory section (AET 208L). Prerequisite(s): AET 150 or MET 109
Course Offered: Fall
Credits:

AET 215 Diesel Engines
This is a theory/laboratory course emphasizing in the diesel engine operations and servicing. Topics will include the study of current high-pressure diesel fuel-injection systems and the diesel engine combustion process with respect to fuel injection and combustion changer design. Specific examination of design and performance characteristics of diesel engine air induction, scavenging, supercharging and turbo-charging systems will be covered. Students will also analyze engine governing methods and devices necessary for control, as well as current methods and devices utilized in solving common diesel engine starting problems. Relevant laboratory activities and demonstrations are provided to support the trainings provided during the lecture hours. Prerequisite(s): AET 101 or AET 104 Corequisite: AET 215L
Course Offered: Summer
Credits:

AET 216 Engineering Measurements
This is a theory/laboratory course designed to provide an understanding of engineering measurements theory, methods and devices utilized in today's technology. Topics will include examination of industrial methods of testing, analysis and reporting in the areas of pressure, temperature, speed (time and velocity), fluid flow and exhaust emissions and the testing of common fuels and lubricants. Also included is the evaluation of a series of gasoline engine performance tests and their resulting data, including computer programmed computation and graphical analysis of the completed testing, as presented in a student developed technical paper. Typical engineering measurement instruments and devices will be encountered and utilized in laboratory support of the course (AET216L). Prerequisite(s): AET 150
Course Offered: Fall
Credits:

AET 217 Applied Mechanics and Engineering Materials
This course is designed to introduce the fundamental principles of applied engineering mechanics and materials. Topics include forces, couples, equilibrium, friction, kinematics of rectilinear and rotational motion, work, energy and power. Principles and applications of hydraulics are also discussed. Engineering materials topics include classifications, structure, properties, phase transformation and heat treatment of metals, inspection and testing techniques of automotive engineering materials. Related problem-solving activities are included. Prerequisite(s): PHY 135 and MTH 130
Course Offered: Summer
Credits:

AET 218 Applied Manufacturing Processes
This is a theory/laboratory course designed to introduce the student to basic manufacturing processes and machine tool operations. Topics covered are casting, cold and hot metal forming, machining and joining processes. Related laboratory activities include projects and experiments with technical reports. Individual laboratory projects will be assigned to each student to reinforce the topics covered in the theory. NOTE: Students completing this course may not receive credit for MET 117. Prerequisite(s): AET 101 and AET 107
Course Offered: Fall

Credits:

AET 255 Computerized Engine Controls
This is a theory/laboratory course developed to provide the student with a working understanding of automotive electronics and computerized engine control systems. The course includes computerized fuel and emission control systems, with emphasis on the diagnosis of basic engine malfunctions. The student will also analyze the principles and operation of feedback type systems. Electronic diagnostic equipment is used to identify system malfunctions in order to indicate necessary corrective actions. Laboratory activities provide an opportunity for a practical application of diagnostic procedures on current vehicles which is covered in the laboratory section (AET255L). Prerequisite(s): AET 208
Course Offered: Summer
Credits:

AET 257 Automatic Transmissions
This is a theory/laboratory course dealing with the transmission of power in automobiles, emphasizing contemporary automatic transmissions. Topics covered include applications of the principles of the planetary gear systems, fluids, seals, hydrodynamic drives, hydraulic controls and application devices. The power flow within selected automatic transmissions is discussed and is supported with related activities in the required laboratory section (AET257L). Prerequisite(s): AET 107
Course Offered: Summer
Credits:

AET 290 Project Seminar
This course is designed to provide the student with the challenge of an independent project. Requirements will include the completion of an extensive faculty approved research/construction project. This project must be related to the automotive field. The student is responsible for the original project concept, which must be supported by preliminary, progress and final technical reports. A video-taped oral presentation is also required. Note: Students cannot get credit for AET 290 and 290W; AET 290W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Automotive Department.
Course Offered: Fall, Summer
Credit:

AET 410 Senior Project
An independent investigation of a technical or managerial problem of interest to both the student and a faculty member who shall act as Project Advisor. The project selected will utilize skills and knowledge acquired in earlier AET studies. Prerequisite(s): Senior status and permission of the Department Chair Note: Students cannot get credit for AET410 and 410W; AET 410W can be used to fulfill the writing intensive requirement
Credits:

AET 490 Selected Topics in Automotive Management Technology
Courses that range from 490-499 are selected topics of current interest in Automotive Engineering Technology. Prerequisite: Senior status and/or permission of the Chair/Faculty.
Course Offered: Fall, Spring, Summer
Credit:

AET 491 Special Topics: Internship
Selected topics of current interest in Automotive Engineering Technology. Prerequisite: Senior status and/or permission of the Chair/ Faculty.
Course Offered: Fall, Spring, Summer
Credit:

AET 492 Special Topics: Electric Vehicle
Selected topics of current interest in Automotive Engineering Technology. Prerequisite: Senior status and/or permission of the Chair/Faculty.
Course Offered: Fall, Summer
Credit:

AET 493 Special Topics: Hybrid Electrical Vehicle
Selected topics of current interest in Automotive Engineering Technology. Prerequisite: Senior Status and/or permission of the Chair/Faculty.
Course Offered: Fall, Winter, Spring, Summer
Credit:

AET 494 Sp Topics in Auto Mgmt Tech
No Description Found
Course Offered: Fall, Summer
Credit:

AET 495 Sp topics in Auto Mgmt Tech
No Description Found
Course Offered: Summer
Credit:

AET 496 Sp topics in Auto Mgmt Tech
No Description Found
Course Offered: Summer
Credit:

AIR FORCE ROTC (AFR)

AFR 101 The Foundations of the U.S. Air Force I
This is a survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force. The course covers the history and structure of the US Air Force, the Air Force's capabilities, career opportunities, benefits, and Air Force installations.
Credit:

AFR 102 The Foundations of the U.S. Air Force II
This course is a continuation of study associated with AFR 102.
Credit:

AFR 201 The Evolution of U.S. Air and Space Power I
This course features topics on Air Force heritage and leaders; introduction to air power through examination of the Air Force Core Functions; and continued application of communication skills. Its purpose is to instill an appreciation of the development and employment of air power.
Credit:

AFR 202 The Evolution of U.S. Air and Space Power II
This course is a continuation of study associated with AFR 201.
Credit:

AFR 301 Air Force Leadership and Management I
This course is a study of leadership, management, professional knowledge, Air Force personnel and evaluation systems, leadership ethics, evaluation systems, and the communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical applications of the concepts being studied. Prerequisite(s): AFR 101, AFR 102, AFR 201, AFR 202
Credits:

AFR 302 Air Force Leadership and Management II
This course is a continuation of study associated with AFR 301. Prerequisite(s): AFR 101, AFR 102, AFR 201, AFR 202
Credits:

AFR 401 National Security Affairs/Prep for Active Duty I
This course examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military as a profession, officer ship, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis is given to refining communication skills. Prerequisite(s): AFR 101, AFR 102, AFR 201, AFR 202
Credits:

AFR 402 National Security Affairs/Prep for Active Duty II
This course is a continuation of study associated with AFR 401. Prerequisite(s): AFR 101, AFR 102, AFR 201, AFR 202
Credits:

ANTHROPOLOGY (ANT)

ANT 100 Introduction to Anthropology
Anthropology is the scientific study of human-kind. This course offers an introduction to its four major sub-fields, namely; Physical or Biological anthropology (human evolution, the fossil record, ethology); Archaeology

(extinct cultures, classical civilizations, pre-history); Linguistics (language origins, development, diffusion, structure, and change); Sociocultural Anthropology (pioneers in the field, cross-cultural research, case studies, and the future). By focusing on the broad cultural implications and complexities of social communication and interaction, anthropology seeks to understand the whole human experience.
Course Offered: Fall, Winter, Spring, Summer
Credits:

ANT 110 Sociocultural Anthropology
Sociocultural Anthropology is concerned with examination of the social and cultural similarities and differences in the world's human populations. Subsistence patterns, social organization, economic structures, political systems, religion and creative behavior are the major areas we cover. By examining examples ranging from small gathering and hunting groups to large modern day communities, this course provides a broad perspective of the sociocultural realities of our world.
Course Offered: Fall, Spring
Credits:

ANT 120 Archaeology
Archaeology is the study of the cultural evolution of humankind using the material remains of past human behavior. This course introduces the methods, logic and history of archaeology through an examination of several ancient civilizations as understood through their architecture and artifacts. Topics include theoretical issues, fieldwork, and interpretation of artifacts and reconstruction of past cultural patterns. Examples will be drawn from such cities and civilizations as Mesopotamia, Crete, Troy, Ancient Egypt, Pompeii, and North and South America. Students will visit at least one relevant site, exhibit or museum as a course requirement.
Course Offered: Fall, Spring
Credits:

ANT 130 North American Indians
This course provides a comprehensive history of the human groups who populated North America before, during and after this continent became involved with the culture, politics and economics of Europe. It focuses on the dynamic heritages, languages, knowledge, technology, arts, and values that have been passed on through the generations. Students will be introduced to the anthropological literature concerned with the study and understanding of Native American cultures and societies. Some field study may be required.
Course Offered: Fall, Spring
Credits:

ANT 210 Modern Anthropology and Globalization
Cultural change and the social processes involved are major areas of cultural anthropological research. By introducing students to the application of anthropological methodologies such as field work and cross-cultural comparison, the course examines some of the major issues which confront human beings in a complex rapidly growing and changing world including: globalization, migration and immigration, population changes, social conflict, agricultural/technological development, nutrition, commodity/cultural exchange, and the future of small scale homogeneous societies. Prerequisite(s): Any 100 level social science or business course.
Course Offered: Fall, Spring
Credits:

ANT 211 Caribbean Cultures
This course covers: pre-European cultures in the Caribbean, the post-Columbus plantation system, contemporary economics and politics, community structure, religion, marriage and family, ethnic diversity, immigration and the arts. An in-depth study of these topics will provide knowledge, understanding and appreciation of this region while offering insights into the development of communities in the U.S. with Caribbean heritage.
Course Offered: Fall, Spring
Credits:

ANT 212 Introduction to Medical Anthropology
Medical Anthropology is a subfield of Anthropology that draws upon social, cultural, biological, and linguistic anthropology to better understand those factors which influence health and well being (broadly defined), the experience and distribution of illness, the prevention and treatment of sickness, healing processes, the social relations of therapy management, and the cultural importance and utilization of pluralistic medical systems. (SMA) This course introduces students to the subject and basic methods used in cross-cultural comparisons and research, as well as providing a better understanding of Western and non-Western perceptions and treatments of the body and health issues. Prerequisite(s): EGL 101, ANT 100 or SOC 122 or SOC 228 or BIO with lab
Course Offered: Fall, Spring
Credits:

ANT 220 Topics in Anthropology
Courses that range from 220-229 are special topics courses. This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or 110 or SOC 122
Credits:

ANT 221 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 222 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 223 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 224 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 225 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 226 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 227 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 228 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 229 Special Topics in Anthropology
This course provides the opportunity to study, explore, examine and analyze areas of special, short-term interest in anthropology. Each topic builds on knowledge learned in the 100 level courses. Prerequisite(s): ANT 100 or ANT 110 or SOC 122
Credits:

ANT 240 Women, Men and Social Change
This course studies men's and women's changing roles, relationships, and participation in the labor force both cross-culturally and historically. We give special emphasis to those changes which occur as technology changes. A major part of the course concerns how and why today's women and men arrive at their social, economic, political and legal statuses. Note: Students completing this course may not receive credit for SOC 240.
Credits:

ANT 250 Forensic Anthropology
This course provides a broad overview of Forensic Anthropology- an applied field within Anthropology- dealing with the osteological (skeletal anatomy and biology) analysis of human remains. We will employ and discuss scientific methods used to explore and a broad range of problems associated with identification and trauma analysis using data gathering methods such as: characteristics of the human skeleton; identification of ancestry, age, sex; recovery methods; use of appropriate technologies for analysis, including DNA. Prerequisite(s):Any BIO with lab and ANT 100 or ANT 110 or SOC 122
Course Offered: Fall
Credits:

ANT 320 Advanced Topics in Anthropology
Courses that range from 320-329 are special topics courses. This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Course Offered: Spring
Credits:

ANT 321 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 322 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 323 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 324 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 325 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 326 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 327 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 328 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 329 Advanced Topics in Anthropology
This course offers students the chance to study short term topics of specialized, more advanced areas of anthropology. Each topic builds and expands on information learned in introductory courses. This course is particularly recommended to students in the Anthropology Minor program, but is open to other interested students who meet the prerequisites. Prerequisite(s): ANT 100 or ANT 110 or ANT 120 and one 200 level ANT course
Credits:

ANT 330 Human Osteology
Human Osteology is designed to give students a detailed and intensive knowledge of human skeletal anatomy using an anthropological approach. This course will cover skeletal growth and development, variation, histology, and pathology, in addition to basic demographic analyses (age, sex, stature and ancestry). Through lectures and hand-on experience, using skeletal material from the collections housed in the Sociology and Anthropology department, students will learn to identify all skeletal elements, to understand and appreciate the variation observed within and between populations and to appreciate the influence culture has on the human skeletal system. Course lectures will be enhanced using case studies from archaeology and forensic anthropology. Prerequisite(s): ANT 120 or ANT 250 or BIO 166 or BIO 170
Credits:

ANT 360 Anthropological Theory
This course explores the broad historical outline of major theoretical approaches in the field of Anthropology, from the late 19th century to the present. Debates within the discipline and the larger historical, cultural and intellectual contexts in which they were produced, will be examined, as will the enduring relevance of these theories. The course includes reading and critical analysis of texts, as well as class discussions. Prerequisite(s): (ANT 100 or ANT 110), EGL 102, any 200 level ANT course. All with a grade of C or higher.
Credits:

ANT 366 Anthropological Research Methods
This course focuses on research methods in anthropology as the means for learning ethnographic research methods and how to talk and write about culture, as a basis of anthropological research. The purpose of the course is to gain experience in ethnographic practices, including interviewing,

fieldwork research, qualitative analysis, and writing critically informed accounts. Prerequisite(s): (ANT 100 or ANT 110), EGL 102 and any 200 level ANT course. All with a grade of C or higher.
Credits:

ANT 480 Research Internship I
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): ANT 366 with a grade of C or higher
Credit:

ANT 481 Research Intership I
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): ANT 366 with a grade of C or higher
Credits:

ANT 482 Research Intership I
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): ANT 366 with a grade of C or higher
Credits:

ANT 485 Research Internship II
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): ANT 366 with a grade of C or higher
Credit:

ANT 486 Research Internship II
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): ANT 366 with a grade of C or higher
Credits:

ANT 487 Research Internship II
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): ANT 366 with a grade of C or higher
Credits:

ARABIC (ARA)

ARA 131 Arabic I (Elementary)
A beginning course in Arabic emphasizing the gradual development of the four language skills: listening, speaking reading and writing with stress on communicative competence and cultural awareness.
Course Offered: Fall, Winter, Spring, Summer
Credits:

ARA 132 Arabic II (Elementary)
A continuation of ARA 131 or for students who have had 2 to 3 years of high school Arabic. This course emphasizes the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. Prerequisite(s): ARA 131
Course Offered: Fall, Spring, Summer
Credits:

ARA 233 Arabic III (Intermediate)
For those students who have taken ARA 132 or four or more years of high school Arabic. This intermediate course further emphasizes the development of the four language skills: listening, speaking, reading, and writing with stress on communicative competence and cultural awareness. A literary and cultural reading will be introduced. Prerequisite(s): ARA 132
Course Offered: Fall, Summer
Credits:

ARA 234 Arabic IV (Intermediate)
For those student who had taken ARA 233 or four or more years of high school Arabic. This course emphasizes structural review, intensified practice in oral expression with increased emphasis on reading and writing skills. Continued attention will be given to contemporary Arabic culture. Selections from Arabic authors will be read. Prerequisite(s): ARA 233
Course Offered: Fall, Summer
Credits:

ARCHITECTURAL TECHNOLOGY (ARC)

ARC 100 Introduction to Architecture and Culture
This course provides a foundational study of the art and history of western architecture and the context in which it is built. The course will focus on 20th century to newly built western architectural and urban developments. Course topics include how architecture of today has been influenced by its location, historically significant buildings, art, culture, landscapes, and urbanism. Designed to familiarize students with the architectural thinking of the built environment that surrounds them locally and during a study abroad/away experience to a western city, this course will give students an opportunity to develop an understanding and appreciation of the architecture discipline and its design objectives. Course content is drawn from numerous fields including architectural history and theory, design studies, philosophy, and urban studies.
Course Offered: Spring
Credits:

ARC 101 Introduction to Architecture & Construction
This is an introduction to elementary concepts, literacy and graphics in the architectural and construction field. This elective course is for students who have never taken any hand drawing/drafting and Computer Aided Drafting (CAD). The course will provide a hands on experience in architectural and construction drawing/drafting, sketching, model building, orthographic projection. The use of reading scales, lengths, areas and volumes in drawings is developed to help students visualize and understand building

elements and plans. The course will include basic CAD fundamentals, site visits and future employment requirements and opportunities for those interested in the major.
Course Offered: Fall, Spring
Credits:

ARC 131 Introduction to Graphics
Introduction to architectural and construction graphics using hand drawing/drafting and Computer Aided Drafting (CAD). Hand drawing/drafting topics include: lettering, technical sketching, use of drafting instruments, the fundamentals of orthographic projection, plan, section, elevation development and pictorial drawings to develop the student's abilities to visualize and describe objects graphically. CAD topics include software commands and drawing strategies for 2-D and 3-D CAD work, plans, sections, elevations, and details, information management, assembly of drawings and scales. Note: This course includes a required laboratory designed to provide extra time for the studio experience.
Course Offered: Fall, Spring
Credits:

ARC 255 Architectural Design I
Studies the principles of form, space and order that underlie architectural design. Concepts include: mass void modeling, volume and space construction, enclosing planes, circulation, organization, hierarchy, and structure. The diagram and sketch model are introduced as methods of understanding design. Concepts are explored in both three dimensional and graphic form. Note: This course includes a required laboratory designed to provide extra time for the studio experience. Prerequisite(s): ARC 131
Course Offered: Spring
Credits:

ARC 257 Architectural Design II
Continuation of Architectural Design I. Emphasis is placed on the process by which design decisions are made and the methods of analysis in context to the existing environment. Topics include: structure, form and function, building in context, light and construction. Note: This course includes a required laboratory designed to provide extra time for the studio experience. Prerequisite(s): ARC 255
Course Offered: Fall
Credits:

ARC 263 Mechanical, Electrical, Plumbing and Energy Systems
An overview of mechanical, electrical and plumbing (MEP) aspects of buildings. Intended to develop students' ability to analyze energy requirements of buildings and various methods of energy conservation and thermal efficiency. Topics covered include heat flow, system and equipment for heating and cooling. Also included are water supply and wastewater treatments for buildings. Prerequisite(s): CON 162
Course Offered: Fall, Spring
Credits:

ARC 303 Construction/Architecture Internship
A program of practical experience and independent study to supplement and enrich classroom learning. It is a fully faculty supervised structured industrial experience. Periodical written reports and end of the assignment employer report required. Prerequisite(s): ARC 131, CON 162 and CON 207, Junior-level status, and Department Chair approval
Course Offered: Summer
Credits:

ARC 310 Construction Design
Construction Design is a technology-based design studio emphasizing a methodological approach to the assembly of the building's envelope, materials and systems. The integration of building code requirements, life safety, sustainability, accessibility, building energy systems, structure, construction and materials are central to effectively achieving design intent. Knowledge from Materials and Method of Construction I and II, Energy in Buildings and Graphics are applied to specific drawing assignments. A residential Type V construction, and a commercial Type II or Type III construction, building project will be advanced resulting in a set of construction documents. Note: This course includes a required laboratory designed to provide extra time for the studio experience. Prerequisite(s): ARC 131, CON 106, and ARC 263
Course Offered: Fall, Spring
Credits:

ARC 350W Architectural Theory and Design Factors (Writing Intensive)
This course will examine a series of architectural theories and design factors that attempts to explain, predict or influence design decisions that result in the built environment. Topics include: historical theory, form and aesthetics; architectural technology; the urban, natural and human environment; economic, zoning and code factors; the social and behavioral implications of architecture, the design process itself and the architectural profession. This is a writing-intensive course. Prerequisite(s): ARC 257 and ARC 362 and EGL 101 with a grade of C or higher. Note: Students cannot get credit for ARC 350 and 350W; ARC 350W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Architectural/Construction Management Department.
Course Offered: Spring
Credits:

ARC 362 History of Western Architecture
A study of the development of building design from the Ancient Egyptians and Greeks throughout the major historical periods to the present. Emphasis is on the evolution of the forms derived from indigenous technologies of periods surveyed.
Course Offered: Fall
Credits:

ARC 364 Site Design and Construction
This is an advanced course in the utilization of engineering and architectural principles from concept through the construction techniques of traditional and sustainable site development. Site planning techniques, municipal land development requirements, zoning regulations, soil stabilization techniques, erosion control parameters, stormwater management practices, and site construction details are applied to a site design project. Computer-aided programs in site design and survey data management will be introduced. Prerequisite(s): ARC 310
Course Offered: Fall, Spring
Credits:

ARC 376 Architectural Design III
Continuation of Architectural Design II. Emphasis is placed on the context and constraints of urban and natural environment. The role of aesthetics, symbols, and historical elements in the making of places, spaces and communicating meaning are explored. Emphasis is placed on master planning and residential project(s) that integrate principles of architectural design/planning, and includes elements of building systems, structural and site design, zoning and building codes, etc. on an actual site in the area. Students will present their final project to invited architects at the end of the semester. Note: This course includes a required laboratory designed to provide extra time for the studio experiences. Prerequisite(s): ARC 257
Course Offered: Spring
Credits:

ARC 399 Applied Research Topics
A program of applied research and independent study on topics a faculty member is currently working on. this course is meant to enrich the learning experience by introducing the student to methods and analysis in applied research. this is a fully faculty directed and supervised structured research experience. Applied research work will be presented in an appropriate form. Prerequisite(s): Junior Level Status
Credits:

ARC 476 Architectural Design IV
Continuation of Architectural Design III. The role of physical and regulatory constraints in the making of places and buildings are explored. Emphasis is placed on architectural programming and non-residential project(s) that integrate principles of architectural design/planning, and includes elements of building systems, structural and site design, zoning and building codes, etc. on an actual site in the area. Students will present their final project to invited architects at the end of the semester. Note: This course includes a required laboratory designed to provide extra time for the studio experiences. Prerequisite(s): ARC 376
Course Offered: Fall
Credits:

ARC 486 Architectural Design V
This architectural design course integrates several architectural and engineering design philosophies and methodologies into a comprehensive studio project. This course introduces very little new material; rather it is to synthesize knowledge learned in the following areas of design and analysis:

architectural, structure, construction, site, energy (mechanical/electrical) and building systems and cost estimating. This multidisciplinary project uses a student design team approach. This course includes a required practicum designed to provide extra time for the studio experience. Prerequisite(s): Department Approval, Upper Division Status, recommended in the final semester, ARC 364, and ARC 476.
Course Offered: Fall, Spring
Credits:

ART HISTORY (ART)

ART 123 Art History
An analysis of the social, physical and psychological influences affecting the artist during various historical periods through the present. Emphasis is on the interrelationship between the changing purposes of art and variations in the meaning and form of artistic expression.
Credits:

ART 200 History of Graphic Design
Graphic design has great power and has both reflected and influenced our society and culture throughout history. This course identifies the key movements within the history of graphic design from the Graphic Renaissance throughout today and highlights how these movements have mirrored and changed the course of our society and the field of graphic design. Lectures, images and texts will be used in of each of the following periods: Graphic Renaissance, the Industrial Revolution, Mid-Century Modernism, Late-Modernism Post-Modernism and the Digital Age. Prerequisite(s): EGL 101
Course Offered: Fall, Spring, Summer
Credits:

ART 201 Survey of Art History: Prehistoric Times through The Middle Ages
A survey of the history of the visual arts from their beginnings in prehistoric times to the end of the Middle Ages. Works of art are studied both as monuments of intrinsic aesthetic value and as expressions of the needs, ideals, and aspirations of the societies in which they were created. Prerequisite(s): EGL 101
Course Offered: Fall, Spring, Summer
Credits:

ART 202 Survey of Art History: Early Renaissance to the Present
A survey of the history of the visual arts from the Early Renaissance to the Present. Works of art are studied both as monuments of intrinsic aesthetic value and as expressions of the needs, ideals, and aspirations of the societies in which they were created. Prerequisite(s): EGL 101
Course Offered: Fall, Spring, Summer
Credits:

ART 203 History of Interaction Design
The foundations of interaction design preceded the invention and use of the first computers and have evolved with the constant changes in technology. From punch cards to voice recognition, from the earliest computers to the mobile platforms of today, the need for a formal definition and definitive history of Interaction Design has increased as quickly as the technology has changed. This class will provide an over view of the history of the relationship between human beings and the tools and technology they use. The evolution of the computer and other digital devices will be explored with the emphasis on the events that lead to the formalization of Interaction Design into a vibrant and growing discipline. Prerequisite(s): EGL 101
Course Offered: Fall
Credits:

ART 242 Italian Renaissance Art
This course is designed to introduce students to Ancient through Baroque art found in Italy. Students will be required to meet on campus prior to departing for Europe to study the great masterpieces of the Ancient, Medieval, Renaissance and Baroque periods of art found in their original contexts throughout Italy. Works of Painting, Sculpture, Architecture, Illuminated Manuscripts and other applied arts will be studied as they relate to the periods in which they were created. Prerequisite(s): EGL 101
Course Offered: Summer
Credits:

ART 244 Visual Studies and Studio in Northern
This course is designed to introduce students to Medieval through 19th century European art found in the countries of France, Belgium and Holland. The class will meet four times on campus prior to departing for Europe to study the great masterpieces of the Gothic Medieval, Renaissance, Baroque, Rococo, Neo Classical, Romantic, Realistic and Impressionist and Post-Impressionist periods of art found in their original contexts throughout Europe. The Great institutions to be visited may include: the Louvre, the Rijks Museum and Hague to name a few. Prerequisite(s): EGL 101 and VIS 101 or VIS 110
Credits:

ART 245 Visual Art Studies and Studio in Greece
This course will introduce the Ancient through Byzantine periods of art as they occurred in Greece. Students will study the art and the history surrounding the art's creation during three lectures on the campus of Farmingdale State. This will occur before departing to Europe to visit the country of Greece to study the original art first hand over the period of two weeks. In Europe, students will explore the Aegean, Classical, Hellenistic, Roman and Byzantine art styles by studying works of architecture, sculpture, painting, illuminated manuscripts, archaeological and other applied arts in the context of churches, archaeological sites and art museums. Mythology and Homeric literature will be introduced in order to gain an insight into the cultural foundations of Western Art and Civilization. Students will be assigned a term paper based on specific works studied, and will also be expected to maintain a journal including notes, drawings and other entries related to their experience abroad. Prerequisite(s): EGL 101
Credits:

ART 301 Arts in the Twentieth Century
An analysis of the development of music, art, film, theater, dance, architecture, and design through the nine decades of the twentieth century. Field trips to various cultural events and extensive use of audio-visual materials are included. Prerequisite(s): EGL 102 with a grade of C or higher.
Credits:

ART 302 Art History: Survey of American Art
A survey of the development of painting, sculpture, and architecture in the United States from the early colonial period to the present. Lectures, supplemented by slides and textbook illustrations, will provide the basis for an analysis of the "schools" styles, and influences that determined and are affecting the direction of American Art.
Course Offered: Fall, Spring, Summer
Credits:

ART 303 MesoAmerican Art History
This course is designed to expose students to the art, culture and history of Mexico and Central America from the first peoples of the Americas to the Spanish Conquest, Colonial Period, Revolution, Modern and contemporary eras. The class will introduce the student to visual works of art including sculpture, painting, architecture and other applied arts. The course begins with prehistoric art of the Clovis peoples of the American Southwest and concludes with the contemporary era. The class covers Clovis, Olmec, Maya, Zapotec, Mixtec, Aztec, Mexican and Guatemalan art and touches on significant imported Spanish influences. The history, mythologies, politics, religions, and philosophical thought of the periods are introduced in order to provide a context for the visual art.
Course Offered: Spring
Credits:

AVIATION (AVN)

AVN 100 General Aeronautics
This course provides introductory orientation and practical information essential to the career progression of both pilots and aviation administrators. Topics include: attributes of an aviation professional; aircraft design, components, performance, operation, maintenance and safety with human factors emphasis.
Course Offered: Fall, Spring
Credits:

AVN 101 Aviation Industry: A History Perspective
This course is a basic survey of the aviation industry viewed from a historical perspective. Topics covered will range from the early days of aviation to the present. The course will also examine the chronology of aviation laws and regulations and how they have changed from aviation beginnings in the United States to present day. At the conclusion of this course, the student

will have a comprehensive knowledge of the U.S. air transportation industry and will understand its significant social/economic impact upon the nation and the world.
Course Offered: Fall, Spring
Credits:

AVN 104 Private Pilot Ground
Private Pilot-Ground Training will enable the student to meet the prerequisite(s) specified in 14 CFR Part 61.105 as well as 14 CFR Part 141 Appendix B, as appropriate. Selected subject areas will include airplane systems, aerodynamic principles, flight environment, communication and flight information, meteorology for pilots, FAA Regulations, National Airspace System, NTSB, AC's, interpretation of weather data, aircraft performance, radio and visual navigation, human factors, flight safety, and cross country flight planning. A grade will be issued upon taking the FAA "Knowledge Examination" necessary for the Private Pilot certificate. Prerequisite(s): FAA Student Pilot Certificate
Course Offered: Fall, Spring, Summer
Credits:

AVN 105 Private Pilot Flight To Solo
Private Pilot Flight to Solo will enable the student to meet some of the prerequisite(s) specified in 14 CFR Part 61.109 or 14 CFR Part 141 Appendix B, as appropriate. During this course, the student obtains the foundations for all future aviation training. The student becomes familiar with the training airplane and learns how the airplane controls are used to establish and maintain specific flight attitudes and ground tracks. At the conclusion of the course, the student demonstrates proficiency in basic flight maneuvers and the student pilot will have successfully completed no less than three (3) takeoffs and full stop landings in the traffic pattern as Pilot-in-Command. Students must have a FAA Student Pilot Certificate/FAA 3rd Class or higher Medical Certificate. Aero fees will be charged. Note: FAA minimum hours approved are 35 total hours for AVN 105 & 106. Prerequisite(s): FAA Student Pilot Certificate and AVN 104
Course Offered: Fall, Winter, Spring, Summer
Credit:

AVN 106 Private Pilot Flight To Certificate
Private Pilot Flight training will the enable student to meet the prerequisite(s) specified in 14 CFR Part 61.109 or 14 CFR Part 141 Appendix B, as appropriate. Private Pilot Flight to Certificate will enable the student to meet the requirements necessary to obtain a Private Pilot certificate. An enrolled student must demonstrate through oral examinations, practical tests, and appropriate records that the student meets the knowledge, skill and experience requirements necessary to obtain a Private Pilot certificate with an airplane single-engine land rating. Selected subject areas will include engine starting, normal and crosswind taxiing, radio communications, normal takeoffs, power on and power off stalls, maneuvering during slow flight, traffic patterns, go around from a rejected landing, crosswind and normal landings, cross country flying, radio navigation, cockpit management, low level wind shear precautions, airport and runway marking and lighting, constant airspeed climbs and descents, stall spin awareness, and steep turns. Students must have a FAA Student Pilot Certificate/FAA 3rd Class or higher Medical Certificate. A grade will be issued upon taking the FAA Private Pilot practical exam. Aero fees will be charged. Note: FAA minimum hours approved are 35 total hours for AVN 105 & 106. Prerequisite(s): AVN 104 and AVN 105 with a grade of C or higher; FAA Student Pilot Certificate
Course Offered: Fall, Winter, Spring, Summer
Credit:

AVN 110 Introduction to Flight
Introduction to Flight offers students with no prior flight time an opportunity to begin training in normal preflight, in-flight and post-flight procedures as provided by the SUNY Flight Line. They are afforded 5 hours combined flight and simulator time and may then commence flight training for Private Pilot. Aero fees will be charged. Note: Flight courses must be completed within a year from the date a student registers. Within this time frame a student must either 1) Successfully complete the course and be issued a grade, OR 2) Withdraw from the course, due to the following extenuating circumstances: Active Military Obligations, Medical conditions requiring removal from active flight status for a duration of 60 consecutive days or more. If neither of the above occurs, a failing grade will be assigned.
Course Offered: Fall, Winter, Spring, Summer
Credits:

AVN 112 Pilot Proficiency
Prior to beginning training at FSC students with prior flight experience of solo privileges or higher will be required to go through an evaluation. A grade and or transfer credit will be issued upon successful completion of the applicable requirements per ratings/certificates held. Course length is contingent upon student's knowledge and skills. Aero Fees will be charged.
Prerequisite(s): Prior flight experience of solo or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

AVN 126 Aviation Security Management I
This course will introduce students to techniques and procedures necessary to maintain security in the aviation industry. Topics will include screening passengers and cargo, access control, Closed Circuit Television (CCTV) monitoring, Explosive Trace Detection (ETD) systems, X-ray systems, wanding, and other new developmental technologies. In this course, students will become familiar with the above security methods by using hands on techniques. Students will learn how to operate and maintain Explosive Trace Detection machines and X-Rays, properly screen passengers and monitor CCTV systems to prevent breaches in security. Prerequisite(s): AVN 101 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

AVN 128 Unmanned Aerial Systems
The course provides students with a thorough understanding of Unmanned Aerial Systems (UAS) history, applications, airframe types, sensors, payloads, and future developments. In-depth coverage of applicable FAA regulations and flight operations in the National Airspace will coincide with demonstrations of UAS usage. Prerequisite(s): None
Course Offered: Fall
Credits:

AVN 201 Safety Ethics
This course emphasizes ethical decision making as it applies to Complex Systems, aviation and aerospace, nuclear power plant, civil and IT engineering and the medical field. These systems have an extremely narrow tolerance for error, often resulting in monumental impact on the public, the economy of the nation and human life. This course seeks to increase the awareness levels of ethical issue for industry professionals and to provide the necessary skills to effectively deal with such critical problem solving issues. Topics include complex systems ethical decision making, safety with human factors emphasis, applied ethics for members of complex systems, corporate culture and risk management theory, moral and values. Students cannot get credit for AVN 201 and 201W; AVN 201W can be used to fulfill the writing intensive requirement. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

AVN 202 Aviation Meteorology
A basic course in Aviation Weather. Weather theory including differential heating, air mass development, wind frontal activity and systems, weather hazards, weather reporting and weather forecasting is covered. Charts which are studied include Surface Analysis and Weather Depiction Charts, Constant Pressure Charts, Composite Moisture Stability Charts. Prerequisite(s): AVN 104 with a grade of C or higher
Course Offered: Spring
Credits:

AVN 208 Instrument Pilot Ground
Instrument Pilot Ground training will enable the student to meet the prerequisite(s) specified in 14 CFR Part 61.65(b), or 14 CFR Part 141 Appendix C, as appropriate. Selected subject areas will include Federal Aviation Regulations that apply to flight operations under IFR, appropriate information that applies to flight operations under IFR in the "Aeronautical Information Manual," Air Traffic Control system and procedures for instrument flight operations, IFR navigation and approaches by use of navigation systems, use of IFR enroute and instrument approach procedure charts, procurement and use of aviation weather reports and the elements of forecasting weather trends based on that information and personal observation of weather conditions, safe and efficient operation of aircraft under instrument flight rules and conditions, recognition of critical weather situations and wind shear avoidance, aeronautical decision making and judgment, and crew resource management, including crew communication and coordination. A grade will be issued upon taking the FAA "Knowledge Examination" necessary for the Instrument Pilot Rating. Prerequisite(s): AVN

104 and AVN 105 with a grade of C or higher FAA Private Pilot Knowledge Test (with a grade of 70 or better).
Course Offered: Fall, Spring, Summer
Credits:

AVN 209 Instrument Pilot Flight
Instrument Pilot Flight training will enable the student to meet the prerequisite(s) specified in 14 CFR Part 61.65, or 14 CFR Part 141 Appendix C, as appropriate. Instrument Pilot Flight will enable the student to meet the requirements necessary to obtain an Instrument Rating. Selected subject areas will include airplane attitude control by reference to instruments, use of full and partial panel reference, accurate use of navigation systems by maintaining positional awareness, holding patterns, instrument approaches, and IFR cross country procedures. A grade will be issued upon taking the FAA Instrument Rating practical exam. Students must possess an FAA Private Pilot Certificate/FAA 3rd Class or higher Medical Certificate. Aero fees will be charged. Note: FAA minimum hours approved are 35 total hours for AVN 209. Prerequisite(s): AVN 106 with a grade of C or higher Corequisite(s): AVN 208
Course Offered: Fall, Winter, Spring, Summer
Credit:

AVN 211 Commercial Pilot Ground
Commercial Pilot Ground Training will enable the student to meet the prerequisite(s) specified in 14 CFR Part 61.125(b), or 14 CFR Part 141 Appendix D, as appropriate. Selected subject areas will include: accident reporting requirements of the National Transportation Safety Board, basic aerodynamics and the principles of flight, meteorology to include recognition of critical weather situations, wind shear recognition and avoidance, and the use of aeronautical weather reports and forecasts, safe and efficient operation of aircraft weight and balance computations, use of performance charts, significance and effects of exceeding aircraft performance limitations, use of aeronautical charts and a magnetic compass for pilotage and dead reckoning, use of air navigation facilities, aeronautical decision making and judgment, principles and functions of aircraft systems, maneuvers, procedures, and emergency operations appropriate to the aircraft, night high altitude operations, procedures for operating within the National Airspace System, and procedures for flight and ground training for lighter than air ratings. A grade will be issued upon taking the FAA "Knowledge Examination" necessary for the Commercial Pilot certificate. Prerequisite(s): AVN 106 and AVN 208 with a grade of C or higher; FAA Instrument Rating Knowledge Test (with a grade of 70 or better).
Course Offered: Fall, Spring, Summer
Credits:

AVN 212 Commercial Pilot Flight
Commercial Pilot Flight training will enable the student to meet the prerequisite(s) specified in 14 CFR Part 61.129 or 14 CFR Part 141 Appendix D, as appropriate. Commercial Pilot Flight will enable the student to meet the requirements necessary to obtain a Commercial Pilot Certificate. Selected subject areas include accurate planning of VFR cross country flights, pilotage, dead reckoning, navigation systems, and commercial maneuvers as well as provide the skill necessary to safely fly a complex airplane. A grade will be issued upon taking the FAA Commercial Pilot practical exam. Students must possess a FAA 3rd Class or higher Medical Certificate. Aero Fees will be charged. Note: FAA minimum hours approved are 65 total hours for AVN 212. Prerequisite(s): AVN 209 with a grade of C or higher Corequisite(s): AVN 211
Course Offered: Fall, Winter, Spring, Summer
Credit:

AVN 230 Airline Management
This course will give the students an integrated study of airline operations and functions. Domestic and international regulation of air carries and the industry's changing structure due to alliances and globalization are addressed. Topics include the annual profit plan, uniform system of accounts and reports, demand analysis, scheduling, the theory of pricing, fleet planning, facilities planning, airline financing, airline economics, airline marketing and pricing, computer reservation and revenue management systems, fleet planning and scheduling, aircraft maintenance aircraft finance, labor relations, organizational structure, and strategic planning. Prerequisite(s): AVN 101 with a grade of C or higher.
Credits:

AVN 270 Introduction to Airports Management
An introductory course, which provides foundational information and strategic concepts about the air transport/ airport system. Topics include: Overview of Air Transport/ Airport system, Department of Transportation/Federal Aviation Administration, Intro to Airports/ Management, Organizational Development, Management Roles and Theories, Motivational and Communications Principles/Processes. Prerequisite(s): AVN 101 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

AVN 271 Airport Capacity/Delay/Airspace Environment
This course covers the following topics: Airport Capacity and Delay, Technological and Weather Solutions, Air Traffic Control, U.S. Airspace, Air Navigation and Navigational Aids Runway Lighting Systems, FAA FAR Part 77, Environmental Regulations and Airport Noise, Land Use Compatibility. Prerequisite(s): AVN 101 with a grade of C or higher
Course Offered: Spring
Credits:

AVN 280 Introduction to Air Cargo Operations
The course introduces the student to the growing, technical and multi-faceted air cargo industry. The student will understand the role that air cargo has played in the development of the air carrier industry, contractual and legally binding regulations, and national and international trade. A visit to off-campus air cargo facilities will compliment classroom discussions, lectures and videos. Prerequisite(s): AVN 101 with a grade of C or higher or CRJ 100
Course Offered: Fall, Spring
Credits:

AVN 281 Air Cargo Government and Industry Regulations
This course exposes the student to the study and process of regulations of the Air Cargo Industry. It includes a study of and compliance with government and air carrier regulations; with practical applications of the specialized manuals and penalties of non-compliance. It includes the influence that organizations such as ICACO and IATA have on the Air Cargo industry. Prerequisite(s): AVN 101 with a grade of C or higher
Credits:

AVN 291 Air Cargo Cooperative Experience
This Cooperative Experience or Internship is an elective for second year Aviation Administration students. The course will provide employer/student designed internship experience. The student will acquire work skills and cooperative attitudes that will complement and enhance the academic competencies learned during the prior year.
Credits:

AVN 300 Government in Aviation
This course expands and focuses on many of the regulatory subjects in AVN 101 (Aviation History). It is a study of the constitutional, legislative, executive and judicial control of aviation from the local, state, federal and international perspective. This course forms the foundation for AVN 400 Aviation Law. Students who take AVN 300W cannot receive credit for AVN 300. AVN 300W can be used to fulfill the writing intensive requirement. Prerequisite(s): AVN 101 with a grade of C or better or CRJ 100, Junior or Senior status required.
Course Offered: Fall, Spring
Credits:

AVN 309 Certified Flight Instructor- Ground
This course will allow students to meet the requirements as specified by 14 CFR Part 61.185 or 14 CFR Part 141 Appendix F, as appropriate, and will allow students to meet the requirements necessary to complete the Certified Flight Instructor Written Exams: Fundamentals of Instruction (FOI), Certified Flight Instructor Airplane (FIA), and the Certified Flight Instructor Instrument Written Exam (CFII). Selected subject areas will include applicable Federal Aviation Regulations of this chapter that relate to Certified Flight Instructor pilot privileges, limitations, and flight operations, the fundamentals of instructing, including: the learning process; elements of effective teaching; student evaluation and testing; course development; lesson planning; and classroom training techniques. Also included are the aeronautical knowledge areas for a recreational, private, and commercial pilot certificate applicable to the aircraft category for which flight instructor privileges are sought. A grade will be issued based on the completion of the following written exams: the student will either take the FAA "Knowledge Examinations" (Written Exams) necessary for the Certified Flight Instructor Certificate; Fundamentals of Instructing (FOI), Flight Instructor Airplane (FIA), and the Flight Instructor Instrument Written Exam (FII) or the FAA "Knowledge Examinations" (Written Exams) necessary for the Advanced Ground Instructor Certificate; Fundamentals of Instructing (FOI), Advanced

Ground Instructor (AGI), and the Instrument Ground Instructor (IGI). Prerequisite(s): AVN 211 and AVN 209 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

AVN 310 Certified Flight Instructor-Flight
This course will allow students to meet the requirements as specified by 14 CFR Part 61.187 or 14 CFR Part 141 Appendix F, as appropriate, and will allow students to meet the requirements necessary to complete the Certified Flight Instructor Airplane Practical Exam. Selected subject areas will include applicable Federal Aviation Regulations of this chapter that relate to Certified Flight Instructor pilot privileges, limitations, and flight operations, the fundamentals of instructing, including: The learning process; elements of effective teaching; student evaluation and testing; course development; lesson planning; and classroom training techniques. Also included are practical flight training modules necessary to gain the required aeronautical experience and proficiency applicable to recreational, private, and commercial pilot certificates appropriate to the aircraft category/class for which flight instructor privileges are sought. A grade will be issued upon taking the FAA Certified Flight Instructor Certificate. Students must possess an FAA Commercial Pilot Certificate with Instrument Privileges/FAA 3rd Class or higher Medical Certificate. Aero Fees will be charged. Prerequisite(s): AVN 212 with a grade of C or higher Corequisite(s): AVN 309
Course Offered: Fall, Winter, Spring, Summer
Credit:

AVN 320 Air Carrier Flight Operations
A study of the operational considerations and procedures of air carrier flight operations. Flight Operations conducted under 14CFR121 (Part121 air carriers) are highlighted. Also included are 14CFR135 (Part135) Air Carriers, supplemental air carriers and Operators of Large Aircraft flight operations. Prerequisite(s): AVN 208 with a grade of C or higher
Course Offered: Spring
Credits:

AVN 321 Physiology of Flight
Operational and lifestyle considerations and consequences arising from physiological factors will be introduced, with an emphasis on the atmosphere and high-altitude flight (Hyperbarism). General fundamentals of anatomy and psychology will be reviewed to impart career-prolonging health maintenance and stress reduction techniques. Subtle yet critical aviation issues such as situational awareness and crew resource management will be explored. Prerequisite (s): AVN 202 with a grade of C or higher
Course Offered: Fall
Credits:

AVN 322 Advanced Aircraft Systems
This course exposes the student to the advanced aircraft systems commonly found in air carrier aircraft. Included are Electrical Systems, Hydraulics, Pneumatics, Flight Controls, Landing Gear Systems, Auto-Pilots and Cockpit Automation, Master Warning and Caution Annunciation Systems. At the conclusion of this course, the student should have a good level of operational understanding of these systems. Prerequisite(s): AVN 211
Course Offered: Spring
Credits:

AVN 323 Air Carrier Flight Planning
This course exposes the student to the area of flight planning for the major carrier's operations. The main area of study will include the following subjects: High Altitude Aviation Meteorology, Transport Category Aircraft weight and balance, Take-off, En-route and Landing Performance and Emergency Procedures. Advanced Flight Planning, Jet Route Structure. Jeppesen IFR High Altitude En-route Charts. NOS and Jeppesen IFR Approach Plates and Published Minimums; U.S. Air Traffic Control Systems/Airspace; Airline Positive Operational Control Concepts; Federal Aviation Regulations Part 121/1199/135; Airline Communications Systems- Secal/ARINC/ACARS/ Satcom Captain/Dispatcher Joint Authority/Decision Making. Prerequisite(s): AVN 322
Course Offered: Fall
Credits:

AVN 325 Safety of Flight
Safety of Flight is an essential course for students to understand the principles and regulatory practices of commercial aviation safety in the United States and worldwide community in the 21st century. It includes an examination of aircraft accidents, the respective roles of the FAA and NTSB, human factors in aviation safety, air traffic safety systems, and introduction to Safety Management Systems (SMS). The student will obtain the necessary safety of fight knowledge to be able to effectively work in the aviation industry. At the completion of the course, students will be able to assess contemporary issues in safety of fight and demonstrate understanding of aviation safety and human factors. Prerequisite(s): AVN 104 and AVN 202 with grade of a C or higher.
Credits:

AVN 326 Airport Security Management
The aviation industry is one of the most highly targeted industries for acts of terrorism. This course enables students to develop the skills necessary to effectively manage and maintain security systems and measures vital to airports. Students will assess current mandates by the Transportation Security Administration (TSA), Department of Homeland Security (DHS) and Federal Aviation Administration (FAA) and critique their effectiveness. Practical exposure to screening techniques such as the use of Explosive Trace Detection (ETD) systems, X-ray systems, wanding and other new developmental technologies will be covered. Note: students who have received credit for AVN 126 cannot receive credit for this course. Prerequisite(s): AVN 300 with a grade of C or higher
Credits:

AVN 330 Airline Marketing
This course examines the principles of marketing used by the major U.S. airlines and how they are applied for long term financial success in the industry. There will be an initial review of the structure of the air transport market and the industry marketing environment. This will be followed by a detailed study examining the airline business and marketing strategies, product design, pricing, revenue management, distribution channels, and selling and advertising policies. Prerequisite(s): AVN 101 with a grade of C or higher
Course Offered: Fall
Credits:

AVN 350 Air Traffic Management
In this course, students will gain an in-depth understanding of the National Airspace System (NAS) through the introduction of the functions, rules, phraseology, and publications utilized within the Air Traffic Control (ATC) system. Topics include airborne and ground navigational aids, GPS, radar and communications applied by the ATC system. Students will demonstrate proper aircraft sequencing and separation techniques through the use of simulation, while building upon Crew Resource Management (CRM) concepts traditionally used by aircrews. Prerequisite(s): (AVN 100 or AVN101) and (AVN 202 or PHY 116) with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

AVN 370 Airport Management and Finance
In this course students will analyze airport management with an emphasis on financial strategies and practices. Topics include relevant regulations, components of airport terminals and ground access, airport fees and revenue strategies, Airport Improvement Program (AIP), state grant programs, Passenger Facility Charge (PFC) funding, financing, and private investment. Prerequisite(s): BUS 102, AVN 271 with a grade of C or higher. Corequisite(s): BUS 201
Course Offered: Fall, Spring
Credits:

AVN 371 Airport Planning
This course covers the following topics: Airport System Planning, National Plan of Integrated Airport Systems (NPIAS), Metropolitan Airport System Planning, State Airport System Planning, Airport Master Planning, Airport Layout Plans, Airport Design, Design of Other Landing Facilities, Industrial Park Design, Terminal Planning/ Design/ Operation, Other Terminal Area Buildings, Americans with Disability Act Access. Prerequisite(s): AVN 270 with a grade of C or higher.
Course Offered: Spring
Credits:

AVN 380 Air Cargo Sales Management
The students will be introduced to the topic through a variety of pedagogical methods that will include lectures, hands-on use of the most prominent manuals, regulations related to the industry, group discussions and videos. Prerequisite(s): AVN 280
Credits:

AVN 381 Air Cargo Management Techniques
This course will provide students with an overview of the air cargo management in relation to leadership, safety, cost effectiveness, and problem solving. This course will cover various managerial topics that pertain to air cargo operations, with a particular focus on identifying staffing needs, providing acceptable customer service, determining practical goals for maintaining service levels over an extended period of time. This course will also review IATA rules and regulations, and provide students with practical in-class exercises which will focus on developing operational flight schedules for an air cargo operator while maintaining the objective of remaining compliant with various human resources and labor regulations. Prerequisite(s): AVN 280
Credits:

AVN 400 Aviation Law
Aviation Law develops the student's knowledge to the application level of learning by emphasis on real cases to demonstrate the legal, regulatory and government theory previously discussed in AVN 101and AVN 300. Emphasis will be on the FAA's roles in regulating aviation including the rule making process, certification of airmen, medical certification and enforcement. Prerequisite(s): AVN 300 or AVN 300W with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

AVN 401 Airline Economics and Marketing
This course covers the economic development and marketing principles of the air carrier industry. Details of the transition from regulation to deregulation are explored as well as the marketing and financial practices as they exist today under deregulation. The current economic environment is studied along with a detailed examination of airline business and marketing strategies, product design, pricing, revenue management, and distribution channels. Prerequisite(s): ECO 156 and AVN 300 with a grade of C or higher.
Course Offered: Spring
Credits:

AVN 404 Corporate and Business Aviation
Study of the flight operations, administration, maintenance and financial functions of a corporate flight department. The FBO and small airplane business will be discussed including applications in aerial photography and spraying, aircraft sales and financing. Prerequisite(s): AVN 300 or 300W
Credits:

AVN 410 Commercial Multi-Engine Pilot Rating
This course prepares the Commercial Pilot with single-engine and instrument ratings to add multi-engine airplane privileges to their certificate. Commercial Pilot Flight training will enable the student to meet the prerequisite(s) specified in 14 CFR Part 61.63 or 14 CFR Part 141.57, as appropriate. Additionally, the student will gain practical experience applying the concepts of Crew Resource Management in the cockpit by utilizing a series of Flight Training Device sessions and defined flight training sessions. The student will be introduced to multi crew operations by applying newly acquired skills applicable to the multi crew environment such as Pilot Flying, Pilot Monitoring, advanced aircraft briefings, emergency and abnormal situations in various phases of flight, cockpit automation, Crew Resource Management to include crew communication and coordination, and Aeronautical decision making and judgment. Students must possess an FAA Commercial Pilot Certificate/FAA 3rd Class or higher Medical Certificate. Aero Fees will be charged. A grade will be issued upon taking the FAA Commercial Multi-Engine Practical Exam. Prerequisite(s): AVN 209 and AVN 212 with a grade of C or higher.
Course Offered: Fall, Winter, Spring, Summer
Credit:

AVN 411 Certified Flight Instructor Instrument
This course prepares the student with a CFI to acquire the Flight Instructor -Instrument rating. Training will consist of at least 20 hours flight and 15 hours ground instruction. Passing the FAA Flight Instructor-Instrument Airplane Knowledge test and the FAA flight test will complete the course. Aero fees will be charged. Prerequisite(s): AVN 310 with grade of a C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

AVN 412 Certified Flight Instructor-Multi-Engine
This course prepares the student with a CFI to acquire the Flight Instructor – Multi Engine Rating. Training will consist of at least 25 hours flight and 20 hours ground instruction. Passing the FAA Flight Instructor Multi Engine Knowledge test and the FAA flight test will complete the course. Aero fees will be charged. Prerequisite(s): AVN 310 and AVN 410 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credit:

AVN 417 Homeland Security in Aviation
This course will expose the student to the importance of Homeland Security in the aviation industry and the important role each employee in the industry is charged with. Students will gain experience in identifying false travel documents and identifying suspicious air travelers. This course will focus on current national security threats in the aviation industry. Upon the successful completion of this course the students will meet the requirements of the initial and recurrent security training requirements mandated by the Transportation Security Administration (TSA) under Title 49 CFR 1552. Prerequisite(s): AVN 300 or 300W with a grade of C or higher.
Course Offered: Spring
Credits:

AVN 421 Gas Turbine Engines
An in-depth study of gas turbine engines as found in air carrier and high performance aircraft. Topics include the history of turbine development, jet propulsion, theory engine design and construction and control systems. FAA Commercial Pilot Certificate with Instrument Rating required. Prerequisite(s): AVN 321
Course Offered: Fall
Credits:

AVN 422 Aerodynamics and Aircraft Performance
Advanced aerodynamic principles will be introduced following extensive review of fundamentals. Emphasis will be on practical design and performance considerations including mission, cost, and feasibility. This course will familiarize the student with the application of aeronautical principles and design practices. The course will focus steps in preliminary design of general aviation aircraft with emphasis on the iterative aspects of design. Prerequisite(s): AVN 211 with a grade of C or higher and PHY 136
Course Offered: Fall
Credits:

AVN 423 Crew Resource Management
This course deals with flight-crew decision making. It includes, but is not limited to: optimum decision-making techniques; personality profiling; crew communication; high risk areas of a flight; maintaining situational and spatial awareness; crew discipline; and airline-level standard operating procedures. Prerequisite(s): Junior Advances Standing and Completion of AVN 300W level course.
Course Offered: Fall
Credits:

AVN 424 Advanced Avionics and Cockpit Automation
Introduction to modern cockpit avionics suites as found in corporate Jets and Transport Category aircrafts. Principles, operations and limitations of advanced avionics suites typically found in this category aircraft. Automation topics covered include automatic flight control and flight director systems, stability augmentation systems, power management systems, flight management systems and autoland/go around systems. Latest technology navigation systems topics including inertial navigation systems (INS), inertial reference systems (IRS), Global Positioning Systems (GPS) including Local Area Augmentation Systems (LAAS) and Wide Area Augmentation System (WAAS). Prerequisite (s): AVN-209 with C or higher and AVN-211 with a grade of C or higher.
Course Offered: Spring
Credits:

AVN 425 Safety of Flight
Safety of Flight is an essential course for students to understand the principles and regulatory practices of commercial aviation safety in the United States and worldwide community in the 21st century. It includes an examination of aircraft accidents, the respective roles of the FAA and NTSB, human factors in aviation safety, air traffic safety systems, and introduction to Safety Management Systems (SMS). The student will obtain the necessary safety of flight knowledge to be able to effectively work in the aviation industry. At the completion of the course, students will be able to assess contemporary issues in safety of flight and demonstrate understanding of aviation safety and human factors. Prerequisite(s): AVN 209 with a grade of C or higher and AVN 211 with grade of a C or higher.
Course Offered: Spring

Credits:

AVN 432 Aviation Insurance
This course covers the basic foundations of Aviation Insurance and Risk Management. Topics to be covered include hull and liability coverage, subrogation and the insurer's interests after covering a loss, underwriting and claims management. This course helps students to explain the various types of insurance coverage found in aviation such as, hangar keepers, employers, pilots, airlines and airport operators. Prerequisite(s): AVN 400
Credits:

AVN 440 Commuter Turboprop Training
This course exposes the student to an actual air carrier transport aircraft initial training ground school. The course will examine all of the specific aircraft and engine systems for this airplane and will be conducted so as to simulate the intensity of an airline training course. All major systems and subsystems of the aircraft as well as its limitation and normal and emergency operating procedures will be covered in detail. At the conclusion of this course, the student should be able to pass an airline style written and oral exam on the aircraft. Prerequisite(s): AVN 322 and AVN 421
Corequisite(s): AVN 424
Credits:

AVN 443 Specialty Flying
Specialty flying is a vital area in General Aviation although it does not attract the attention that airline and military flying do. This course will deal with Agricultural Aviation; Bush Flying using float, large wheel and ski equipped aircraft.
Course Offered: Fall, Winter, Summer
Credits:

AVN 447 Capstone Professional Pilot Seminar
The Capstone Pro Pilot Seminar will be the culminating Upper Division experience in flight education for the Professional Pilot program. The seminar will require students to examine key aviation concepts presented in the Pro Pilot track and connect key learning objectives associated with these concepts to the skills necessary for success in the aviation industry as a pilot. Selected subject areas will include but not be limited to aviation safety, aviation law, crew resource management, safety ethics, physiology of flight, and aviation meteorology and how these relate to the requirements to be a certificated instrument-rated commercial pilot and fly as a certified flight instructor or a multiengine airplane pilot. Students will be required to complete comprehensive case studies of aviation accidents, present results to the seminar participants and lead the case discussion. A Capstone mentorship flight or simulator event summarizing the key course concepts will be included as part of the course (flight fees as applicable). Prerequisite(s): AVN 209 with C or higher.
Course Offered: Fall
Credits:

AVN 470 Airport Operations
This course covers the following topics: Airport Operations and FAA FAR Part 139, FAR Part 139, Airport Self Inspection, Pavement Surfaces, Movement and Safety Areas, Airfield Lighting and Pavement Marking, Snow and Ice Control, Snow Removal Equipment, Airport Condition Reporting, Ground Vehicles, Public Protection, Wildlife Hazard Management, Airport Emergency Plan and Response, Airport Air Carrier Security. Prerequisite(s): AVN 270 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

AVN 471 Aviation Administration Seminar
This seminar is the capstone course for students majoring in Aviation Administration. It is designed to integrate all the topics that students have learned during their courses of study. The class will include practical preparation for a career in aviation, and students will have opportunities during the semester to participate in industry visits/observations in order to get a better understanding of future job options and placement. The students' main focus during the semester will be a detailed research project which will allow them to demonstrate what they have learned throughout the program. The research project will culminate in a formal presentation of results to members of the university community and also representatives from industry. Prerequisite(s): AVN 470 or AVN 480 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

AVN 480 Air Cargo Operations-Advanced
The course will expand upon the introductory concepts learned in AVN 280. Students will be exposed to various in-class exercises that will address the importance of identifying the variables involved in the flow of typical air cargo operations. Students will gain expertise in "troubleshooting" and solving problematic situations such as flight delay due to mechanical and/or weather; late delivery of high priced cargo products; emergency response to live animal and/or perishable equipment; damage to aircraft and/or cargo ULDs or other equipment; and employee injury. The real world applications of Quality Work Programs (QWP) and current advances in air cargo automation and/or computer controlled processes will be explored. Communication skills in air cargo operations management will also be stressed. Prerequisite(s): AVN 280
Credits:

AVN 490 Aviation Internship
This course is designed to give students the opportunity to earn elective credit for acquiring hands-on industry experience. Prior work site approval by the Aviation Department is required before enrolling in this course. Prerequisite(s): Completion of 30 credits with an overall GPA of 2.5.
Course Offered: Fall, Spring, Summer
Credits:

COMPUTER SYSTEMS (BCS)

BCS 101 Programming Concepts and Problem Solving
This course will provide an introduction to programming logic and problem solving techniques using different programming languages. The topics covered in this course will provide the skills needed to learn languages such as Visual Basic, C+ + and JAVA. Topics include such items as constants and variables, data types, scope of variables, basic logic constructs, subroutines and functions. Students who have completed BCS 120 or equivalent cannot take BCS 101.
Credits:

BCS 102 Computer Concepts and Applications
This is an introductory course in the use of personal computers in today's society. Students will receive instruction in basic computer concepts and terminology, the fundamentals of the Windows operating system and have hands on experience at the beginning to intermediate level using Microsoft Word, Excel, and PowerPoint. The Internet will be used to supplement textbook and lecture materials. Note: Computer Systems students cannot use BCS 102 to meet a BCS Elective requirement.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BCS 109 Introduction to Programming
Using Python, this course covers the basic concepts of computer programming. Python is an easy-to learn, high-level computer programming language that is widely used in many applications. This course introduces the fundamental elements of programming such as expressions, conditionals, loops, functions, files, and then use these elements to create simple interactive applications. This course covers also simple GUI and animation-based applications.
Course Offered: Fall, Spring
Credits:

BCS 110 Introductory Special Topics in Computer Programming and Information Systems
This course will cover introductory topics that are not covered in the regular curriculum. Topics may vary from semester to semester and reflects the interests and needs of students, faculty and industry. Permission of Department Chair is required. Prerequisite(s): Permission of Department Chair
Course Offered: Fall, Summer
Credits:

BCS 111 Introductory Special Topics in Computer Programming and Information Systems
This course will cover introductory topics that are not covered in the regular curriculum. Topics may vary from semester to semester and reflects the interests and needs of students, faculty and industry. Permission of Department Chair is required. Prerequisite(s): Permission of Department Chair
Course Offered: Summer
Credits:

BCS 112 Introductory Special Topics in Computer Programming and Information Systems
This course will cover introductory topics that are not covered in the regular curriculum. Topics may vary from semester to semester and reflects the interests and needs of students, faculty and industry. Permission of Department Chair is required. Prerequisite(s): Permission of Department Chair
Credits:

BCS 113 Introductory Special Topics in Computer Programming and Information Systems
This course will cover introductory topics that are not covered in the regular curriculum. Topics may vary from semester to semester and reflects the interests and needs of students, faculty and industry. Permission of Department Chair is required. Prerequisite(s): Permission of Department Chair
Credits:

BCS 114 Introductory Special Topics in Computer Programming and Information Systems
This course will cover introductory topics that are not covered in the regular curriculum. Topics may vary from semester to semester and reflects the interests and needs of students, faculty and industry. Permission of Department Chair is required. Prerequisite(s): Permission of Department Chair
Credits:

BCS 120 Foundations of Computer Programming I
This course introduces the C++ Programming Language as a means of developing structured programs. Students will be taught to develop algorithms using top-down stepwise refinement. Students will be introduced to the concept of Object Oriented programming. In addition, students will get a thorough exposure to C++ syntax and debugging techniques.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BCS 130 Website Development I
In this course, students will use both HTML and CSS to modify the appearance of Web page content and layout. Hypertext Markup Language (HTML) is a standardized code used to format web pages. Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language, such as HTML. In addition, students will learn the principles of Responsive Web Design to create an optimal viewing experience irrespective of the device used to display the Web page.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BCS 160 Computers, Society and Technology
This is an introductory course that provides students with the knowledge to stay current and informed in a technology-oriented, global society. Students will receive instruction in basic computer concepts and terminology, the fundamentals of the Windows operating system and have hands-on experience at the beginning to intermediate level using Microsoft Excel and Access. The Internet will be used to supplement textbook and lecture materials. Note: Students taking this course may not receive credit for BCS 102 or 202.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BCS 208 Introduction to Networks
This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IPv4 and IPv6 addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LAN's, perform basic configurations for routers and switches, and implement IP addressing schemes. The laboratory component of this course will give the students hands-on experience configuring equipment needed to build a LAN. Prerequisite(s): Sophomore status
Course Offered: Fall, Spring
Credits:

BCS 209 Routing and Switching Essentials
This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. The laboratory component of this course will give the students hands-on experience configuring routers, switches and basic WAN connectivity. Prerequisite(s): BCS 208 with a grade of C or higher
Course Offered: Fall
Credits:

BCS 215 UNIX Operating Systems
This course develops the fundamental knowledge of computer operating systems using UNIX. Topics include basic understanding of the UNIX system, utilizing the file system, programming language and security system. BCS 120 may be taken as a Prerequisite or Corequisite. Prerequisite(s): BCS 120 Corequisite(s): BCS 120
Course Offered: Fall, Winter, Spring, Summer
Credits:

BCS 230 Foundations of Computer Programming II
This course expands the knowledge and skills of Foundations of Computer Programming I. Among the topics covered are: arrays, pointers, strings, classes, data abstraction, inheritance, composition and overloading. Prerequisite(s): BCS 120 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

BCS 232 Electronic Commerce
This cross-listed business management and business computer systems course covers electronic commerce (EC) foundations, retailing methodologies, and marketing research. Focus will be on the various forms, strategies, and implementations of EC including business-to-business (B2B), business-to-consumer (B2C), and consumer-to-consumer (C2C). Also covered will be social networking, electronic payment systems, and public policy issues including privacy and intellectual property matters as well as recent information technology advancements. Students completing BCS 232 may not receive credit for BUS 232. Prerequisite(s): BUS 109 and BCS 101 or BCS 102
Credits:

BCS 235 JavaScript and jQuery
This course introduces students to JavaScript and jQuery. Students will learn how to write their own scripts in JavaScript, learn jQuery syntax, and use the jQuery and jQuery UI libraries. Students will learn how to devise jQuery and jQuery UI scripting techniques such as effects, animation, tabbed panels, menus, accordions, content sliders, drag and drop, tooltips, date pickers, custom tooltips, dialogs and portlets, and interactive image sliders and carousels. Students who have taken BCS 250 cannot receive credit for this course. Prerequisite(s): BCS 130 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

BCS 240 Website Development II
In this course, students will learn how to create websites that deliver a seamless experience across a diverse range of desktop, mobile, and handheld devices. In addition, students will learn how to perform forms validation, create navigation and menuing systems, build responsive layouts with flexible content, code media queries, and create and modify template and child pages. Students will use CSS 3 and a Content Management System to create user interfaces with toolbars, animations, buttons, forms, lists, events, and themes. Prerequisite(s): BCS 130 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

BCS 255 Operating Systems
This course develops the fundamental knowledge of computer operating systems. Topics included in this study are types of operating systems, facilities and features of the different systems and user techniques.
Credits:

BCS 260 Introduction to Database Systems
This course provides the fundamental knowledge of database concepts. Topics studied will include the history and advantages of database systems, and the process of database design including entity-relationship diagrams and database normalization. Students will have hands-on experience using SQL (Structured Query Language). Prerequisite(s): BCS 120 and BCS 160 all with a grade of C or higher

Course Offered: Fall, Spring, Summer
Credits:

BCS 262 Data Communications
This course is an introduction to the concepts and applications of computer networking and its role in the business world today. Topics include: history of networking and applications, voice and data communications, hardware, transmission, network topologies, network analysis, the OSI model, design, implementation and management issues.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BCS 300 Management Information Systems
Managers have increasing responsibility for determining their information system needs and for designing and implementing information systems that support these needs. Management information systems integrate, for purposes of information requirements, the accounting, finance, and operations management functions of an organization. This course will examine the various levels and types of software and information systems required by an organization to integrate these functions. Prerequisite(s): BUS 109 or BUS 111 or BCS 160 or BCS 109
Course Offered: Fall, Winter, Spring, Summer
Credits:

BCS 301 Systems Analysis and Design
This course explores the major issues in the analysis and design of a system, including methods of data collection, information requirements analysis, and the analysis process are discussed. Emphasis is placed on the importance of the user in the design process and focuses on approaches that improve the successful implementation of a computer system. Topics include general systems theory, Systems Development Life Cycle, data flow diagrams, data dictionary, hardware and software evaluation, feasibility analysis, CASE tools and prototyping. Students are required to demonstrate their skill in using project management and diagramming application software. Note: Credit cannot be given for both BCS 265 and BCS 301. Prerequisite(s): BCS 120 with a grade of C or higher and Junior Level Status.
Course Offered: Fall, Spring, Summer
Credits:

BCS 302 Systems Analysis and Design II
This is an advanced course in Systems Analysis and Design. Students will utilize the tools covered in BCS 301 to analyze system designs. Topics covered in the design phase will include input, output, and database and user interface design. A CASE Tool and/or other rapid application development tools will be used to create the interfaces. Additional topics in the implementation and maintenance phases will include testing, implementation and maintenance. Object-oriented systems and UML will also be covered. Students will analyze and prepare various case projects and will present and document their results. Prerequisite(s): BCS 301 with a grade of C or higher.
Course Offered: Fall
Credits:

BCS 303 XML
Students will be introduced to the basic intermediate concepts of XML, the Extensible Markup Language. Students will learn how to create the XML document, work with name- spaces, Document Type Definitions, and XML schemas. In addition, students will also use the advanced features of XML, such as XPath and the XSLT stylesheet language to transform XML documents. Prerequisite(s): BCS 130 and BCS 120 all with a grade of C or higher
Credits:

BCS 305 Data Visualization
Data visualization describes any effort to help people understand the significance of data by placing it in a visual context. Patterns, trends and correlations that might go undetected in text-based or spreadsheet data are recognized using data visualization software. In this course, students will use data visualization software to display data using infographics, dials and gauges, geographic maps, spark lines, and heat maps, as well as creating detailed bar, pie, and fever charts. These maps and charts will include interactive capabilities, enabling users to manipulate the data or drill into the data for querying and analysis. Prerequisite(s): BCS 300 with a grade of C or higher
Credits:

BCS 311 Local Area Networks and Server Administration
This course will provide an introduction to local area networking concepts. These ideas will be explored in conjunction with an introduction to the concepts and tools necessary to implement, administer and troubleshoot the Microsoft Windows network. Hands-on experience will be used in the presentation of system administration tools. Prerequisite(s): BCS 262 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

BCS 315 UNIX Operating Systems II
This course further develops the knowledge of UNIX with an emphasis on the practice skills required to deploy and administer modern Unix and Linux systems. Topics include selecting and installing operating systems, adding users, virtualization, and the configuration and management of storage, networks and servers. Particular stress is paid system administration practices that foster the creation and maintenance of scalable and secure systems. Prerequisite(s): BCS 215 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

BCS 316 PERL Programming
This course provides an introduction to programming in the Perl language. Students will learn the Perl syntax, the basics of using regular expressions, how to use Perl data types, and how to access and manipulate files. Students are also introduced to database connectivity and debugging techniques. Prerequisite(s): BCS 215 and BCS 230 all with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

BCS 317 Enterprise Resource Planning
Enterprise Resource Planning (ERP) is an organizational and information systems approach that integrates planning, customer relationship management, decision making, master scheduling, material requirements planning, marketing, forecasting, sales, finance, electronic commerce, and human resources. The course will include lectures and extensive use of supporting ERP software. Note: Students who have previously completed IND 313 cannot receive credit for BUS/ BCS 313. Students completing this course cannot receive credit for BUS 317. Prerequisite(s): BUS 109 or BUS 300 or BCS 300
Course Offered: Fall, Spring
Credits:

BCS 318 Virtualization and Cloud Computing
This course explores installation, configuration, and management of VMware® vSphere™, which consists of VMware ESXi/ESX™ and VMware vCenter™Server. In addition, use of Virtualization Servers with Storage Area Networks and Network Attached Storage Technologies will be discussed. This advanced course prepares the student to understand OS virtualization, Storage Virtualization, and Cloud Computing. Prerequisite(s): BCS 215 and BCS 262 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

BCS 320 Scaling Networks
This course describes the architecture, components, and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Note: Students who have completed BCS 330 or BCS 335 may not receive credit for BCS 320. Prerequisite(s): BCS 209 with a C or higher.
Course Offered: Fall, Spring
Credits:

BCS 321 Connecting Networks
This course discusses the Wide Area Network (WAN) technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network. Note: Students who

have completed BCS 330 or BCS 335 may not receive credit for BCS 321. Prerequisite(s): BCS 209 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

BCS 332 Fundamentals of Assembly Language Programming
This course provides an introduction to assembly language programming. Concepts discussed include basic computer organization and architecture, instruction set design, the call stack, data representation, addressing, and I/O. A number of programming assignments give students the opportunity to practice assembly language on one or more architectures chosen by the instructor. Prerequisite(s): BCS 230
Credits:

BCS 340 Introduction to Algorithms
This course provides an introduction to efficient solutions for a variety of algorithmic problems commonly encountered in application programming. Problems are discussed and students are guided through the discovery of progressively more efficient solutions. Areas to be discussed may include trees, graphs, sorting, searching, and testing. Advanced techniques, including recursion, dynamic programming, greedy algorithms and parallel programming may be used to solve some of the problems. Small programming assignments will be required to illustrate an understanding of the details of the algorithms. Prerequisite(s): BCS 230 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

BCS 345 JAVA Programming
This course is designed for students with some experience with programming. The syntax of the Java programming language, object-oriented programming, creating graphical user interfaces (GUI), exceptions, file input/output (I/O), and how to create Java applications and applets will be covered. Prerequisite(s): BCS 230 with grade of a C or higher.
Course Offered: Fall, Spring, Summer
Credits:

BCS 350 Web Database Development
This advanced course prepares the student to use database management systems with web server software to develop and maintain the information content of a web site. Students in the course should have prior knowledge of programming and database management systems. Prerequisite(s): BCS 260 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

BCS 360 Programming in SQL
The second in a two course sequence applies the knowledge of BCS260 to administer and implement relational database systems. Topics covered may include: embedded SQL and other mixed language mechanisms; PL/SQL; advanced/optimized SQL queries; transaction management including concurrency and recovery; schema refinement; higher-level normal forms; integrity; security; and database administration. Prerequisite(s): BCS 230, BCS 260 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

BCS 370 Data Structures
This course will present sequential and linked representations of various built-in and abstract data structures including arrays, records, stacks, queues and trees. Algorithms will be developed relating to various sorting and searching techniques, merging and recursion. A high-level structured programming language, such as C, using both static and dynamic storage concepts, will be used in exploring and developing these algorithms. Prerequisite(s): BCS 230 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

BCS 372 Foundations of Theoretical Computer Science
Computer science theory has implications both for what problems programmers choose to solve and for how they solve them. This course introduces students who are familiar with the craft of programming to the underlying theory. Topics discussed include selections from automata theory, computability theory, and complexity theory. Prerequisite(s): BCS 230, MTH 130 and Junior or Senior Status
Credits:

BCS 375 Legal and Ethical Issues in Database and System Administration
In response to privacy concerns and the growth of big data, governments have instituted legal restrictions on access to and on storage of certain forms of data, for example health records. This course explores ethical and legal issues relating to computers, with a particular emphasis on the ethical and legal obligations of system administrators and others with extraordinary access to personal data stored on computers. Prerequisite(s): BCS 215, EGL 102 and Junior Status
Credits:

BCS 378 Information Security
This course introduces students to the principles and practices of computer and network security. Topics covered include fundamental concepts and principles of computer security, basic cryptography, public key infrastructure, authentication and access control, threats and vulnerabilities, intrusion detection/prevention systems and network security, operating system security, software and data security, web security, and managerial and ethical issues in computer security. Prerequisite(s): BCS 262 and BCS 230 all with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

BCS 380 Advanced Database Programming
This course will provide a detailed examination of a relational database management system and its procedural language such as Oracle and PL/SQL or SQL Server and T-SQL. General programming concepts such as conditional and iterative control, error handling and built-in exceptions will be discussed. Covered in more detail will be topics such as cursors, triggers, and the stored functions, procedures and packages. These topics will then be explored through laboratory assignments using a RDBMS such as Oracle or SQL server. Prerequisite(s): BCS 360 with a grade of C or higher
Credits:

BCS 390 Database Administration and Security
This course provides the knowledge necessary to handle database administration and database security. Topics studied may include installation and configuration of a database, managing and securing user resources and privileges, data integrity, networking, optimization, and backup and recovery. Hands-on activities with a major commercial DBMS will be assigned to complement the lectures and written work and to develop practical skills. Prerequisite(s): BCS 260 and BCS 215 with a grade of C or higher.
Course Offered: Spring
Credits:

BCS 405 IS Development Project Management
This course will cover Project Management tools and techniques for Systems Development projects. Students will learn Project Management, Scope Management, Time Management, Cost Management, Quality Management, Human Resource Management and Communications Management all in the context of running successful information systems development and implementation projects. MS project will be used as a tool to managing all of these areas. Prerequisite(s): BCS 300 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

BCS 410 Computer Architecture
Computer Architecture is the study of hardware and software components of business information systems. Thorough understanding of the workings of the digital computer system is expected. Topics include: hardware components, the machine cycle, binary arithmetic, systems software, and assembly language. These topics are evaluated with respect to their impact on the development of business information systems. Two semesters of a programming language required. Prerequisite(s): Two semesters of a programming language required with a grade of C or higher and BCS 262 with a grade of C or higher.
Credits:

BCS 413 Advanced Enterprise Resource Planning
This advanced-level Enterprise Resource Planning (ERP) course includes high-level information technology coverage of Scheduling, Planning, MRP, Logistics, Warehousing, Procurement, Quality, Vendor Management, Cost Accounting, Forecasting, KPI, Supply Chain, and Customer Resource Management. Also covered are concepts and software applications pertaining to product design, development, manufacturing (production),

marketing, sales, and field service. This course emphasizes proficiency in the skill sets typically required within industry practices. Prerequisite(s): BUS 300 or BCS 300 and (BUS 317 or BCS 317)
Course Offered: Fall, Spring
Credits:

BCS 415 Operating System Internals and Design
This course will involve the study of the fundamentals of operating systems design and implementation. The concepts covered include process management, memory management, file systems, I/O system management, distributed systems, and security. Students will examine how these concepts are found in several current open-source operating systems, including Vista, UNIX and/or Linux. Prerequisite(s): BCS 215 and BCS 230 all with a grade of C or higher
Credits:

BCS 421 Android Mobile Application Development
This course provides an introduction to Android mobile application development. Techniques for designing the user interface will be discussed. The Android application lifecycle and issues related to battery life will be covered. Storing application data using a database will be explored. Students will receive hands-on experience using the Android mobile application development platform. Prerequisite(s): BCS 230 and BCS 345 with a C or higher.
Course Offered: Fall
Credits:

BCS 422 iOS Mobile Application Development
This course provides an introduction to iOS mobile application development for Apple devices. Students will be introduced to the Swift programming language. Emphasis will be placed on good programming practices, on object oriented techniques, and on using established design patterns for mobile applications. Students will receive hands-on experience using the Xcode development environment to build example apps. Basic instruction in Objective-C will provide students with the ability to read and reuse legacy iOS code. Prerequisite(s): BCS 345 or BCS 370 with a grade of C or higher.
Course Offered: Spring
Credits:

BCS 425 Business Intelligence and Data Warehousing
Business Intelligence is the transformation of data into actionable information. This information is used by businesses to drive high-level decision making. This course is concerned with extracting data from the information systems that deal with the day-to-day operations and transforming it into data that can be used for decision making. Students will learn how to design and create a data warehouse, and how to utilize the process of extracting, transforming, and loading (ETL) data into data warehouses. Students will design and construct dynamic reports using the data warehouse and multi-dimensional online analytical processing (OLAP) cubes as the data source. Prerequisite(s): BCS 260 with a grade of C or higher.
Course Offered: Spring
Credits:

BCS 426 C# Programming
This course is an introduction to the C# ("C-Sharp") programming language for students with existing programming experience. The course covers the syntax of the C# programming language, .NET ("dot net") infrastructure, creating graphical user interfaces, using databases, using web services, and multithreading. Students will be required to complete a number of practical programming assignments to solidify their knowledge of the language and its application. Prerequisite(s): BCS 345 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

BCS 427 Game Programming
This course provides an introduction to two-dimensional game programming. Students will learn how to draw and manage game objects. Techniques for adding sound to a game will be discussed. Creation of computer controlled game objects will also be covered. Students will receive hands-on experience with a current game development platform. Students will be expected to create their own two-dimensional game by the end of the course. Prerequisite(s): BCS 345 with a grade of C or higher.
Course Offered: Spring
Credits:

BCS 428 Large Software System Development
This course introduces students to the tools and processes used in software development for large systems. Through the use of open source projects, the students will explore the build environment, version control, and the testing tools used to produce code involving large numbers of programmers and product managers. Programming project management techniques, such as Agile, and best practices for programming will also be introduced and discussed. Prerequisite(s): BCS 345 and BCS 370
Credits:

BCS 430W Senior Project (Writing Intensive)
The primary objective of this course is to give Computer Programming and Information Systems students an opportunity to integrate techniques and concepts acquired in their other courses. Elements will be drawn primarily from BCS301 (Systems Analysis and Design) and BCS260 (Database), in addition to other courses in the student's selected track of study. The course is experiential in nature i.e. the student will be required to produce results for use by real individuals and will be evaluated both on process and product. In addition to prerequisites, a second level programming course with a grade of C or better, and Senior level status is required. This is a writing-intensive course. Note: Students cannot get credit for BSC 430 and 430W; BCS 430W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Computer Programming and Info Systems Department. Prerequisite(s): EGL 101, BCS 260, BCS 230 and BCS 301 all with a grade of C or higher
Course Offered: Fall, Spring
Credits:

BCS 440 CPIS Internship
In this course, the student works under the tutelage of a professional who serves as site supervisor in an organization that provides information services. The work done by the student is guided by learning objectives agreed to by the site supervisor, the faculty member and the student. Students are required to submit a written proposal, progress reports, and a final report on their experience to the client and to the department. The course offers an ideal opportunity to test theory in practice and to gain experience in a realistic information provision situation. The experience is expected to be mutually beneficial for the organization and student. Prerequisite(s): Junior Status and GPA >=3.0.
Course Offered: Fall, Spring, Summer
Credits:

BCS 450 Special Topics in Computer Programming and Information Systems
Courses that range from 450-451 will cover topics not covered in the regular curriculum. Topics may vary from term to term and reflect the interests of students, faculty and industry. Topics may include wireless communications, rapid application development and other emerging technologies. Prerequisite(s): Permission of Department Chair
Course Offered: Fall, Spring
Credits:

BCS 451 Special Topics
Courses that range from 450-451 will cover topics not covered in the regular curriculum. Topics may vary from term to term and reflect the interests of students, faculty and industry. Topics may include wireless communications, rapid application development and other emerging technologies. Prerequisite(s): Permission of Department Chair
Course Offered: Fall, Spring
Credits:

BCS 460 Independent Study
This is an independent study course designed to offer the student experience in research of a specialized area of interest. The student will have an opportunity to work individually or with a group in designing, developing and presenting a research project. The topic must be approved by a faculty member. Students will be required to submit full documentation and present their final results. Prerequisite(s): Permission of Department Chair
Course Offered: Fall
Credits:

BCS ADD Introduction to Programming
No Description Found
Credits:

BIOLOGY (BIO)

BIO 120 General Biology
With a focus on building bridges between students' lives and foundational topics in the field, General Biology is an introductory survey course of cellular and evolutionary biology. Students learn the biological underpinnings of topics like diets, cloning, stem cell research, genetic engineering, extinction, and climate change. Biodiversity is also emphasized through the study of evolution and the impacts our species has had on the world. Laboratory exercises provide hands-on examination of lecture topics, while emphasizing common research techniques. Note: BIO 120 is approved in the Natural Sciences General Education Competency Area and can serve as a lower-level laboratory science elective within the Liberal Arts. However it does not satisfy Bioscience Core requirements and cannot be used as a substitute for either BIO 130 or BIO 131. Note: The laboratory course, BIO 120L is a part of your grade for this course. Corequisite(s): BIO 120L
Course Offered: Fall, Spring, Summer
Credits:

BIO 121 Health, Heredity, and Behavior
Health, Heredity, and Behavior is a 3 credit, non-lab course. It focuses on the most common and clinically significant diseases and conditions that afflict modern developed societies, first building a foundation of the basic anatomy and physiology necessary to understand the disorder, then exploring the experiences of the people afflicted. The inherited and lifestyle risks associated with disorder are discussed and strategies to reduce those risks are investigated. This course is appropriate for non-science majors.
Course Offered: Fall, Spring, Summer
Credits:

BIO 123 Human Body in Health and Disease
This course is an inquiry into the mechanism of diseases that plague human beings. A systemic approach is taken in which all the major systems of the human body and the significant diseases that affect those systems are studied. Emphasis is on failures of homeostasis as the basic mechanisms of disease. Included are discussions on available treatments and therapies, the impact of new technological developments, and maintaining health and avoiding disease. The laboratory component contains both traditional and computer-generated exercises, which illustrate the onset and development of a variety of diseases and pathological states. Note: BIO 123 is approved in the Natural Sciences General Education Competency Area and can serve as a lower-level laboratory science elective within the Liberal Arts. However it does not satisfy Bioscience Core requirements and cannot be used as a substitute for either BIO 130 or BIO 131. Note: The laboratory course, BIO 123L is a part of your grade for this course. Corequisite(s): BIO 123L
Course Offered: Fall, Spring
Credits:

BIO 125 Principles of Nutrition
This course provides a basic background in the nature and biochemical function of essential and non-essential nutrients, the molecular basis of metabolism and nutrient requirements of living cells and organisms. The role of nutrients in gene expression, genetically modified foods and the role of diet in the treatment of diseases.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BIO 130 Biological Principles I
This course deals with biological processes primarily at the molecular and cellular level, and develops the foundations of evolutionary and ecological concepts. There is a study of cell structure, and an examination of cellular composition and metabolic processes including enzyme activity, respiration, and photosynthesis. Principles of genetics are studied at the cellular and molecular level, with reference to current techniques in molecular biology. Evolutionary mechanisms are introduced and ecological concepts are presented as a unifying theme. Note: BIO 130 is the first course in the required two-semester introductory sequence in the Bioscience Curriculum Core. It is also approved in the Natural Sciences General Education Competency Area and can serve as a lower-level laboratory science elective within the Liberal Arts. Note: the laboratory course, BIO 130L is a part of your grade for this course. Corequisite(s): BIO 130L
Course Offered: Fall, Spring, Summer
Credits:

BIO 131 Biological Principles II
This course deals with biological processes primarily at the organismal level, and examines the diversity of living things. The origins and adaptations of the Prokaryota, Protista, and Fungi are explored, with emphasis on their ecological roles, economic value, and medical significance. Plant life cycles are introduced, and plant structure, physiology, and utilization are studied. The evolution and adaptations of various animal phyla are presented, with a consideration of structure and function in each; organ systems are studied with emphasis on humans as representative vertebrates. Note: BIO 131 is the second course in the required two-semester introductory in the Bioscience Curriculum Core. It is also approved in the Natural Sciences General Education Competency Area and can serve as a lower-level laboratory science elective within the Liberal Arts. Note: the laboratory course, BIO 131L is a part of your grade for this course. Prerequisite(s): BIO 130 Corequisite(s): BIO 131L
Course Offered: Fall, Spring, Summer
Credits:

BIO 135 Marine Science
Marine Science is designed to give the student an appreciation and understanding of the dynamics and interactions of the various components (biological, chemical, physical, geological) of the world's oceans. Habitats studied will range from near shore estuarine systems to deep ocean systems. Special consideration will be given to the human use and manipulation of the Long Island coastal zone. Laboratory sessions will include methodologies used in oceanographic sampling and analysis as well as exercises reinforcing lecture material. Field trips will also play an important part of the course work supporting lecture topics. Note: The laboratory course, BIO 135L is a part of your grade for this course. Corequisite(s): BIO 135L
Credits:

BIO 166 Principles of Human Anatomy and Physiology
This is a one semester integrated survey of human anatomy and physiology, covering the major physiological and morphological relationships of the human organ systems. The design of this course is appropriate preparation for Dental Hygiene, Medical Laboratory Technology, and certain other allied health professions, but it does not satisfy the requirements of the Nursing Curriculum. The major theme of the course is the integrative pathways and regulatory processes that maintain the homeostasis of the body. Note: BIO 166 does not satisfy the requirements of the Nursing Curriculum and cannot be used as a substitute for either BIO 170 or BIO 171. It is approved in the Natural Sciences General Education Competency Area and can serve as lower-level laboratory science elective within Liberal Arts. Note: the laboratory course, BIO 166L is a part of your grade for this course. Prerequisite(s): High School biology with a lab or BIO 120 or 123 or 130; High School or College chemistry recommended. Corequisite(s): BIO 166L
Course Offered: Fall, Spring
Credits:

BIO 170 Human Anatomy and Physiology I
This is the first semester of a two-semester sequence in which human anatomy and physiology are studied using a body systems approach, with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. This sequence is appropriate preparation for nursing and other allied health professions. Topics included in Anatomy and Physiology I are: basic anatomical and directional terminology, fundamental concepts and principles of cell biology, histology, and the integumentary, skeletal, muscular, and nervous systems. Students may not receive credit for both BIO 170 and BIO 270. Note: the laboratory course, BIO 170L is a part of your grade for this course. Prerequisite(s): High School biology with a lab or BIO 120 or 123 or 130; High School or College chemistry recommended Corequisite(s): BIO 170L
Course Offered: Fall, Spring, Summer
Credits:

BIO 171 Human Anatomy and Physiology II
This is the second semester of a two-semester sequence in which human anatomy and physiology are studied using a body systems approach, with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. This sequence is appropriate preparation for nursing and other allied health professions. Topics include Anatomy and Physiology II are: the endocrine system, the cardiovascular system, the lymphatic system and immunity, the respiratory system, the digestive system, metabolism, the urinary system, fluid/electrolyte and acid/base balance; and the reproductive systems. Note: students may not receive credit for both BIO 171 and BIO 271. Note: the laboratory course, BIO 171L is a part of your grade for this course. Prerequisite(s): BIO 170 Corequisite(s): BIO 171L
Course Offered: Fall, Spring, Summer
Credits:

BIO 192 Botany
An introduction to the biology of plants and their ancestors. Topics include cell structure and function, cell chemistry, photosynthesis and cellular respiration. The tissues, roots, stems and leaves are studied covering such topics as conduction, absorption, translocation and reproduction. A phylogenetic comparison among plant groups and their ancestors is the underlying theme. Note: the laboratory course, BIO 192L is a part of your grade for this course. Attendance in the laboratory course is required.
Corequisite(s): BIO 192L
Course Offered: Summer
Credits:

BIO 193 Zoology
An introduction to the biology of animals and their ancestors. Topics include structure and function of cells, tissues, organs and organ systems in animals. Genetics, development, behavior, ecology, and the evolution of major phyla are covered. A comparative approach is taken in studying the invertebrates and vertebrates including man. Note: the laboratory course, BIO 193L is a part of your grade for this course. Attendance in the laboratory course is required. Corequisite(s): BIO 193L
Credits:

BIO 197 Human Biology
An introductory course that teaches biological principles by emphasizing the structural and functional aspects of the human body, especially as they relate to everyday existence. Includes discussion of important collateral issues such as the nature and course of disease, smoking and health, drug abuse, immunity and allergy, human genetics, birth-control, over-population, and sexually transmitted disease.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BIO 198 Entomology
The nature, structure, growth, and habits of insects and related forms are discussed. The beneficial and injurious effects of insects are covered. Recent breakthroughs and developments in the field of entomology are discussed. Skills are developed which enable the student to identify insect plant pests, diseases and injuries. Control measures and application equipment are discussed. Emphasis is placed on the various pest management options available to the homeowner and professionals in the field. IPM (integrated pest management) involves an understanding of pesticides, physical and mechanical controls, biological controls, cultural controls, and legal controls. Laws regulating the activities of pest control operators and the application of hazardous pesticides are discussed. A collection of insects and related forms is required. Note: the laboratory course, BIO 198L is a part of your grade for this course. Corequisite(s): BIO 198L
Course Offered: Fall
Credits:

BIO 210 Introduction to Bioscience
Moving beyond the basic concepts of general biology, this class explores how biology is used in both academic and commercial settings within the fields of biotechnology, pharmaceutical and clinical sciences. Topics will include: applications of biotechnology in microbes, plants, and animals, the human genome project and its relation to medical biotechnology, DNA forensics, and pharmaceutical drug discovery, delivery, and FDA approval. The debate surrounding subjects such as cloning, stem cells, and genetically modified foods will also be discussed. Prerequisite(s): BIO 130 with a grade of C- or higher.
Course Offered: Fall, Spring
Credits:

BIO 212 Bioscience Laboratory Practices
This course is designed to enable students to develop understanding of and proficient technical ability in basic bioscience laboratory practices. There is an in-depth presentation of laboratory safety standards, utilization of material safety data sheets, and the theoretical basis for a full range of preparatory and analytical methods and the opportunity to develop expertise in these methods with a variety of laboratory equipment. Students are required to maintain a laboratory notebook, analyze and display data in graphic form, and report results in a standard format. Prerequisite(s): BIO 130 with a grade of C- or higher. Corequisite(s): BIO 212L
Course Offered: Fall, Spring
Credits:

BIO 221 Oral Microbiology
BIO 166 or BIO 170/171This course will focus on the role of microbes as causative agents of disease in human hosts, with a specific focus on the microbiome of the mouth. Topics will include the morphological characterization of pathogenic species, classification of communicable diseases and epidemiology aspects, host-parasite relationship, host-resistance mechanisms, and diagnostic methods in medical practice. The course covers the normal oral flora as well as the bacteria that initiate caries, periodontal, and oral abscesses. The course will discuss antiviral agents as well as antibiotics that treat fungal and bacterial infections. The major bacterial, prion, viral, fungal, and parasitic diseases are covered. Additional topics include sterilization, disinfection methods and contamination control. Note: The laboratory course, BIO 221L is a part of your grade for this course. Prerequisite(s): BIO 166 or BIO 170/171 with a grade of C or higher. Corequisite(s): BIO 221L
Credits:

BIO 235 Marine Biology
The ecological principles of the marine environment will be examined. There will be an emphasis on the classification, identification and economic importance of both the animals (Protozoa-Chordata) and the algae (microscopic and macroscopic). The flora and fauna of the Long Island region will be stressed with field trips and collections being an integral part of the course. Note: the laboratory course, BIO 235L is a part of your grade for this course. Prerequisite(s): BIO 130 or 131 or 192. Corequisite(s): BIO 235L
Credits:

BIO 240 Bioethics
This course will cover ethical issues raised as a result of modern advances in biotechnology which directly affect the quality of human life. Bioethics comprises every possible aspect of health care: medical, moral, political, religious, legal and financial. It scrutinizes outmoded laws and deals with the enormous growth in available medical services. It takes into account our views of ourselves as members of a humane society. Note: This course is also offered as a writing intensive course at the discretion of the department. Students cannot get credit for BIO 240 and BIO 240W. Prerequisite(s): One course of college biology with a C- or higher; for the writing intensive version, EGL 101 with a grade of C or higher is also required.
Course Offered: Fall, Spring, Summer
Credits:

BIO 256 Environmental Sampling & Analysis
Proper field techniques for sampling the water, land, and air environments will be emphasized. Laboratory procedures will involve the analysis of both chemical and biological parameters, including wastewater analysis, using New York State approved methodology. Vegetative transecting and beach contouring will also be included. Data presentation and report writing will be emphasized. Field trips and study will be an integral and required part of this course. Discussion of environmental laws and impact statements will be included. Note: The laboratory course, BIO 256L is a part of your grade for this course. Prerequisite(s): One course of college biology with a laboratory and one semester of college chemistry with a laboratory. Corequisite(s): BIO 256L
Credits:

BIO 270 Anatomy and Physiology I
BIO 270 is a course in which human anatomy and physiology are studied using a body systems approach, with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. This sequence is appropriate for students with a strong foundation in basic biological principles. Anatomy and Physiology I includes: anatomical and directional terminology, histology, and the integumentary, skeletal, muscular, nervous, and endocrine systems. Note: The required course sequence for nursing students is BIO 170 and 171. Students may not receive credit for both BIO 170 and BIO 270. Note: the laboratory course, BIO 270L is a part of your grade for this course. Prerequisite(s): BIO 130 or equivalent with a C- or higher. Corequisite(s): BIO 270L
Course Offered: Fall
Credits:

BIO 271 Anatomy and Physiology II
BIO 271 is a course in which human anatomy and physiology are studied using a body systems approach, with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. This sequence is appropriate for students with a strong foundation in basic biological principles. Anatomy & Physiology II includes:

the cardiovascular, respiratory, digestive, urinary, reproductive, and immune systems, metabolism, and acid-base balance. Note: The required course sequence for nursing students is BIO 170 and 171. Students may not receive credit for both BIO 171 and BIO 271. Note: the laboratory course, BIO 271L is a part of your grade for this course. Prerequisite(s): BIO 130 or equivalent with a C- or higher. Corequisite(s): BIO 271L
Course Offered: Spring
Credits:

BIO 290 Entomology II
Methods of greenhouse pest and disease control, including identification of major families of pests, diagnosis of diseases, principles of cultural and chemical control, and a survey of pests and diseases associated with economically important greenhouse crops. Note: The laboratory course, BIO 290L is a part of your grade for this course. Prerequisite(s): BIO 198 or 192. Corequisite(s): BIO 290L
Course Offered: Summer
Credits:

BIO 294 Vertebrate Physiology
This course investigates the principles of physiology in vertebrates with emphasis on mechanism of integration and homeostasis at the cellular, organ and system level. It explores the comparative, experimental and evolutionary aspects of all vertebrate classes and surveys the impact of recent advances in cellular and molecular biology on this branch of the biological sciences. Corequisite(s): BIO 295L
Credits:

BIO 295L Vertebrate Physiology (Lab)
This laboratory course is an inquiry into the experimental methods and models for understanding vertebrate physiology. It will explore the comparative, experimental and evolutionary aspects of the mechanisms of integration and homeostasis among select vertebrate classes. Laboratory exercises incorporate computer software-based exercises with classic physiology experiments designed to illustrate both the basic concepts of physiology as well as the comparative nature of these events in a number of vertebrate species. Corequisite(s): BIO 294
Credit:

BIO 316 General Microbiology
Based on contemporary applications of microbiology, this course is designed to present both fundamental concepts of microbial physiology and growth, as well as microbial control measures ranging from aseptic procedures to chemical antibiosis. The role of microorganisms in natural ecosystems, research, and human infection will be explored, with emphasis on prokaryotic genetics and metabolism. Mechanisms of evolution will be discussed within the context of emerging pathogens and novel bioengineered organisms. The dynamics between the human microbiome and resistance to infection will be presented along with basic epidemiological models. Note: the laboratory course, BIO 316L is a part of your grade for this course. Prerequisite(s): BIO 210 and BIO 12 with a grade of C- or higher Corequisite(s): BIO 316L
Credits:

BIO 318 Medical Microbiology
This course focuses on the role of microbes as causative agents of disease in human hosts, including the morphological characteristics of pathogenic species, classification of communicable diseases, and epidemiological aspects. The course will emphasize common bacterial, viral, and fungal infections. Both the laboratory and lecture will contain sections on the mode of action of antibiotics, sterilization, disinfection methods and contamination control. The course will elaborate on infectious agents (viral, prions, bacteria, fungi, and parasites) that cause disease. Note: the laboratory course, BIO 318, is part of your grade for this course. Prerequisite(s): (BIO 130 and 131) or BIO 171 or BIO 270 or BIO 271 all with a grade of C- or higher Corequisite(s): BIO 318L
Credits:

BIO 325 Evolution
This is a lecture-based course designed to introduce the study of evolutionary biology and its many components. Topics will range from molecular evolution and phylogenetics to the micro and macro evolutionary trends that have led to the world's biodiversity. The course includes extensive primary literature use, focusing on both recent literature and classic papers within the field. Prerequisite(s): BIO 131 with a grade of C- or higher.
Course Offered: Spring
Credits:

BIO 330 Principles of Ecology
The course introduces the student to the nature of ecosystems, community organization and dynamics, and population growth and regulation through the understanding and use of modern ecological techniques. The laboratory will be primarily focused on the analysis of field data collected by students. Note: the laboratory course, BIO 330L is a part of your grade for this course. Prerequisite(s): MTH 110, BIO 131 with a C- or higher and Junior Status. Corequisite: BIO 330L
Course Offered: Spring
Credits:

BIO 335 Plant Systematics
An introduction to systematics using vascular plants as the model organisms. Lecture material for this course will cover all aspects of systematics from basic nomenclature, taxonomy and systematic methods through modern molecular systematics and cladistics. Lab material will cover plant morphology and the identification of characteristics across plant lineages and their relationship to systematics. Note: The laboratory course, BIO 335L is a part of your grade for this course. Prerequisite(s) BIO 131 or BIO 192 or BIO 198 with a C- or higher and Junior Status. Corequisite(s): BIO 335L
Course Offered: Fall
Credits:

BIO 340 Biopharmaceutical Regulation
This course introduces the student to Current Good Laboratory Practice (cGCP), Current Good Clinical Practice (cGCP) and Current Good Manufacturing Practice (cGMP) as defined in the Code of federal Regulations Title 21. These regulations apply to all aspects of testing, clinical trials and manufacturing of Biopharmaceutical products under the authority of the Food and Drug Administration. The course will examine the application of these regulations to the bioprocessing, pharmaceutical, nutraceutical, cosmeceutical and allied industries. Prerequisite(s): BIO 210 with grade of a C- or higher.
Course Offered: Fall, Spring, Summer
Credits:

BIO 343 Principles of Genetics
Students will understand and be able to apply basic principles of genetic analysis. These principles include the Mendelian laws of inheritance, factors that contribute to modification of Mendelian patterns, chromosome organization, genetic variation, the structure of selected eukaryotic and prokaryotic genomes and the analysis of the genetic makeup of populations. Note: Bioscience and/or MLS students taking BIO 343 must also take BIO 344L either during the same semester or after completion of BIO 343L. Prerequisite(s): (BIO 130, 131, 210, 212, and MTH 110) or (BIO 130, MLS 227 and MTH 110) all with a grade of C- or higher.
Course Offered: Fall, Spring, Summer
Credits:

BIO 344L Principles of Genetics Lab
Laboratory exercises include both computer simulations and the use of living organisms to illustrate genetic principles and techniques. Students will collect data utilizing standard genetics investigational techniques. Note: BIO 343 is a prerequisite OR a corequisite for this course. BIO 343 must be taken either prior to or during the same semester as BIO 344L. Prerequisite(s): (BIO 130, 131, 210, 212, and MTH 110) or (BIO 130, MLS 227 and MTH 110) all with a grade of C- or higher. Corequisite(s): BIO 343
Course Offered: Fall, Spring, Summer
Credit:

BIO 345 Introduction to Bioinformatics
This course is intended to teach the basic tools used in bioinformatics in order to investigate biological questions. Students will conduct independent projects utilizing existing computer programs and databases for gene searches, sequence comparisons, and phylogenetic analysis. Prerequisite(s): BIO 343, BIO 344L, BCS 101 or BCS 102 all with a grade of C- or higher.
Course Offered: Fall, Spring, Summer
Credits:

BIO 348 Cell Biology
This course investigates how cells develop, work, communicate, and control their activities. Topics include basic biochemistry and metabolism, DNA structure and function, membrane/organelle function and transport, cell communication, the cytoskeleton, and cell division. At the completion of

this course the student should be able to engage in the broad themes of cell and molecular biology, and to relate these concepts to other studies in biology and other disciplines. Note: Bioscience and/or MLS students taking BIO 348 must also take BIO 349L either during the same semester or after completion of BIO 348. Prerequisite(s): (BIO 130, 131, 210 and 212) or (BIO 130 and MLS 227) all with a grade of C- or higher.
Course Offered: Fall, Spring
Credits:

BIO 349L Cell Biology (Lab)
This course introduces students to the theory and methodology of protocols routinely used in research laboratories investigating cell structure and function. Students have the opportunity to use both common and high tech instruments to perform weekly laboratory exercises. Experimental design, controls and data presentation and analysis are emphasized. Note: BIO 348 is a prerequisite OR a co-requisite for this course. BIO 348 must be taken either prior to or during the same semester as BIO 349L. Prerequisite(s): (BIO 130, 131, 210 and 212) or (BIO 130 and MLS 227) all with a grade of C- or higher. Corequisite(s): BIO 348
Course Offered: Fall, Spring
Credit:

BIO 353 Essentials of Plant Pathology
The study of the development of plant diseases caused by Plants, Animals, Fungi, Protists, Bacteria, Viruses and Virolds. Major diseases of economically important plants are emphasized. The disease process and disease cycles for representative pathogens are covered in relation to plant disease control methods. Prerequisite(s): BIO 192 with a grade of C- or higher and Junior Status. Corequisite(s): BIO 354L
Credits:

BIO 354L Essentials of Plant Pathology (Lab)
The laboratory is designed to enable the student to acquire skills in collection and examination methods used for the diagnosis of plant diseases produced by biotic and abiotic agents, using microbial isolation and culturing techniques where applicable. The student will learn to recognize and identify (directly or indirectly) biotic plant pathogens among the Plants, Animals, Fungi, Protists, Bacteria, Viruses and Viroids. Prerequisite(s): BIO 192 with a grade of C- or higher and Junior Status. Corequisite(s): BIO 353
Credit:

BIO 355 Ecological Topics: The Structure and Function of Nature
This course introduces students to basic ecological concepts as they relate to the biotic and abiotic environment. It stresses the diversity of life and the impact that man, other organisms and environment have on each other. Laboratory exercises and field work will investigate the effects organisms have on each other as well as the effects of environmental conditions on growth and development. Students will also characterize the nature of selected site(s) in terms of species diversity using plot sampling techniques. Seminar type discussions require individuals or small groups to explore environmental issues. Topics for these discussions will be submitted to the instructor for appropriateness and approval. Students will be required to research and prepare a paper as well as make a presentation to the class. The class will be given the opportunity to question each speaker following that individual's presentation. Note: the laboratory course, BIO 355L is a part of your grade for this course. Prerequisite(s): BIO 131 or BIO 192 or BIO 198 with a grade of C- or higher and Junior Status. Corequisite(s): BIO 355L
Course Offered: Fall
Credits:

BIO 365 Neurology of Pain
BIO 365 is a comprehensive study of the various neurogenic mechanisms central to the study and understanding of pain is the focus of this lecture-based course. In addition, Clinical neuroanatomy and physiology will be reviewed. Emphasis will be placed on organic/root causes of pain pertaining to symptom specific generators. Also, a broad base review will be aimed at exploring the psychodynamic components of pain. This includes, but is not limited to topics in addiction, brain reward cascades, and arousal mechanisms. The final portion of this course includes discussion of the various methods of pain mitigation and measurement. Strong clinical applications will be emphasized throughout the course. Prerequisite(s): (BIO 130 or BIO 170 with a grade of C- or higher) and (Junior Status or BIO 220 with a grade of C- or higher).
Course Offered: Fall, Spring, Summer
Credits:

BIO 375 Invertebrate Zoology
This course is a survey of the major invertebrate groups, starting with sponges and ending with the closest relatives to vertebrates. Invertebrates represent 95% of all animal life, and a thorough understanding of their anatomy, physiology, and evolutionary history has many connections to the study of ecology, systematics, parasitology, and medicine. Lectures will focus on the evolutionary history, physiology, ecology, and human-health impacts these organisms have, while the dissection-based lab will present a comparative anatomical approach of physical structures. Note: The laboratory course, 375L, is part of your grade and a required co-requisite. Prerequisite(s): BIO 131, BIO 210, and BIO 212 with a grade of C- or higher. Corequisite(s): BIO 375L
Course Offered: Spring
Credits:

BIO 380 Pre-Professional Experience I*AL(ACIN)
Recommended students will engage in one of the following for at least 135 hours: 1) health care volunteer work that involves patient assistance in the health care environment; 2) shadowing of a health care professional (physician, physician assistant, physical therapist, occupational therapist, dentist, veterinarian etc...). The final grade is assigned by the Internship Coordinator based on consultation with the supervisor/health professional and evaluation of reports, logs and a final report prepared by the student. Students must submit a resume to the internship coordinator at least 3 months before registering for the course. Prerequisite(s): Junior Status in Bioscience and (BIO 130 and 131) or BIO 166 or (BIO 170 and BIO 171) or BIO 220 or BIO 414 with a grade of C- or higher, recommendation by two Biology faculty members, submission of a resume to the Internship Coordinator at least 3 months prior to registering for the course, approval of the Internship Coordinator; additional courses in Human Anatomy and Physiology and/or Medical Microbiology recommended for some sites.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BIO 381 Pre-Professional Experience II
Recommended for students engaged in one of the following for at least 135 hours: 1) health care volunteer work that involves patient assistance in the health care environment; 2) shadowing of a health care professional (physician, physician assistant, physical therapist, occupational therapist, dentist, veterinarian, etc.) The final grade is assigned by the Internship Coordinator based on consultation with the supervisor/health professional and evaluation of reports, logs, and a final report prepared by the student. Prerequisite(s): BIO 380 with a grade of B or higher.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BIO 410 Developmental Biology
Developmental Biology will focus on the molecular and cellular mechanisms that underlie the growth and development of complex multicellular organisms. This course aims to provide an overview of animal embryonic development with attention given to the genes and proteins involved in controlling the behavior of cells in the processes of differentiation, morphogenesis, and growth. Developmental mechanisms discussed will emphasize genetic and experimental techniques used to understand embryonic growth and differentiation. Prerequisite(s): BIO 348 and BIO 349L with a grade of C- or higher.
Course Offered: Fall
Credits:

BIO 414 Microbiology
Based on contemporary applications of microbiology, this course is designed to present both fundamental concepts of microbial physiology and growth as well as microbial control measures ranging from asepsis to antibiosis. The role of microorganisms in natural ecosystems, research, manufacturing and human infection will be explored, with emphasis on prokaryotic genetics and metabolism. Mechanisms of evolution will be discussed within the context of emerging pathogens and novel bioengineered organisms. The dynamics between the human microbiome and resistance to infection will be presented along with basic epidemiological models. Note: the laboratory course, BIO 414L is a part of your grade for this course. Prerequisite(s): BIO 210, 212 and (343 and 344L) with a grade of C- or higher. Corequisite(s): BIO 414L
Course Offered: Fall, Summer
Credits:

BIO 415 Human Virology
This course will focus on specific human viruses, including papilloma, herpes, smallpox, polio, measles, HIV, influenza, SARS, and hepatitis viruses.

Lecture will cover viral strategies of invasion, viral lifecycles, viral offense and host defense, prevention and control of viral diseases, approaches for studying viruses and public health. Prerequisite(s): BIO 348 and 349L with a grade of C- or higher.
Course Offered: Summer
Credits:

BIO 420 Principles of Immunobiology
Immunobiology is a course in human immunology covering the concepts of innate and adaptive immunity and descriptions and functions of cellular and soluble factors involved in the immune response to eliminate infectious organisms. Concepts include mechanism for regulation of the immune response, how the immune system learns to discriminate between self and non-self, induction and maintenance of immunological tolerance and the development of immunological memory. Prerequisite(s): BIO 348 and BIO 349L with a grade of C- or higher.
Course Offered: Fall
Credits:

BIO 435 Cancer Biology
This course is designed to develop an understanding of the biology of cancer with an emphasis on molecular and cellular events that promote the transformation of normal cells into malignant cancer cells. There will be a general introduction of cancer from a historical perspective that will include the underlying causes of cancer. Students will emerge from this course with a firm understanding of how the disruption of molecular pathways may result in altered cellular signaling and the promotion of tumorigenesis, angiogenesis and metastasis. Current approaches to cancer treatment and recent advances in therapies that exploit these mechanisms will also be discussed. This course will involve the understanding and evaluation of primary literature so that students may formulate scientific questions and critically evaluate information relevant to cancer biology. Prerequisite(s): BIO 348 with a grade of C- or higher.
Course Offered: Spring
Credits:

BIO 441 Introduction to Molecular Biology
This course provides a detailed explanation of topics in molecular biology including DNA replication, DNA repair and recombination, transcriptional regulation and RNA processing. The course also covers techniques common in molecular biology laboratories, such as PCR, cloning, sequencing, nucleic acid separation and visualization. In addition, the course will discuss model organisms and approaches to study gene function, such as CRISPR/Cas and RNAi. Topics will be presented from both the view of prokaryotes as well as eukaryotes. The lab component of the class will teach molecular biology techniques that will enable students to use RNAi to knock-down gene expression in C. elegans. Scientific journal articles highlighting class topics will be used to supplement class lectures. Note: the laboratory course, BIO 441L is a part of your grade for this course. Prerequisite(s): BIO 348 and BIO 349L with a grade of C- or higher. Corequisite(s): BIO 441L
Course Offered: Fall, Spring
Credits:

BIO 444 Forensic Molecular Biology
This course explores advanced molecular biological techniques and concepts as they apply to the study of forensic investigation. The course will cover background information on body fluid identification, DNA structure and function, analytical DNA techniques, and review advancements in the field of DNA typing. The primary focus will be the molecular biological technique known as short tandem repeats (STR) testing. Other topics covered include case studies, sample handling, DNA databanking (CODIS), mass disaster identification, Y chromosomal analysis, paternity testing, and validation procedures. The laboratory component of this course will give the students hands-on experience in techniques and experiments that are currently being employed by forensic biology laboratories across the country. Note: Students who have completed BIO 430 or CRJ 430 may not receive credit for this course. Note: the laboratory course, BIO 444L is a part of your grade for this course. Prerequisite(s): BIO 348, 349L and CRJ 201 all with a grade of C- or higher. Corequisite(s): BIO 444L
Credits:

BIO 451 Human Evolutionary Anatomy
This course will serve as an advanced elective for students looking to delve deeper into the skeletal anatomy of the human body and why it looks the way it does today. An evolutionary approach will be taken to studying aspects of human anatomy that are generally considered unique amongst primates, such as an enlarged brain, a reduced masticatory apparatus, and upright bipedal posture. These traits will be put into context with comparisons to the great apes and representatives from the human fossil record. Biomechanical and developmental aspects of skeletal anatomy will also be explored. Students are expected to enter this class with a working knowledge of the bones of the human body and the general terminology used to describe them. They will also be expected to read and discuss the scientific literature surrounding debates in human evolution that will be covered in lecture. Note: There is not a separate lab component of this course but students will get hands-on experience with models of the bones and casts of fossil specimens. Prerequisite(s): BIO 170 or BIO 270 or ANT 330 all with a grade of C- or higher
Course Offered: Spring
Credits:

BIO 455 Validation and Regulatory Affairs
An introduction is provided to governmental oversight of drugs, devices and biotherapeutics, and the laws and regulations that apply to development, testing and validation of methods and equipment. There is a survey of the history of US food and drug law, the creation of the FDA, and the current organization and responsibilities of the FDA. Specific US laws and regulations applicable to drugs, devices and biologics and international regulations and import/export concerns are examined. Prerequisite(s): BIO 343 or BIO 348 with a grade of C- or higher.
Course Offered: Fall, Spring, Summer
Credits:

BIO 460 Topics in Biology
A study of current discoveries and applications of biology, with emphasis on student participation and written assignments. Critical thinking will be developed concerning the validity of popular reports and extraordinary claims. Ongoing discoveries in biology will be analyzed according to their contributions to the advancement of knowledge, their possible commercial medical, or agricultural applications, and ethical issues that they may arise. Resources that will be utilized include current scientific literature, guest lectures, and the internet. Prerequisite(s): BIO 343, 344L, 348 and 349L with a grade of C- or higher.
Course Offered: Fall, Spring
Credits:

BIO 470 Bioscience Senior Seminar
The capstone course in the Bioscience Program, utilizes guest speakers and student literature searches to explore the state of the entire field of Bioscience. Each student is required to write a paper on an approved topic in the field of Bioscience based on primary sources in the scientific literature, and to present a seminar at which the student will defend his or her correlations and conclusions about the topic. Note: this course is also offered as a writing intensive course at the discretion of the department. Students cannot get credit for BIO 470 and BIO 470W. Prerequisite(s): BIO 343, 344L, 348 and 349L with a grade of C- or higher; for the writing intensive version, EGL 101 with a grade of C or higher is also required. Corequisite(s): BIO 441
Credits:

BIO 476L Bioscience Internship A1
Bioscience Internships A1 and A2 (BIO476L and BIO477L) are appropriate for students seeking a preliminary internship experience (45 hours earning 1 credit). Mentored projects may entail literature-based research on a proposed project to learn background information, experimental design, protocol planning and/or an introduction to advanced laboratory technology or field work. Note: Students seeking credit for health care professional shadowing or volunteer work involving patient assistance in a health care environment should register for BIO 380 and/or BIO 381. Prerequisite(s): Biology faculty permission, recommendation or invitation. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credit:

BIO 477L Bioscience Internship A2
Bioscience Internships A1 and A2 (BIO476L and BIO477L) are appropriate for students seeking a preliminary internship experience (45 hours earning 1 credit). Mentored projects may entail literature-based research on a proposed project to learn background information, experimental design, protocol planning and/or an introduction to advanced laboratory technology or fieldwork. Prerequisite(s): BIO 476L and Biology faculty permission, recommendation or invitation. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credit:

BIO 478L Bioscience Internship B1
Bioscience Internships B1 and B2 (BIO 478L and 479L) are appropriate for students seeking an internship requiring a commitment of 90 hours/semester (2 credits). Mentored projects may entail literature-based research, reagent/sample preparation, learning advanced laboratory or fieldwork techniques, performing experiments, data acquisition and interpretation and maintaining a laboratory notebook. Note: Students seeking credit for health care professional shadowing or volunteer work involving patient assistance in a health care environment should register for BIO 380 and/or BIO 381. Prerequisite(s): (BIO 343 and BIO 344L) or (BIO 348 and 349L) with a C- or higher and Biology faculty permission or invitation. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credits:

BIO 479L Bioscience Internship B2
Bioscience Internships B1 and B2 (BIO 478L and 479L) are appropriate for students seeking an internship requiring a commitment of 90 hours/semester (2 credits). Mentored projects may entail literature-based research, reagent/sample preparation, learning advanced laboratory or fieldwork techniques, performing experiments, data acquisition and interpretation and maintaining a laboratory notebook. Prerequisite(s): BIO 478L and Biology faculty permission, recommendation or invitation. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credits:

BIO 480L Bioscience Internship I
Bioscience Internship I is the first in a series of four potential internships (BIO 480L, 481L, 482L, and 483L) representing substantial projects or work experience requiring a commitment of 135 hours/semester (3 credits). Mentor directed research projects may entail literature searches and any or all laboratory, or fieldwork activities needed for the acquisition and interpretation of experimental data, as well as documentation of these activities in a laboratory notebook. Note: Students seeking credit for health care professional shadowing or volunteer work involving patient assistance in a health care environment should register for BIO 380 and/or BIO 381. Prerequisite(s): Biology faculty permission, recommendation or invitation. BIO 343/344L or BIO348/349L with a C- or better. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credits:

BIO 481L Bioscience Internship II
Bioscience Internship II is the second in a series of four potential internships (BIO 480L, 481L, 482L, and 483L) representing substantial projects or work experience requiring a commitment of 135 hours/semester (3 credits). Mentor directed research projects may entail literature searches and any or all laboratory, or fieldwork activities needed for the acquisition and interpretation of experimental data, as well as documentation of these activities in a laboratory notebook. Prerequisite(s): Biology faculty permission, recommendation or invitation and BIO 480L. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credits:

BIO 482L Bioscience Internship III
Bioscience Internship III is the third in a series of four potential internships (BIO 480L, 481L, 482L, and 483L) representing substantial projects or work experience requiring a commitment of 135 hours/semester (3 credits). Mentor directed research projects may entail literature searches and any or all laboratory, or fieldwork activities needed for the acquisition and interpretation of experimental data, as well as documentation of these activities in a laboratory notebook. Prerequisite(s): Biology faculty permission, recommendation or invitation and BIO 481L. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credits:

BIO 483L Bioscience Internship IV
Bioscience Internship IV is the fourth in a series of four potential internships (BIO 480L, 481L, 482L, and 483L) representing substantial projects or work experience requiring a commitment of 135 hours/semester (3 credit). Mentor directed research projects may entail literature searches and any or all laboratory, or fieldwork activities needed for the acquisition and interpretation of experimental data, as well as documentation of these activities in a laboratory notebook. Prerequisite(s): Biology faculty permission, recommendation or invitation and BIO 482L. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credits:

BIO 484L Bioscience Internship V
Bioscience Internship V is the first in a series of three potential internships (BIO 484L, 485L, and 486L) representing longer-term projects or work experience requiring a commitment of 180 hours/semester (4 credits). Mentor directed research projects may entail literature searches and any or all laboratory, or fieldwork activities needed for the acquisition and interpretation of experimental data, as well as documentation of these activities in a laboratory notebook. Note: Students seeking credit for health care professional shadowing or volunteer work involving patient assistance in a health care environment should register for BIO 380 and/or BIO 381. Prerequisite(s): Biology faculty permission, recommendation or invitation. BIO 343/344L and/or BIO348/349L with a C- or better. Off-campus internships also require approval of the Biology Internship Coordinator. Credits 4
Course Offered: Fall, Spring, Summer
Credits:

BIO 485L Bioscience Internship VI
Bioscience Internship VI is the second in a series of three potential internships (BIO 484L, 485L, and 486L) representing longer-term projects or work experience requiring a commitment of 180 hours/semester (4 credits). Mentor directed research projects may entail literature searches and any or all laboratory, or fieldwork activities needed for the acquisition and interpretation of experimental data, as well as documentation of these activities in a laboratory notebook. Prerequisite(s): BIO 484L and Biology faculty permission, recommendation or invitation. Off-campus internships also require approval of the Biology Internship Coordinator.
Course Offered: Fall, Spring, Summer
Credits:

BIO 486L Bioscience Internship VII
Bioscience Internship VII is the third in a series of three potential internships (BIO 484L, 485L, and 486L) representing longer-term projects or work experience requiring a commitment of 180 hours/semester (4 credits). Mentor directed research projects may entail literature searches and any or all laboratory, or fieldwork activities needed for the acquisition and interpretation of experimental data, as well as documentation of these activities in a laboratory notebook. Prerequisite(s): BIO 485L and Biology faculty permission, recommendation or invitation. Off-campus internships also require approval of the Biology Internship Coordinator.
Credits:

BIO 490 Senior Research Project
An intensive bioscience research experience for selected student in a research laboratory under the supervision of faculty engaged in current investigations in the field of bioscience. The student will be expected to commit himself / herself to a full weekly schedule of laboratory research activity and tutorials for a semester or summer to gain professional expertise in laboratory procedures, record keeping, operation of laboratory equipment, experimental design, and preparation of data for scientific publication presentation and oral presentation. Technical Elective for Bioscience majors. Prerequisite(s): Senior status and recommendation of faculty.
Credits:

BUSINESS (BUS)

BUS 101 Accounting I
Fundamental accounting concepts and principles are covered through an understanding of the following topics: accounting as an information system; analyzing a transaction; the accounting cycle; accounting for both service enterprises and merchandising businesses; deferrals and accruals; reversing entries; systems design; accounting for cash, receivables, temporary investments and inventory; payroll accounting. Students apply concepts to the preparation of special journals, subsidiary ledgers, worksheets and financial statements.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 102 Accounting II
Continued development of the principles and concepts introduced in Accounting I. The following topics are included: emphasis on further understanding of generally accepted accounting principles; plant assets; intangible assets; determination of depreciation, depletion and amortization; accounting for partnerships and corporations; long term liabilities; investments in bonds and stock; statement of cash flows; managerial accounting; accounting for manufacturing operations; budgeting and standard costs systems. Prerequisite(s): BUS 101 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 109 Management Theories and Practices
This introductory course covers management principles pertaining to human resources, individual behavior in organizations, employee motivation and performance, and business ethics. Topics also include managing and the manager's job; planning and decision making; employee performance appraisal and feedback; leadership and influence processes; interpersonal relations and communication; and managing work groups and teams.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 111 Introduction to Business
This course introduces the student to the fundamentals of American Business and its contemporary environment. It provides an overview of organizational, national, and international trends and their impact on enterprises both large and small. The course develops an understanding of important business concepts, principles, and practices that explain how businesses are formed, how they operate to accomplish their goals, and why/how their success depends on effective management, production, marketing and finance/accounting.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 121 Business Mathematics
The fundamentals of applied mathematics in the field of accounting, finance, marketing, and selling. Topics include interest, bank discount, insurance, and annuities. The use of arithmetic as a managerial tool is stressed.
Course Offered: Fall, Spring, Summer
Credits:

BUS 131 Marketing Principles
This course provides the student with a sound knowledge of the basic elements of the marketing process. Major topics include the features of consumer and organizational markets, market segmentation, and target market strategies. Product planning and development, brands, packaging and other product features are covered. Price determination and the use of various pricing strategies are discussed. The factors in the selection of channels of distribution and the features of wholesaling and retailing are considered. Elements of the promotional process such as sales, advertising, and sales promotion are included. Ethical and legal issues in marketing, marketing of services, global marketing, and marketing on the Internet are also covered.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 141 Contemporary Business Communications
An introduction to the role and importance of effective communications in business. Key topics include the familiarization and practice in preparing common types of internal and external business communications; contemporary issues in business communication relating to technology, ethics, and nondiscriminatory language; memo and report writing with proper mechanics, style, and appropriate tone/attitude; and business presentations. Prerequisite(s): EGL 101 and BCS 102
Course Offered: Fall, Spring, Summer
Credits:

BUS 188 Advertising Art and Applications
This course will combine basic advertising principles with practical media application. This course shall introduce students to the business of advertising in a contemporary global environment. The course will explore concepts of advertising, including elements of media selection and copywriting within the parameters of internal budgets, management and the application of actual advertising creation. In addition, students will create advertising, integrating the roles of the creative director and marketing manager. Note: Students completing this course may not receive credit for VIS 188.
Course Offered: Fall, Summer
Credits:

BUS 202 Business Law I
An introduction to the nature and sources of law; the role the legal system; the law of torts and crimes; the law of contracts; and real and personal property.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 209 Teamwork and Team Building
The following topics will be discussed and analyzed: teams in organizations, understanding team building and development, working in groups and teams, team roles and processes, being a team leader, and handling team conflict. The culmination of these concepts and functions, referred to as "team forming, storming, norming, and performing," will also be covered. Case studies will be used extensively. Prerequisite(s): BUS 109
Course Offered: Fall
Credits:

BUS 220 Financial Information Systems
This course will further the understanding of accounting theory and will provide the opportunity to achieve competency in the use of computerized applications. The course will introduce students to internal control theory within a computerized financial information system. Use of the Web for accessing relevant information will also be introduced. Prerequisite(s): BUS 101 Corequisite(s): BUS 102
Course Offered: Fall, Spring, Summer
Credits:

BUS 230 Environmental Law
This elective course addresses concerns pertaining to the business environment, instructing students as to the unified ecological approach to which affect management. The political approach to business environmental concerns in the context of constitutional, common law and administrative law theories and case and statutory analysis are examined, referencing basic natural science technology. Designed as a first law course it introduces the business, horticulture and industrial technology student to the legal process applying relevant components of environmental law studies. A nationally adopted text of a major law publisher and contemporary business periodical articles on assigned topics are to be used extensively.
Course Offered: Fall, Summer
Credits:

BUS 232 Electronic Commerce
This cross-listed business management and business computer systems course covers electronic commerce (EC) foundations, retailing methodologies, and marketing research. Focus will be on the various forms, strategies, and implementations of EC including business-to-business (B2B), business-to-consumer (B2C) and consumer-to-consumer (C2C). Also covered will be social networking, electronic payment systems, and public policy issues including privacy and intellectual property matters as well as recent information technology advancements. Students completing BUS 232 may not receive credit for BCS 232. Prerequisite(s): BUS 109 or Management course and BCS 101 or BCS 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 240 Business Statistics
This course provides an understanding of statistical concepts and tools that are critical in business decision-making. The discussion and development of each topic is presented in an application setting, with the statistical results providing insights and solutions to real world problems. Students will be able to calculate and perform various analyses, including but not limited to: Interval Estimation, Hypothesis Testing, Test of Goodness of Fit, and Independence and Regression Analysis. The coursework requires extensive use of commercially available statistical software. Prerequisites: MTH 117 or MTH 129
Course Offered: Fall, Spring, Summer
Credits:

BUS 250 Consumer Behavior
This course recognizes the central role of consumers in determining the fate of a firm's marketing efforts. Topics covered include the understanding of consumer motivation, perception, and learning, as well as the recognition of social influences on consumer behavior such as reference groups, opinion leadership, culture, and subcultures. Emphasis will be on the consumer's decision making process so that students can make more informed choices in the marketplace. Topics also include the methods marketers use to influence consumer behavior and corresponding ethical and legal issues. Prerequisite(s): BUS 131 or Department approval.
Course Offered: Fall, Spring, Summer
Credits:

BUS 251 Retailing
This course helps students develop an understanding of the relationship of retailing to the marketing process and describes the fundamentals of modern retailing. A study is made of modern retail institutions.
Course Offered: Fall, Summer
Credits:

BUS 253 Industrial Marketing
This course focuses on the marketing of industrial goods and services to industrial markets. Industrial product planning, channels of distribution, promotional activities and pricing strategies are emphasized. Other topics such as understanding industrial buying and evaluating potential markets are also covered. Prerequisite(s): BUS 131
Course Offered: Fall
Credits:

BUS 254 Principles of Selling
This course emphasizes the creative selling techniques used by professional salespeople. It covers all the important elements of the personal selling process with special emphasis placed on determining prospects' needs, translating features into benefits, overcoming objections and closing methods. Participants will demonstrate their ability to apply the techniques discussed by delivering sales presentations. Prerequisite(s) BUS 131 or Department approval.
Course Offered: Fall, Summer
Credits:

BUS 257 Advertising Principles
This course uses practical concepts to examine the role of advertising in the marketing process. Topics covered include: ethical issues involved in advertising, various types of advertising used by marketers, services performed by ad agencies, the creative side of advertising including basic elements of copywriting and design, how to prepare an ad budget, and the elements of media selection. Also covered are the various types of advertising media including magazines, newspapers, outdoor, transit, yellow pages, and direct mail as well as the features of advertising on television, radio and the Internet. Prerequisite(s): BUS 131 or Department approval
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 258 Production Management
Presents a survey which informs the student about the development of modern industry and scientific management and will enable them to grasp the operating principles.
Credits:

BUS 259 Public Relations
Principles and practices of building good public relations between industry and employees, stockholders, consumers, suppliers and the press. The development of public relations as a top-management function.
Course Offered: Fall, Spring, Summer
Credits:

BUS 266 Personnel and Human Resources Management
This course develops an understanding of the important functions and tasks performed by the modern human resource department such as staffing, training, employee safety and compensation. Emphasis throughout will be on the partnership to ensure a motivated work force. Prerequisite(s): BUS 109 or Department approval
Course Offered: Fall, Spring, Summer
Credits:

BUS 267 Small Business Management
This course helps students develop an understanding of the relationship of small business management to the management process. It describes the fundamentals of small business management. A study is made of major problems and pitfalls faced by managers of small businesses.
Course Offered: Fall, Summer
Credits:

BUS 271 Intermediate Accounting I
An in-depth study of the principles related to financial accounting topics and a study of recent developments in financial accounting required by the Financial Accounting Standards Board. Topics include the following: development of accounting standards; nature of the conceptual framework, assumptions and principles; review of the accounting process; continued study of the Income Statement, Balance Sheet and Statement of Cash Flows; time value of money; cash and receivables, inventories; acquisition and disposal of property, plant and equipment; depreciation and depletion; intangible assets; long-term investment in Equity Securities and other assets. Prerequisite(s): BUS 101 and 102
Course Offered: Fall, Summer
Credits:

BUS 272 Intermediate Accounting II
A continuation of the study of the principles related to financial accounting. This study will include a presentation of the following topics: stockholders' equity; dilutive securities; revenue recognition; accounting for income taxes; accounting for pensions and for leases; accounting changes and error analysis, full disclosure in financial reporting; financial reporting and changing prices; liabilities-current and contingent; liabilities-long term. Prerequisite(s): BUS 271
Course Offered: Fall, Spring, Summer
Credits:

BUS 273 Cost Accounting
Principles of cost accounting applied to manufacturing industries. The use of cost data and procedures under job order, process cost, and standard cost accounting systems as a tool of management. Prerequisite(s): BUS 101 and 102
Course Offered: Summer
Credits:

BUS 278 Business Project
This is an independent study course designed to offer a student experience in research and performing special projects in business and/or related area of interest. A faculty member shall act as a Project Advisor. The project selected will utilize skills and knowledge acquired in previous business administration and related courses. The number of credits received will be determined by the complexity of the project and agreed upon prior to the student's starting the course.
Course Offered: Fall, Spring, Summer
Credit:

BUS 280 International Business
This course examines the international integration of socio-cultural, political, and economic aspects of business. It explores the impact of globalization on countries, organizations, and individuals. The course will also discuss key issues in ethics, corporate social responsibility, and technology in the global context. Students will develop a broad understanding of the global marketplace and learn how the global environment affects business functions and performance.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 291 Investments
To familiarize students with financial literature and facilities that are available as guides to the proper selection of securities and other types of investments. The course is covered from the perspective of the individual investor. As such, a logical portfolio commensurate with the financial goals of the individual is stressed. Financial information available both in published as well as Internet access format are covered.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 300 Operations Management
This course undertakes an examination of the role of operations within manufacturing and service organizations. Emphasis is placed upon recognizing operational opportunities and tradeoffs, and employing

quantitative and qualitative tools and decision support systems to assist strategic and operational decision-making. The general functions of operations management as applied to the transformation process are covered. Some of the important topics include but not limited to Forecasting, Statistical Quality Control, Inventory Management, Linear Programming, and Transportation Models. Note: Students who have previously completed IND 301 cannot receive credit for BUS 300. Prerequisite(s): BUS 240 or MTH 110
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 304 Business Law II
An introduction to the law of sales and lease contracts, letters of credit, commercial paper and secured transactions under the UCC and creditor's rights and remedies, including surety ship and guaranty, insurance, wills, trusts, elder law and consumer protection. Prerequisite(s): BUS 202 or Department approval
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 305 Entrepreneurship
This course covers the process of creating and growing a new business venture through the introduction and development of a business idea. Also covered are the nature and importance of entrepreneurs, international entrepreneurship opportunities, and the development of business and marketing plans. Methods for financing the new venture through the use of case studies and practical applications will be discussed and covered in assignments. Prerequisite(s): BUS 109 or Department approval.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 306 Project and Contract Management
This course covers the processes encountered in choosing, planning, controlling, and negotiating of projects and contracts in technologically based firms. Topics include project and contract; feasibility; risk analysis; selection; portfolio optimization; cost estimation and controls; capital budgeting; performance relating to negotiation, adjustments, and benchmark standards; and awareness and appreciation for ethical practices. Note: Students completing this course may not receive credit for IND 306. Prerequisite(s): BUS 109
Course Offered: Fall, Spring, Summer
Credits:

BUS 307 Corporate Finance
The overall aim of this course is to help students develop an understanding and appreciation of Finance as a business discipline - an analytical approach in assessing the financial worthiness of a business entity is stressed. Topics covered include time value of money; financial statement analysis; valuation models; risks and rates of return; calculating beta coefficients; working capital management; capital budgeting; the cost of capital leverage and dividend policy; and financial forecasting. Note: Students cannot receive credit for BUS 201 and BUS 307. Prerequisite(s): BUS 101 and 102 and Junior level status
Credits:

BUS 310 Principles of Taxation
This course covers fundamental principles of income taxation under the Internal Revenue Code, related Regulations and court cases. Tax treatment of the individual is stressed, with emphasis on filing status, income and business deductions, and realization and recognition of capital gains and losses. Corporate and partnership taxation are introduced. Students are taught to recognize tax issues and gain the skills necessary to solve those issues. Prerequisite(s): BUS 102 or permission of department chair
Course Offered: Fall, Summer
Credits:

BUS 311 Organizational Behavior
This upper-division course presents the concepts of organizational behavior and structure as well as topics relating to motivation content and process theories; group communication and dynamics; decision making; causes and resolutions of organizational conflicts; and factors pertaining to influence, power, and politics in organizations. Note: Students completing this course may not receive credit for PSY 311. Prerequisite(s): BUS 109, or PSY 101 or permission of department chair.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 312 Purchasing and Supply Chain Management
This course covers the purchasing and movement of materials into, through, and out of a firm; fundamentals of domestic and international transportation systems; distribution center, warehouse, and plant location; and management of multinational organizations and supply networks. Note: Students who previously took IND 311 cannot receive credit for this course. Prerequisite(s): BUS 109
Course Offered: Fall, Spring, Summer
Credits:

BUS 314 Supply Chain Analytics
This course covers the three key aspects of analytics (descriptive, predictive and prescriptive) in supply chain management. Descriptive analytics are focused on key performance indicators that describe the current status of the business. Predictive analytics include forecasting and aggregated planning. Finally, prescriptive analytics focus on optimization models and simulation. Prerequisite(s): BUS 240 with a C or higher
Credits:

BUS 316 Customer Relations and Quality
This course covers the basics of customer relations and quality in industry. The course includes discussion of quality management principles and standards as well as feedback techniques to measure and assure customer satisfaction. The American Customer Satisfaction Index, J.D. Power and Associates Reports, Malcolm Baldrige National Quality Award, and International Organization for Standardization (ISO) Automotive Quality System QS-9000 registration criteria will also be discussed. Note: Students completing this course cannot receive credit IND 316. Prerequisite(s): BUS 300 or IND 301
Credits:

BUS 317 Enterprise Resource Planning
Enterprise Resource Planning (ERP) is an organizational and information systems approach that integrates planning, customer relationship management, decision making, master scheduling, material requirements planning, marketing, forecasting, sales, finance, electronic commerce, and human resources. The course will include lectures and extensive use of supporting ERP software. Note: students cannot receive credit for both BCS 317 and BUS 317. Prerequisite(s): BUS 109 or BUS 300 or BCS 300.
Course Offered: Fall, Summer
Credits:

BUS 319 Marketing Research
This course provides students with the tools necessary to understand and carry out market research. Marketing research involves a number of steps from deciding on the research objective, data gathering and analysis, and the interpretation of results. The course is an introduction to a range of tools including the use of focus groups, the collection of secondary data, survey and questionnaire design, hypothesis testing and regression analysis, conjoint analysis, factor analysis, cluster analysis perceptual mapping, and social media analytics. Prerequisite(s): BUS 240 and BUS 131
Credits:

BUS 320 International Marketing
As the interconnectedness of the global economy grows, marketing managers are faced with an imperative to understand and face the challenges posed by the international marketplace, including the challenge of selling goods and services in markets abroad. This course focuses on marketing management within international settings and will cover topics and issues such as international market selection, adaptation of products, international promotion and pricing strategies, and differences in distribution channels, all within the context of national differences in culture, consumer behavior, levels of development, and political, legal, and economic systems. Prerequisite(s): BUS 131 and BUS 280
Course Offered: Fall, Spring, Summer
Credits:

BUS 321 International Law
This course provides study in the basic concepts and processes of the international legal system. The interaction of state, federal, and international law as well as the relationship of international law and the American legal system are explained. Particular attention is given to current problems faced by managers and to the dominant political, social economic, and technological forces influencing the evolution of international law. Prerequisite(s): BUS 202
Course Offered: Fall, Spring, Summer
Credits:

BUS 322 International Management
This course will examine the critical issues and practices of international management. Emphasis will be placed on the multicultural workforce and worldwide developments. Topics will include planning, political risk, organizing, decision-making, and controlling as pertaining to international management and operations. Students will study human resource/ personnel issues concerning selection and repatriation, communication skills, and labor relations in a global context. Ethics and social responsibility as well as future trends of international management will be explored. The course will include student assignments and case studies examining the issues affecting small businesses expanding operations into foreign markets. Prerequisite(s): BUS 109, BUS 280
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 327 Risk Management and Insurance
This course is designed to assist the student in the identification and analysis of the major types of financial risk management and insurance. The course will analyze the needs and problems faced by individuals and corporations regarding risk management exposure and how these exposures to risk are addressed through various forms of insurance. Case studies involving risk management, insurance, and relevant ethical factors will be covered. Prerequisite(s): BUS 201 or department approval
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 330 Cost Management Systems
This upper-level course pertains to the key elements of cost management systems of manufacturing and service organizations. Topics covered include: using cost drivers and activity based costing; eliminating non-value added activities; costing product (service) life cycles; and justifying capital expenditures for computer integrated manufacturing systems. Prerequisite(s): Two semesters of accounting.
Course Offered: Fall
Credits:

BUS 340 Advanced Business Statistics
This course covers advanced statistical concepts and techniques as applied to decision making and business applications. Topics include: estimating population values, hypothesis testing for one and two populations, analysis of variance, linear regression and correlation analysis, multiple regression analysis and model building, statistical process control, analyzing and forecasting time-series data, and decision-making analysis. Prerequisite(s): BUS 240, statistics course or Department approval.
Course Offered: Summer
Credits:

BUS 345 Foundations of Business Analytics
This course introduces the primary business analytics concepts and tools. The course presents an overview of basic statistics, data mining, data visualization, optimization, and decision analysis. The course incorporates the use of Excel spreadsheet modeling capabilities in order to prepare students to model and solve real world problems. Prerequisite(s): BUS 240 or MTH 110 with a grade of C or higher
Course Offered: Fall
Credits:

BUS 350 American Business History
The course focuses on major developments in American business history, covering the period from the early colonial period through the present time. Students will describe and summarize significant historical developments to American industry and business practice, and will analyze and classify major factors influencing business and economic change, including technology, natural resource exploitation, and government policy, with special focus on monetary policy, the gold standard, and tariffs. Students will also interpret modern policy and business practice through the lens of historical business developments. Students will also develop and analyze profiles of American financial and industrial leaders and the companies and industries they created. Prerequisite(s): BUS 109 and EGL 101 with a grade of C or higher.
Credits:

BUS 352 Employment Law
This course reviews the field of law governing employment. Topics covered include the following: Employment relationship and procedure, selection, testing, privacy, termination, and arbitration; employment discrimination regarding the Civil Rights Act, Affirmative Action, racial discrimination, sex discrimination, family leave and pregnancy discrimination, sexual orientation, religious discrimination, national origin discrimination, age discrimination and disability discrimination. Also covered are employment regulations regarding unions and collective bargaining agreements, wage and hour regulations, occupational safety and health, workers' compensation, and employee benefits. Prerequisite(s): BUS 202
Course Offered: Fall
Credits:

BUS 356 Sales Management
The major problems of sales management in the distribution of products and services; the selection, recruitment, and training of sales personnel; measurement of the effectiveness of salespeople, supervision and compensation of salespeople; sales quotas and budgets. Note: Students cannot receive credit for BUS 356 and BUS 256. Prerequisite(s): BUS 254 or Department approval
Credits:

BUS 360 Leadership Theories Practices
The following will be covered: definition and significance of leadership; global and cultural contexts of leadership; early theories and practices: the foundations of modern leadership; individual differences and traits and the ability to lead; leadership and "emotional intelligence;" leadership and "the moral compass;" power, influence, and leadership; new models of leadership; leadership of non-profits; and leading change. Prerequisite(s): BUS 109
Course Offered: Summer
Credits:

BUS 366 International Human Resource Management
The importance of managing cultural diversity is a critical component to deriving successful outcomes for the workplace endeavor as well as the criteria for individual advancement in one's career in the global arena. The rapidly expanding involvement of the United States in global business activities has created a critical need for international business talent in all areas of business, and in particular, successful management of cultural differences to advance the team and the entity. This course addresses the understanding of cultural differences in global business and the art of negotiation to gain a win/win. Prerequisite(s): BUS 109
Course Offered: Fall
Credits:

BUS 367 Negotiation and Conflict Resolution
This experiential course is intended to help students understand the theory, processes, and practices of negotiation, and also the cross-cultural issues facing negotiation, so they can be more effective negotiators in a variety of situations. This course is highly participatory, and utilizes various types of one-on-one and group-based negotiation simulations. Prerequisite(s): BUS 109
Course Offered: Fall, Summer
Credits:

BUS 370 Counterproductive Behavior in Organizations
Counterproductive work behavior is a phenomenon that no organization can afford to willfully ignore. It depletes organizational resources, erodes production standards, causes unfairness and unrest among employees, and is a violation of the organization’s norms and ethical standards. This course focuses on studying this very important and timely topic to identify the conditions under which counterproductive work behavior is likely to develop and strategies for counteracting it. Prerequisite(s): BUS 109 or Junior-level status
Credits:

BUS 379 Business Internship
This upper division course is designed to give students an opportunity to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from BUS 379 and BUS 479 Business Internship II. Prerequisite(s): Junior-level status, Department approval, GPA of 3.0 or better
Course Offered: Fall, Spring, Summer
Credits:

BUS 380 Business Internship
This upper division course is designed to give students an opportunity to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from BUS 379 and BUS 479 Business Internship II. Prerequisite(s): Junior-level status, Department approval, GPA of 3.0 or better
Course Offered: Fall, Summer
Credits:

BUS 381 Business Internship
This upper division course is designed to give students an opportunity to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from BUS 379 and BUS 479 Business Internship II. Prerequisite(s): Junior-level status, Department approval, GPA of 3.0 or better.
Course Offered: Summer
Credits:

BUS 382 Business Internship
This upper division course is designed to give students an opportunity to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from BUS 379 and BUS 479 Business Internship II. Prerequisite(s): Junior-level status, Department approval, GPA of 3.0 or better
Credits:

BUS 385 Business Data Management
In this course students will learn the concepts, principles and techniques used to collect, store, and retrieve data for business purposes. The objective of the course is to provide students with a background that allows them to understand management of data in the context of business organizations and corporations. Topics include a review of data types, modeling data in the organization and database design; an introduction to SQL and an introduction to data warehousing and big data. Prerequisite(s): MTH 116 with a grade of C or higher and Junior level status
Credits:

BUS 390 Special Topics in Business Management
This course will provide students the opportunity to learn about contemporary issues in business. Topics covered may include one or more specific areas within business such as Marketing, Leadership, Ethics, and Finance. Methods of teaching and assessment may include the use of seminars, speaker series, simulations, field trips, experiential learning, and the implementation of business ideas and plans. The subject for a particular semester will be announced prior to registration. Prerequisite(s): BUS 109
Course Offered: Fall, Spring, Summer
Credits:

BUS 391 Selected Topics in Bus Mngmt
This course will provide students the opportunity to learn about contemporary issues in business. Topics covered may include one or more specific areas within business such as Marketing, Leadership, Ethics, and Finance. Methods of teaching and assessment may include the use of seminars, speaker series, simulations, field trips, experiential learning, and the implementation of business ideas and plans. The subject for a particular semester will be announced prior to registration. Prerequisite(s): BUS 109
Course Offered: Fall, Spring, Summer
Credits:

BUS 400 Quality Techniques
This course covers quality tools and techniques used in problem solving and decision making. Topics include: Pareto charts; cause and- effects diagrams; check sheets; histograms; scatter diagrams; quality function deployment; statistical process control; continuous improvement; Goldratt's theory of constraints; benchmarking; just-in time manufacturing; and implementing total quality. A written assignment will be required that integrates quality topics with problem solving and decision making tools and techniques. Note: Students completing this course may not receive credit for IND 400. Prerequisite(s): BUS 240 or MTH 110
Course Offered: Summer
Credits:

BUS 401 Quality Management
This course covers quality philosophies and concepts. Topics include: quality and global competitiveness; human resources and technology; total quality approach; strategic management; quality management and ethics; partnering for competitiveness; quality culture; customer satisfaction and retention; employee empowerment; leadership and change; team building and teamwork; communication and interpersonal relations; education and training; overcoming politics and negativity toward quality in the workplace; relationship of ISO 9000 and Total Quality Management. A written assignment will be required that integrates quality philosophies and concepts with management and human resources issues. Note: Students completing this course may not receive credit for IND 401. Prerequisite(s): BUS 300 or IND 301
Course Offered: Fall
Credits:

BUS 404 Financial Markets and Institutions
This senior level course describes the various financial markets and the financial institutions that serve those markets. Specific topics include financial intermediaries, primary and secondary financial markets, treasury and agency securities markets, municipal securities markets, financial futures markets, and stock markets in the U.S. and worldwide. Also included are evolving technologies, especially e-Business and the Internet, and their effect on financial markets and institutions. The course contains oral and written case study analyses utilizing electronic database research techniques. Prerequisite(s): BUS 201 or department approval
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 406 Business Organization Law
An introduction to the law of agency, partnerships, corporations, limited liability companies, securities, regulations, bankruptcy, employment and anti-trust laws. Prerequisite(s): BUS 202 or Department approval.
Course Offered: Fall, Summer
Credits:

BUS 409 Strategic Management
This course covers key strategic management topics including internal and external scanning for SWOT (strengths, weaknesses, opportunities, and threats) analysis, competitive advantage, cost versus differentiation, horizontal and vertical integration, strategic alliances, strategy implementation, as well as many other important topics. Special attention will be paid to international contexts, issues of ethics and governance, and measurements of strategic success. Students will be required to present oral and/or written case studies and analyses. Students who have previously completed IND 409 cannot receive credit for BUS 409. Note: Students cannot get credit for BUS 409 and 409W; BUS 409W can be used to fulfill the writing intensive requirement. Prerequisite(s): BUS 300, Senior level status
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 410 Senior Project
This is an independent study course. Students must obtain permission from a Project Advisor before registering for this course. Although there is some flexibility, most senior projects will involve student participation onsite in a company. The topic for the senior project will utilize skills and knowledge acquired in previous Management Technology and related courses. Note: Students completing this course may not receive credit for IND 410 Prerequisite(s): BUS 409
Course Offered: Fall, Summer
Credits:

BUS 411 Financial Statement Analysis
This course covers the main reasons for and techniques used in financial statement analysis. This analysis uses the historical record of companies, as presented in financial statements, to answer questions regarding a firm's

credit worthiness and risk; current and projected financial performance; strengths and weaknesses in financial position; and strategy development for future operations. The course includes analysis tools and techniques such as common size financial statements, trend statements, and financial ratios. Also covered will be sources of financial information embodied in corporate annual reports such as the auditor's report; footnotes and supplemental schedules; and SEC Forms 10-K and 10-Q. Prerequisite(s): BUS 201 or department approval
Course Offered: Summer
Credits:

BUS 412 Business, Government and Society
This course covers the interrelationships among business, government, and society. Included also are the ethical, economic, political, and social issues managers face regarding consumers, employees, suppliers, the environment, government laws and regulations, and stockholders. These interrelationships and issues are discussed and analyzed in a managerial context employing stakeholder, historical, and global perspectives. Individual and group case study presentations both in oral and written formats are a major focus of the course.
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 413 Advanced Enterprise Resource Planning
This advanced-level Enterprise Resource Planning (ERP) course includes high-level information technology coverage of Scheduling, Planning, MRP, Logistics, Warehousing, Procurement, Quality, Vendor Management, Cost Accounting, Forecasting, KPI, Supply Chain, and Customer Resource Management. Also covered are concepts and software applications, pertaining to product design, development, manufacturing (production), marketing, sales, and field service. This course emphasizes proficiency in all the skill sets typically required within industry practices. Prerequisite(s): BUS 300 or BCS 300 and BUS 317 or BCS 317
Course Offered: Fall, Summer
Credits:

BUS 421 Advanced Topics in Corporate Finance
This advanced corporate financial management course covers topics taken from the Institute of Management Accountants Certified in Financial Management program Part 2CFM examination. Topics covered include working capital policy and management; strategic issues in finance; portfolio and risk management; external financial environment; and employee benefit and pension plans. Prerequisite(s): BUS 307 or department approval
Course Offered: Fall, Winter, Spring, Summer
Credits:

BUS 440 Visual Analytics
This course focuses on the visualization techniques used to represent Business Information. The course enables students to answer three questions: What data do the final users need to see? What is the most effective way to develop and design the representation of data? How could the proposed visual representation be constructed? Topics covered include information visualization techniques for abstract data, visualization for spatial data, and visual analytical techniques applied to data transformation and visual exploration. This course is hands-on work intensive and helps develop skills in the use of modern visualization tools. Prerequisite(s): EGL 101 and BUS 340 with a grade of C or higher
Credits:

BUS 445 Advanced Business Analytics
This course focuses on the advanced tools and techniques used in business analytics. The course is divided in two major areas: machine learning and social network analytics. The first part will focus on key concept from machine learning such as nearest neighbors, decision trees and neural networks. R is the main tool used to implement these techniques. The second part is focused on tools and techniques used to analyze social networks structures and develop solutions to aid decision making. Prerequisite(s): BUS 340 with a grade of C or higher
Credits:

BUS 448 Business Analytics Project
This is a capstone course that focuses on the solution of real-life problems in business analytics. During the course students have the opportunity to apply the knowledge acquired through the program. Students will frame the problem, collect and process data, and use the analytics framework (descriptive, predictive, and prescriptive analytics) to obtain solutions and provide recommendations. Prerequisite(s): BUS 440 with a grade of C or higher
Credits:

BUS 460 Leadership and Ethics
This advanced-level business management course covers theories, case studies, and skill development applications relating to effective leadership and ethics. Emphasis will be on the interrelated role of laws, cultural norms, attitudes, moral development, situational circumstances, and technologies as determining effects on ethical leadership. Coursework includes leadership-and ethics related research literature and databases. Note: Students cannot get credit for BUS 460 and 460W; BUS 460W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Business Management Department. Prerequisite(s) BUS 109 or Management course, Senior-level status.
Course Offered: Fall, Spring, Summer
Credits:

BUS 470 Advanced Accounting
This course covers accounting for partnerships: formation, operation, dissolutions, and liquidation. Also covered are analysis of business combinations; statutory mergers, consolidations, acquisition of subsidiaries, preparation of consolidated financial statements including the equity method and elimination entries. Additionally, the course includes an introduction to foreign currency translation and transactions, the SEC, and the Sarbanes-Oxley Act. Prerequisite(s): BUS 272 or Department approval.
Course Offered: Summer
Credits:

BUS 471 Auditing
This course covers professional ethics and possible legal liability of the auditor. Emphasized are Generally Accepted Standards (GAAS) and other standards related to attestation engagements and skills needed to apply that knowledge in and other attestation engagements; the role of internal control; uses of sampling; effects of information technology the reports rendered by auditors; and the methods for preparing communications to satisfy engagement objectives. Prerequisite(s) BUS 272
Course Offered: Fall
Credits:

BUS 473 Global Finance
Introduces students to financial management in the context of international and global market and firm activities. Topics presented include international financial markets, foreign exchange markets, exchange rates, portfolio management from a global perspective, risk management, international banking, and multinational financial management. Prerequisite(s): BUS 201, 280
Course Offered: Fall
Credits:

BUS 479 Business Internship II
This senior-level course is designed to give students who have completed BUS 379 an opportunity to continue to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from Business Internships, BUS 379 and BUS 479. Prerequisite(s): BUS 379, or BUS 380 or BUS 381 or BUS 382, Senior-level status, Department approval, GPA 3.0.
Course Offered: Fall, Spring, Summer
Credits:

BUS 480 Business Internship II
This senior-level course is designed to give students who have completed BUS 379 an opportunity to continue to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from Business Internship, BUS 379 and BUS 479. Prerequisite(s): BUS 379, or BUS 380 or BUS 381 or BUS 382, Senior-level status, Department approval, GPA 3.0.

Course Offered: Summer
Credits:

BUS 481 Business Internship II
This senior-level course is designed to give students who have completed BUS 379 an opportunity to continue to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from Business Internship, BUS 379 and BUS 479. Prerequisite(s): BUS 379, or BUS 380 or BUS 381 or BUS 382, Senior-level status, Department approval, GPA 3.0.
Credits:

BUS 482 Business Internship II
This senior-level course is designed to give students who have completed BUS 379 an opportunity to continue to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from Business Internship, BUS 379 and BUS 479. Prerequisite(s): BUS 379, or BUS 380 or BUS 381 or BUS 382, Senior-level status, Department approval, GPA 3.0.
Credits:

BUS 483 Business Internship II
This senior-level course is designed to give students who have completed BUS 379 an opportunity to continue to gain in-depth work experience and skills under the tutelage of a business professional. The work done by the student is guided by objectives agreed to by the work supervisor, Internship Coordinator, and the student. Students are required to submit a written proposal, progress reports in the form of a weekly work experience journal, and a final report to be presented to the Internship Coordinator and work supervisor. Note: No more than 15 credits may be earned in total from Business Internship, BUS 379 and BUS 479. Prerequisite(s): BUS 379, or BUS 380 or BUS 381 or BUS 382, Senior-level status, Department approval, GPA 3.0.
Course Offered: Summer
Credits:

BUS 494 Seminar in Global and International Business
This capstone course for global business management majors will cover a wide range of current issues in strategy and policy and integrates concepts from across the core global business courses. Students will be required to synthesize and apply these methods and concepts to case studies and case write-ups. The course will culminate with students developing and completing a research project and presentation based upon their personal interest in global/international business. Prerequisite(s): BUS 280, 320, 322, and 409
Course Offered: Summer
Credits:

BUS 502 Project Management
This course covers the core knowledge of the project management professions. It includes the creation of the project charter and scope statement, establishment of the Work Breakdown Structure (WBS), and communication of the overall plan including risk planning, resource planning, creation of the project schedule and budget, development of the project team, and measurement and control of project implementation. Course content is aligned with Project Management Professional Certification requirements, such that the course serves as a preparation for the PMP examination (PMP examination is not part of the course). Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Fall
Credits:

BUS 504 Technology Management Ethics and Policies
This course defines ethics in the context of engineering technology management and its application in the context of the profession and licensure. It also covers the role of ethics during the bidding stage. This course addresses ethics for union and management, the role of ethics in the event of a change order, and ethics in private versus public ventures. Other topics covered are ethics in domestic versus international markets, the application of ethics in a twenty-first century global market, individual responsibilities and values, cultural background and its effect on ethics, peer review and peer attitudes toward s ethics, and leadership, power and the politics of ethics. This course uses real-life case studies as recorded by the National Society of Professional Engineers (NSPE). Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Spring
Credits:

BUS 532 Legal Aspects of Construction Management
This course covers the complexity of legal environments in construction. It includes principles of contract, standard forms of contract, contractual relationships, bidding documents, dispute resolution, red-flag clauses, labor agreements, insurance and surety bonds, change order management, differing site conditions, delays, suspensions and terminations, liquidated damages, allocating responsibility for delays, constructive acceleration, and associated documentation. Prerequisite(s): BUS 504 with a grade of C or higher, and Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Fall
Credits:

BUS 630 Decision Making and Risk Management
This course covers concepts and methods for making complex decisions in Technology Management. Students will identify criteria and alternatives, set priorities, and engage in allocating resources, strategic planning, resolving conflict, and making decisions. Students will select the most effective decision making approaches to evaluate multiple alternatives in scenarios with conflicting objectives and different levels of uncertainty. Students will also learn how to generate risk management plans, appraise mitigating risk options and revise decision making failures Prerequisite(s): Graduate status in ETM and permission of the graduate coordinator.
Course Offered: Spring
Credits:

BUS 670 Master's Project
This is a Capstone course for students who do not plan to take the thesis option. The course is designed as an independent study in which the student utilizes their knowledge in the field to evaluate a series of case studies. A complete oral and written presentation is required of each student detailing their work. In each case study the student must clearly demonstrate their ability to understand, analyze and solve technical and/or managerial problems by applying their knowledge gained through their course work. Students completing this course will not receive credit for ETM 670. Prerequisite(s): Completion of twenty-one (21) credits of required Core and Track Specific Courses in the ETM program and permission of graduate coordinator.
Course Offered: Fall, Spring
Credits:

BUS 671 Master's Thesis
This is an independent study performed by the students to utilize their knowledge in engineering technology management. This practice-oriented work contributes to the enhancement of productivity, the improvement of quality, and the achievement of an industry's cost effectiveness. The master's thesis draws on students' individual interests, stimulating their critical thinking, and sharpening their problem-solving abilities. A literature survey, analysis, discussion, and conclusions are documented in the thesis under the direction of a faculty mentor and presented by the student at the completion of the work to demonstrate their professional competency in their field of study. Students completing this course will not receive credit for ETM 671. Prerequisite(s): Completion of twenty-one (21) credits of required Core and Track Specific Courses in the ETM program and permission of graduate coordinator.
Course Offered: Fall, Spring
Credit:

BUS 680 Special Topics in Technology Management
This special topics course is designed to inspire students to study a specific topic or several related topics that address a special interest in technology management. It will require students to research, investigate, and analyze design, manufacturing, quality, or production issues. The course strategy is established by the instructor and adjusted to respond to students' interest to achieve the class goal of enhancing in-depth understanding of the subject matter. Students taking ETM 680 cannot get credit for BUS 680.

Prerequisite(s): Graduate status in Technology Management and permission of the graduate program coordinator.
Course Offered: Fall, Spring
Credits:

CHINESE (CHI)

CHI 151 Chinese I
A beginning course in Chinese emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Course Offered: Fall, Summer
Credits:

CHI 152 Chinese II
A continuation of Chinese 151. This course emphasizes the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative and cultural awareness.
Prerequisite(s): CHI 151 or 2-3 years of high school Chinese.
Course Offered: Fall, Summer
Credits:

CHEMISTRY (CHM)

CHM 111 Chemistry and the Public Interest
An abridged course in General Chemistry which presents the ideas and methods of chemical science in a qualitative and conceptual fashion. This course assumes no previous science background and will emphasize the fundamentals of measurement, atomic theory, bonding, solutions, acids and bases, salts, equations, chemical arithmetic and energy transfer. Illustrations and applications of concepts will be drawn from everyday life. (This course is intended to fulfill the science requirements of non-science majors and is NOT OPEN to science, health science, or pre-health majors).
Prerequisite(s): MP2 or MTH 015
Credits:

CHM 112L Chemistry and Public Interest Lab
A one semester laboratory course for non-science majors designed to provide students with experience in the methods of chemistry. Students will investigate the properties of substances, perform chemical analysis and substance identification, synthesize a drug and a natural product, and test manufacturers' claims for consumer products. Prerequisite(s): MP2 or MTH 015
Credit:

CHM 124 Principles of Chemistry
A one semester survey of general chemistry. Emphasis is placed on quantitative applications of chemical concepts. Topics include: measurement, matter and energy, atomic structure, periodic table, chemical bonding, nomenclature, chemical stoichiometry, chemical equations, gases, liquids and solids, solutions, acids and bases, equilibrium and kinetics. This course will fulfill the requirement of certain science, health science, or pre-health programs that have an introductory chemistry course as a prerequisite. Note: the laboratory course CHM 124L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course.
Prerequisite(s): MP2 or MTH 015
Course Offered: Fall, Spring, Summer
Credits:

CHM 140 Introduction to General, Organic and Biochemistry
A one semester course with laboratory designed primarily for Dental Hygiene students. Basic principles of general, organic and biochemistry are presented with emphasis on their applications to health science. Topics include measurement, states of matter, bonding theory, solutions, acids, buffers and pH, and the structure and function of carbohydrates, lipids, sterols, amino acids and proteins and a molecular approach to enzymatic action, digestion, metabolism and nutrition. Note: the laboratory course CHM 140L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course. Prerequisite(s): MP2 or MTH 015 and High School chemistry with Laboratory or CHM 124.
Course Offered: Spring
Credits:

CHM 152 General Chemistry Principles I
The first part of a two semester sequence in General Chemistry Principles with laboratory. This course covers the qualitative and quantitative aspects of scientific measurement, the nature of matter, gases, liquids and solids, energy, atomic theory, properties of elements, chemical bonding, molecular structure and properties, stoichiometry, thermochemistry and solutions. Note: the laboratory course CHM 152L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course.
Prerequisite(s): MP3 or MTH 116 AND Regents Chemistry or an equivalent High School Chemistry with Laboratory or CHM 124
Course Offered: Fall, Spring, Summer
Credits:

CHM 153 General Chemistry Principles II
A continuation of General Chemistry Principles I, which includes laboratory. Topics include: solutions and their colligative properties, acids and bases, chemical equilibrium, ionic equilibrium, pH, buffers, titration curves, oxidation and reduction balancing, electrochemistry, chemical kinetics, the covalent bond and the shape of molecules. Note: the laboratory course CHM 153L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course. Prerequisite(s): CHM 152
Course Offered: Fall, Spring, Summer
Credits:

CHM 260 Fundamentals of Organic Chemistry
A one semester course in organic chemistry designed to provide background in the fundamentals of nomenclature, mechanisms, structures, and synthesis of carbon based compounds. This course is designed for science and health science majors who desire a general rather than a detailed knowledge of the compounds of carbon. Topics to be covered include: structure and bonding, acid/base chemistry, isomerism, stereochemistry, and structure determination. Functional groups to be covered include: hydrocarbons, alcohols, ethers, aldehydes and ketones, carboxylic acids, carboxylic acid derivatives and amines. Laboratory work will include common organic techniques and experiments supporting the principles covered in lecture. Note: the laboratory course CHM 260L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course. Prerequisite(s): CHM 153
Course Offered: Fall, Spring, Summer
Credits:

CHM 270 Organic Chemistry I
This course is a study of the compounds of carbon involving a thorough integration of observation and theory and emphasizing the relationships between structures, properties, mechanisms and reactions. This course, intended for science and pre-professional majors, covers topics such as bonding and structure, alkanes, alkenes, alkynes, cycloaliphatic hydrocarbons, stereochemistry, alcohols, and phenols. Note: the laboratory course CHM 270L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course. Prerequisite(s): CHM 153
Corequisite(s): CHM 270L
Course Offered: Fall, Spring, Summer
Credits:

CHM 271 Organic Chemistry II
A continuation of CHM 270. Topics covered include: alkyl and aryl halides, alcohols and phenols, ethers and epoxides, carboxylic acids, esters, anhydrides, aldehydes, ketones, amines, amino acids, carbohydrates, heterocycles and polymers. Note: the laboratory course CHM 271L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course. Prerequisite(s): CHM 270 with a grade of C- or higher
Course Offered: Fall, Spring, Summer
Credits:

CHM 380 Biochemistry
A one semester course covering the fundamentals of biochemistry. Topics covered include: the structure and function of important biomolecules such

as carbohydrates lipids, amino acids, proteins and nucleic acids; enzyme kinetics and the use of cofactors and coenzymes; and metabolic pathways including glycolysis, TCA, electron transport system, fatty acid and amino acid pathways. Laboratory work includes current biochemical laboratory techniques such as chromatography and electrophoresis, application of specific topics described above, and analysis of data from laboratory experiments. Note: the laboratory course CHM 380L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course. Prerequisite(s): CHM 260 or CHM 271
Course Offered: Fall, Spring, Summer
Credits:

CHM 381 Advanced Biochemistry
A continuation of the concepts covered in Biochemistry. Students will examine the pathways, enzymes, and organic chemical mechanisms involved in the metabolic pathways of carbohydrates, lipids, amino acids, nucleic acids, and photosynthesis. Additional emphasis will be placed on the unique coenzymes that are required for these metabolisms. Students will also be trained in reading and interpreting research publications in biochemistry. Prerequisite(s): CHM 271 and CHM 380
Course Offered: Fall, Spring
Credits:

CHM 480 Chemistry Research I
Chemistry Research I represents substantial projects or work experiences for 135 hours earning 3 credits. Students will work alongside chemistry faculty in their professional research. Registration requires submission of resume three months in advance, chemistry faculty invitation or recommendation, and department chair approval. Prerequisite(s): CHM 270 and Permission of Department Chair.
Course Offered: Fall, Spring, Summer
Credits:

CHM 481 Chemistry Research II
Chemistry Research II represents substantial projects or work experiences for 135 hours earning 3 credits. Students will work alongside chemistry faculty in their professional research. Registration requires submission of resume three months in advance, chemistry faculty invitation or recommendation, and department chair approval. Prerequisite(s): CHM 480 with a grade of B or higher and Permission of Department Chair.
Course Offered: Fall, Spring, Summer
Credits:

CIVIL ENGINEERING TECHNOLOGY (CIV)

CIV 410 Transportation Engineering
This course focuses on the fundamentals of planning, design, and operation of various modes of transportation engineering in transportation systems. General administration, legislation, financing, studies, and evaluations of transportation projects will be addressed. The design parameters and characteristics of highway, bus, rail, air, and water transportation modes will be considered. Consolidation with a review of intelligent transportation systems and hands-on projects within various modes will also be undertaken. Prerequisite(s): CON 207
Credits:

CIV 412 Highway Engineering
This course focuses on the planning, design, and construction of highway transportation facilities. Topics to be covered include highway administration and finance, traffic flow characteristics, and driver characteristics. Design of geometry, roadside, drainage, and intersections will be considered. Further, considerations of traffic control and pavements will be made. Consideration of these topics will be based on standards promulgated by AASHTO and NYSDOT. Prerequisite(s): CON 302
Credits:

CONSTRUCTION MANAGEMENT (CON)

CON 101 Introduction to Technology and Applied Programming
A survey of technological concepts, terminology and a brief review of mathematical concepts. This course introduces concepts of vector and its applications. It introduces hands-on programming and its applications, and reviews problem-solving techniques with technological applications.
Credits:

CON 103 Surveying
The development of skills in the use of the basic surveying instruments-tape, level, transit. Trigonometric and differential leveling and cross-sectioning. Azimuth, bearing and angle determination by repetition procedures. Angular closures. Stadia and stadia reduction of inclined sights, topographic mapping by transit stadia and plan table methods. This course will include a field laboratory assignment.
Course Offered: Fall
Credits:

CON 106 Statics
This is a basic course in statics. The main objective of this course is to provide the student with a basic understanding of the principles of statics. Topics such as resultant of a force, equilibrium of forces, moments, couples, analysis of simple trusses, centroids, center of gravity, moments of inertia and friction are covered in this course. Prerequisite(s): MTH 129
Corequisite(s): PHY 135
Course Offered: Fall, Spring
Credits:

CON 111 Graphics I
To develop student's abilities in lettering, technical sketching, drafting and the use of drafting instruments. The fundamentals of orthographic projection and pictorial drawings develop the student's abilities to visualize and describe objects and structures graphically.
Credits:

CON 121 Graphics II
To continue the development of the graphic skills from Graphics I to include one and two point perspective drawing and the introduction of descriptive geometry. Also included is an extensive use of computer-aided drawing on AutoCad. Prerequisite(s): CON 111
Credits:

CON 161 Materials and Methods of Construction I
An introduction to the engineering properties and the uses of construction materials including soils, concrete, masonry, steel and wood. Classroom testing demonstrations of several materials are included. Conventional construction systems are studied. The student is also given an orientation to the construction industry, the associated professions, and the varieties of employment available. Note: Students cannot get credit for CON 161 and 161W; CON 161W can be used to fulfill the writing intensive requirement which is offered at the discretion of the Architectural/Construction Management Department
Course Offered: Fall, Spring
Credits:

CON 162 Materials and Methods of Construction II
A continuation of CON 161 extended to include the study of architectural properties of selected materials, methods of construction, and building components. Class work includes technical problem solving using quantitative and graphic analysis of specific building construction systems. Prerequisite(s): CON 161
Course Offered: Fall, Spring
Credits:

CON 207 Elements of Strength of Materials
Introduces to the concepts of stress, strain, bending and shear stresses, including elasticity, shear and moment diagrams for beams, moment of inertia of unsymmetrical sections, thermal and combined stresses. Laboratory demonstration of experiments and testing equipment are included. Prerequisite(s): CON 106 or MET 201
Course Offered: Fall, Spring
Credits:

CON 251 Architectural Design I
Drafting standards, techniques and creative design principles related to the field of architecture. Freehand drawing design problems with the development of research notes, preliminary studies and architectural presentation drawings.
Credit:

CON 302 Soils, Foundations and Earth Structure
This course introduces soil mechanics, foundation and earth structure to the engineering technology students. It includes soil classification, soil properties, soil stresses, earth pressures, bearing capacity, slope stability. It also discusses principles of foundation analysis and design, retaining

walls, etc. Laboratory experiments to test behavior of soils included. Prerequisite(s): CON 207 Corequisite(s): CON 302L
Course Offered: Fall, Spring
Credits:

CON 303 Hydraulics
This course provides a broad understanding of the basic principles of engineering hydraulics and hydrology. The emphasis is on application of the theories. It involves basic principle of hydraulics, flow in closed conduits, flow in open channels, hydraulic structures, principles of hydrology, groundwater hydraulics, and related laboratory experiments. Computer application included. Prerequisite(s): CON 207 and PHY 136 Corequisite(s): CON 303L
Course Offered: Fall, Spring
Credits:

CON 350 Introduction to Construction Engineering
This course introduces construction engineering principles and methods and equipment used in heavy and commercial construction. It includes earthmoving excavating, loading and hauling, rock excavation, compressed air and water systems, tunneling, and some selected topics from building construction. Prerequisite(s): CON 162 and CON 207
Course Offered: Fall, Spring
Credits:

CON 355 Construction Management Financial and Accounting Principles
This course covers basic construction financing and cost accounting systems, job costing approaches, project budgeting, financial reporting procedures, forecasting financial needs, time value of money, evaluating investments, construction loans and credit, the impact of taxes and life cycle analysis. Computers applied as required. Prerequisite(s): BUS 109 and Junior level status
Course Offered: Spring
Credits:

CON 357 Quantity Surveying and Costing
This course focuses on fundamentals of quantity survey and costing of residential and commercial facilities. Quantification of materials from construction drawings is covered in this course. Topics also covered range from site work, forms, concrete, metals and masonry, plumbing and electrical to wood framing and steel framing. The course also introduces fundamentals of computer assisted estimating. Prerequisite(s): CON 162
Course Offered: Fall, Spring
Credits:

CON 361 Government Building, Environmental Codes and Regulations
This course studies the concepts in preparation of an environmental impact statement. It also reviews state and local building and land use controls. Attention will be given to governmental regulations required to obtain building permits for particular construction projects. Prerequisite(s): CON 162
Course Offered: Fall, Spring
Credits:

CON 365 Highway Design and Construction
Design criteria for roadways including arterial signalization speed considerations, visual constraints and reaction criteria. Superelevation and spiral curve criteria. Construction quantification, haul considerations and mass curve analysis. Traffic considerations, destination surveys and road saturation criteria. Intersection analysis, striping, signage and lighting. Barriers, types and design considerations. Economic analysis and environmental constraints. Appurtenant structure consideration such as drains, curbing, curb cuts and ramps. Pavement stability. Prerequisite(s): CON 303
Credits:

CON 399 Applied Research Topics
A program of applied research and independent study on topics a faculty member is currently working on. This course is meant to enrich the learning experience by introducing the student to methods and analysis in applied research. This is a fully faculty directed and supervised structured research experience. Applied research work will be presented in an appropriate forum. Prerequisite(s): Associate degree in Construction Technology or third year standing in a Construction Technology program.
Credits:

CON 401W Construction Project Management and Scheduling (Writing Intensive)
This course gives an in-depth introduction and orientation to construction project management. This includes professional construction management in practice and methods in professional construction management. Some of the areas this course will cover are: Bidding and Award, Application of Controls, Scheduling, Planning and Control of Operations and Resources, Procurement Quality Assurance, Safety and Health in Construction, Industrial Relations. Computer Applications included. This is a writing-intensive course. Note: Students cannot get credit for CON 401 and 401W; CON 401W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Construction/Architectural Management Department Prerequisite(s): CON 162 and EGL 101 with a grade of C or higher
Course Offered: Fall
Credits:

CON 402 Civil Engineering Materials
This course covers a study of the materials used for Civil Engineering construction purposes. The materials to be studied are concrete, steel, asphalt and wood. The physical parameters which contribute to material performance are studied. Appropriate laboratory tests are included. Documents from the American Concrete Institute and the American Society of Testing material will be used. Prerequisite(s): CON 162 Corequisite(s): 402L
Course Offered: Fall, Spring
Credits:

CON 405 Advanced Estimating
This course attempts to give the students a broader perspective based on the various roles an estimator may play that requires preparation or interpretation of cost data. It provides an understanding of the importance of accurate estimating in controlling project cost and in determining project budgets. It includes references and examples that cover the wide range of project types. It also covers present computer technology in the field of estimating. Prerequisite(s): CON 357
Credits:

CON 406 Advanced Project Planning and Scheduling
CON 406 Advanced Project Planning and Scheduling. Topics include introduction to advanced project planning concepts and terminology, development of schedule activities and preparing and maintaining computerized schedules. Introduction to Building Information Modeling (BIM). Prerequisite(s): CON 401W
Course Offered: Spring
Credits:

CON 407 Building Commissioning
This course provides various aspects of Building Commissioning process that includes verifying all the subsystems of a building such as HVAC, plumbing, electrical, fire/life safety, building envelopes, lighting etc. Students will develop an understanding of the relationships between new construction and LEED Building Commissioning credits. Laboratory tests on start up and optimization of energy uses of HVAC, Electrical and Plumbing components are included. Prerequisite(s): ARC 263
Credits:

CON 408 Structures
This course introduces fundamentals of structural analysis for beams, trusses, frames, etc. It includes statically determinate as well as indeterminate structures. This course also introduces fundamentals of reinforced concrete design including strength design for beams, columns, footings, and two way slabs. Computer application included. Prerequisite(s): CON 207
Credits:

CON 409 Structural Design
This course introduces fundamentals of structural steel design with basic frame analysis. This includes design of tension members, compression members, beams, columns, and various connections. This course also teaches the basic principles of wood design, which includes formwork design and frame construction. Computer application is included. Prerequisite(s): CON 207
Course Offered: Fall, Spring
Credits:

CON 496 Capstone Project
This is a capstone course. It utilizes skills and knowledge acquired in various courses in the curriculum and general education courses to produce a real-life project. In this course, students follow a faculty driven structured process to integrate various components of a project. This course introduces very little new material, rather it helps the student to synthesize skills and knowledge learned in other courses to apply in real-life situations. Prerequisite(s): Department Approval, Upper Division Status, recommended in the final semester, CON357, ARC 364 and CON401W.
Course Offered: Fall, Spring
Credits:

CON 497 Senior Project I
Part I of a two part capstone course. Involves writing the proposal and researching background for Part II of Senior Project CON 498. It will utilize skills and knowledge acquired in various curriculum and non curriculum courses to solve a real life construction problem. It will involve an independent investigation of a technical problem of interest to both the student and a faculty member who shall act as Project Advisor.
Credit:

CON 498 Senior Project II
Part II of two part capstone course. Involves investigation of proposed problem, including test, analysis, design, etc. along with formal report and presentation to senior project faculty committee. It will utilize skills and knowledge acquired in various curriculum and non curriculum courses to solve a real life construction problem. It will involve an independent investigation of a technical problem of interest to both the student and a faculty member who shall act as Project Advisor.
Credits:

CON 499 Senior Project
This is a capstone course. It will utilize skills and knowledge acquired in various curriculum and non curriculum courses to solve a real life construction problem. It will involve an independent investigation of a technical problem of interest to both the student and a faculty member who shall act as Project Advisor.
Credits:

COMPUTER SECURITY TECHNOLOGY (CPS)

CPS 201 Digital Systems & Security
The course will examine the security threats to digital information, computer systems and networks. Students will learn about the principles of digital systems, including computer architecture and programming, digital information, and techniques to maintain the confidentiality, integrity and availability of information. Topics will include risk assessment, security awareness, security policy, security auditing, and legal and ethical aspects. The course will prepare the students with background knowledge in cryptography, biometrics, software security and network security. Prerequisite(s): EET 105
Course Offered: Fall, Spring, Summer
Credits:

CPS 203 Data Security & Privacy
In this course, students will learn about the security issues with data that relates to personal and organizational privacy. The students will develop the skill to identify and address critical security and privacy issues involved in the design, development and deployment of information systems. Students will be able to design and maintain the security of database containing the confidential information such as Electronic Medical Records and Biometric Data. Topics will also include legal and policy perspectives of privacy in the digital age. Prerequisite(s): CPS 201
Course Offered: Fall, Spring
Credits:

CPS 205 Digital Signal & Image Processing
This course will examine the fundamental concepts of digital signals and image in relation to security applications. Topics will include signal and image characteristics, acquisition, quantization, filtering, enhancement, spectral analyses, feature extraction, segmentation, and morphological transformation. Students will be trained on algorithm and mathematical tools, and practical applications of Digital Signal and Image Processing techniques. The course will also examine the digital video and its applications to security field. Prerequisite(s): CPS 201
Course Offered: Fall, Spring
Credits:

CPS 301 Biometric Recognition
This course will examine the concepts of automated human recognition with anatomical biometrics and behavioral biometrics. It focuses on biometric system design, biometric image and signal processing, biometric sensor technology, and anti-spoofing technology. Students will learn how each biometric works, how to process non-ideal biometric signals and images, and how to choose the right biometrics for different applications. The course also covers the security and privacy issue of biometrics. Prerequisite(s): CPS 205
Course Offered: Fall, Spring
Credits:

CPS 303 Operating System & Security
This course presents the state of the art of OS security to students. It covers OS-level mechanisms, and how they relate to mitigating and defending against malware attacks on computer systems, such as buffer overflow, remote access Trojan, self-propagating worms, large-scale botnets, etc. Basic OS security techniques such as logging, system call auditing, address space randomization, memory protection, virtual machine introspection (VMI) will be discussed. Other techniques, such as host-based intrusion and detection, system randomization, vulnerability fingerprinting, and virtualization, will also be introduced. Prerequisite(s): CPS 201
Course Offered: Fall, Spring
Credits:

CPS 305 Foundations of Cryptography
This course examines the mathematical principles underlying encryption and cryptanalysis. It covers cryptology-related concepts in Number Theory, Group Theory, Linear Algebra, and Probability Theory. It introduces algebraic structures such as groups and fields, and covers fundamental algorithms for integer arithmetic such as primality testing and integer factorization. Upon successful completion, students will have a solid foundation to learn a variety of cryptographic algorithms. Prerequisite(s): (MTH 130 or MTH 150) and CPS 201
Course Offered: Fall, Spring
Credits:

CPS 390 Web Application Security
The amount of data that we entrust to web applications is increasing significantly and therefore, the defenders need to learn how to properly secure web applications from attackers. This course will go through the Open Web Application Security Project (OWASP) top 10 risks, which will properly train a student how to better understand web application vulnerabilities and ensure that they can properly defend an organization's web assets. It will also cover the programming, architecture and strategies as applied to devising a real-world web application. Prerequisite(s): CPS 303
Course Offered: Fall, Spring
Credits:

CPS 401 Applied Cryptography
This course examines the inner workings of modern symmetric and public-key cryptosystems and algorithms, including DES, AES, MD5, SHA-1/2/3, RSA, multi-party computation, and elliptic curve cryptography (ECC), and the constructions of Message Authentication Code (MAC) and Digital Signature (DS). It examines the privacy applications of cryptography supporting anonymous credentials and private database lookup. Lattice-based cryptography will also be examined. Prerequisite(s): CPS 305
Course Offered: Fall, Spring
Credits:

CPS 405 Senior Project
This capstone course will require students to employ the technical knowledge they gathered throughout the curriculum in order to carry out an independent research project on a topic related to computer security technology. Under supervision of a Faculty member, students will produce creative projects, generate research papers, and present their work. Prerequisite(s): CPS 401
Course Offered: Fall, Spring, Summer
Credits:

CPS 460 Network Security
This course will examine the security threats to computer networks and techniques to secure network. Topics will include network components and protocols, access control, firewall, honeypot, intrusion detection, virtual private network, vulnerability assessment, malware propagation, denial of service attacks, investigation of network data, and security protocols. At the conclusion of the course, students will have a full understanding

of security design, network monitoring, and response to network attacks.
Prerequisite(s): CPS 303
Course Offered: Fall, Spring
Credits:

CPS 461 Penetration Testing
This course will cover a broad base of topics in ethical hacking, network defense, and offensive security. It aims to immerse students into an interactive environment where they will learn how to scan, test, and secure information systems. Students will gain in-depth knowledge and practical experience with network systems. By gaining a thorough understanding of how hackers operate, a student will be able to set up strong countermeasures and defensive systems to protect an organization's critical infrastructure and data. The students will discuss the various legal issues associated with the pen-testing and ethical hacking. Prerequisite(s): CPS 460
Course Offered: Fall
Credits:

CPS 462 Smart Grid Security
The course examines the fundamentals of smart power grid and the necessary background in computer security. It covers both cyber security and physical security across operational aspects of smart grid and discusses a variety of secure solutions to the smart grid, including identity management and access control, threat defense, datacenter security, WAN security, security monitoring and management, physical safety and security, generation plant security, substation security, and utility regulatory compliance. Prerequisite(s): CPS 460
Course Offered: Spring
Credits:

CPS 463 Distributed Systems & Security
This course explores the design and implementation of secure distributed systems. The main goal focuses on the techniques for creating functional, usable, scalable, and high-performance distributed systems with security as a built-in factor. It covers the principles and techniques behind the design of distributed systems, such as locking, concurrency, scheduling, remote procedure call and transparency, distributed shared memory, update conflicts, and the security components, such as cryptographic primitives, user authentication, secure-socket layer, imperfect communication and other types of failure, software vulnerabilities and exploits, intrusion detection and prevention. Other topics may be covered including cluster-based IP Router, Onion routing, Distributed systems at Data Center, Cloud computing and Google File System. Prerequisite(s): CPS 303 and CPS 401
Course Offered: Fall
Credits:

CRIMINAL JUSTICE (CRJ)

CRJ 100 Introduction to Criminal Justice
In this introductory course, the roots of the criminal justice system will be explored, along with the specific processes of law enforcement, the courts, and corrections. The understanding of Supreme Court cases will be connected to these areas of the system. Further understanding will be developed in areas of theory, crime elements and crime trends. Current issues in the criminal justice system will also be discussed.
Course Offered: Fall, Spring, Summer
Credits:

CRJ 101 Law Enforcement and Community Relations
This course considers the functions of law enforcement in modern society. Emphasis will be placed on the numerous and complex factors involved in the areas of human relations, including culture and environment. The intricacies of communication, perception, and body language will be a connector to the examination of bias, prejudice and discrimination. Documented law enforcement and community interactions will be examined in relationship to agency policy, the courts and public sentiment.
Course Offered: Fall, Spring, Summer
Credits:

CRJ 102 Juvenile Delinquency and Justice
This course discusses this unique population through theory and the processes of the courts and juvenile justice systems. Juveniles represent a special population within the justice system, with differences in explanations of delinquency and treatment. Methods of rehabilitation and sanctioning will be explored, along with assessment, screening, and referral procedures. The policies and laws that frame the treatment of juveniles will further students' understanding of system behavior.
Course Offered: Fall, Spring, Summer
Credits:

CRJ 105 Corrections in America
This course will discuss the history of the US correctional systems as a series of penal reforms. It will also explore the theoretical principles and critiques that direct and influence correctional policies and practices, past and present. In addition, it will investigate the populations and operations of various correctional institutions and programs: inmates and offices, jails, prisons, and community forms of correction. It will further assess the problems and challenges of current correctional practices: aging populations, mental illness, and HIV/AIDS. Moreover, it will consider the future of corrections in the context of what has been called "a culture of control".
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 115 Computer Forensics
This course will introduce basic concepts of computer and digital hardware and software as they apply to challenges of computer and mobile forensics, including the process of analysis and examination of operating systems and file systems. Students will learn differences in evidence locations and examination techniques on Windows and Linux computers, as well as for common mobile devices. A concise survey of standard forensics tools commonly used in forensics investigations will be presented and reviewed for their latest features and applications. Legal issues governing the collection and handling of digital evidence will be explored.
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 120 Introduction to Lie Detection
This course will explore the concept of lie detection. It examines the science of detecting deceptive behavior, and focuses on how to interpret truthful versus untruthful criminal behavior, including the verbal and non-verbal signals which allow law enforcement and private security professionals to identify wrongdoing during a criminal investigation. It introduces background screening techniques, as well as interview and interrogation techniques, featuring the Reid Method, as well as state of the art technology used to detect untruthfulness. Various techniques for visual and audible identification within this concept will be examined, including voice stress analysis and facial and bodily recognition.
Credits:

CRJ 200 Criminal Investigation
Introduction to criminal investigation, technical methods used at the crime scene; development of clues, identification of suspects; criminal investigation procedures including the theory of an investigation; conduct at crime scenes; collection and preservation of physical evidence, analysis of the elements that constitute all crimes. Note: The course may be offered as a writing intensive course at the discretion of the Criminal Justice Department. Students cannot get credit for both CRJ 200 and CRJ 200W.
Prerequisite(s): CRJ 100
Course Offered: Fall, Spring, Summer
Credits:

CRJ 201 Criminalistics
The role of the Crime Laboratory in the law enforcement organization; scope of a criminalistic operation; organizational orientation of the criminalistics laboratory. Reconstruction of the crime scene through computer animation methods. Prerequisite(s): CRJ 100 and CRJ 200
Course Offered: Fall, Spring
Credits:

CRJ 203 Criminology
This course introduces anthropological, biological, economic, ecological, philosophical, psychiatric, and sociological theories of criminal behavior. The functions of punishment and methods of crime reduction will be connected to theoretical concepts. Crime trends and patterns will be explored through the examination of Uniform Crime Reports, the National Crime Victimization Survey, and local sources. Prerequisite(s): CRJ 100
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 204 Criminal Law
The course introduces students to the criminal law system and its function within the criminal justice system, specifically through the discussion of New York State Penal Law. The course will examine offense types and degrees, as well as the elements of specified offenses, with reference to principal rules of criminal liability. Students will employ the case analysis method to study case precedents. Prerequisite(s): CRJ 100
Course Offered: Fall, Spring
Credits:

CRJ 205 Criminal Procedure Law
This course focuses on the rules of evidence, operation, and policy that make up criminal procedure. Emphasis will be placed on New York Criminal Procedure Law and its rules regarding arrest, force, and search and seizure. Case Tracking tools that are used within prosecution and court units and systems will be discussed, as well as methods of determining trends in practice and rule effectiveness. Students will be able to apply fact patterns to procedure. Prerequisite(s): CRJ 204
Course Offered: Fall, Spring
Credits:

CRJ 211 Law Enforcement Administration
Principles of organization and management in law enforcement and public safety. Analysis of the major problems in police organization and administration. Developing, maintaining and using complex and multiple information systems for crime trends as well as internal organizational operations; use of management control systems and associated computer information analysis and simulation tools for police patrol planning and evaluation. Examination of the role of technology in the police crime prevention function.
Course Offered: Fall, Spring
Credits:

CRJ 217 Computer Forensics II
Computer Forensics II is a continuation of CRJ 115. This course covers topics such as disk geometry and organization. Master boot sector record and volume record creation and organization, file signatures for data type identification, cyclic redundancy checksum for data integrity validation, and RSA's MD5 hash values for file authentication. Other subjects introduced include the UNIX "grep" search utility, search string techniques and file signature matching, and recovery of files that are intentionally deleted, hidden, or renamed. The course examines advanced computer-based evidentiary and "discovery" data methodologies, and includes a study of evidence identification, documentation, and chain of custody procedures. Prerequisite(s): CRJ 115
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 218 Computer Forensics III
This course examines federal, state, and local computer fraud statutes to provide the student with a legal foundation to approach computer investigations. The course includes lecture elements that provide the student with the skills necessary to conduct successful computer-related investigations, and includes an examination of the processes involved in preparing an affidavit for a search warrant. Prerequisite(s): CRJ 217
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 230 Biometrics and Identity Theft
This course will introduce the history of biometrics, physiological/ anatomical biometrics (fingerprint, iris, face hand geometry, DNA, ear, vascular, etc), behavioral biometrics (speech/voice, signature, gait, keyboard typing, human biosignal, etc), biometric sensor technology and anti-spoofing, and soft biometrics. Students will learn how each biometric works, and how and why different biometrics should be chosen for different applications, such as online banking, surveillance and transportation security. It also covers the security and privacy issue of biometrics. The course will provide students with an understanding of the nature and scope of Identity Theft and Computer-Related Fraud. Prerequisite(s): CRJ 115
Course Offered: Fall, Spring, Summer
Credits:

CRJ 300 Forensic Psychology
This course introduces the student to the study of forensic psychology, a discipline that applies psychology to the law and the criminal justice system. Topics to be covered include: the psychologist's role in the criminal courts, ethical dilemmas of psychologists working in the criminal justice system, psychological perspectives on the nature of criminality and the investigation of crime, criminal profiling, the effects of psychological empirical research on the outcome of criminal trials, and the psychology of the police, witnesses, offenders, and victims. Other new research topics in the field, such as the use of brain fingerprinting technology to determine criminal culpability will also be explored. Students completing this course cannot receive credit for PSY 300. Prerequisite(s): CRJ 100 or PSY 101
Course Offered: Fall, Spring, Summer
Credits:

CRJ 307 Criminal Justice Data Base Operations
The course introduces students to the meaning and structure of criminal justice data, the design of and security for criminal, legal and classified databases, the management of competing information security and confidentiality concerns, and the rights to access criminal justice records on the part of the public, corporate interests and the media. The course examines criminal justice data collection throughout the legal lifecycle (complaint, arrest, prosecution, court, corrections, probation and parole); understanding all through the prism of authenticity, value, timeliness, accountability, integration and prevention. Prerequisite(s): CRJ 115
Corequisite(s): CRJ 307L
Course Offered: Fall, Spring, Summer
Credits:

CRJ 308 Forensic Technology
The course will introduce the student to photographic and video equipment and methods that are used for crime scene documentation and police surveillance operations, including forensic imaging analysis. The course will include a study of camera design and operation, lens selection and functions, role of light and illumination technologies, digital image editing software, and a review of the chain of custody procedures in recording and archiving images for courtroom presentation. Prerequisite(s): CRJ 201
Corequisite(s): CRJ 308L
Course Offered: Fall, Spring, Summer
Credits:

CRJ 310 Computer Security I
This course focuses on security threats to an organization's data network such as hackers, intruders, industrial espionage and sabotage, fraud and theft. The components of computer security architecture are studied as well as the principles of security networking protocols, encryption, fault tolerance techniques, and file system protection. Additional topics covered include the protection of computer hardware and software. Prerequisite(s): CRJ 115
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 311 Computer Security II
This course is a continuation of CRJ 310, and includes an analysis of the security features of computer operating systems. The course will review the OSI model and describe how systems communicate with one another. Also included in the course is a detailed study of authentication technologies and how they are used to secure an organization's assets and electronic transactions. Prerequisite(s): CRJ 310
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 312 Computer Security III
The course examines computer software threats which include the birth, life and termination of computer viruses, their modes of operation, detection techniques, virus signatures and virus removal methods as well as other "virus like" threats which are delivered by e-mail and internet/intranet packets. Prerequisite(s): CRJ 311
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 314 Security Law and Policy
This course introduces students to the study of security law and security policies. Topics include crimes and offenses encountered by security personnel, application of criminal, civil and administrative law in the security field, employment liability, workplace violence and legal issues in security services. The course will also discuss the security policy formulation process. Students will learn how to develop security policy by incorporating federal regulatory requirements and business demands. Other topics examined are the National Information Infrastructure Protection Act, the Communications Decency Act, and the Communications Privacy Act. Prerequisite(s): CRJ 100

Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 316 Victimology
This course provides an understanding of the impact of crimes on victims, which is an important part of the dynamics within the criminal justice system. In this upper-level course, students will be expected to evaluate laws and policy that impact victimization. Students will also formulate methods of victimization reduction by using theories of victimization and crime control strategies. Prerequisite(s): CRJ 203
Course Offered: Fall, Spring
Credits:

CRJ 323 Network Defense
This course will discuss the security issues in computer networks and different security mechanisms to protect the secure internal networks and systems. It will involve a study of firewall technologies, including packet filtering, proxying, network address translation, and virtual private networks. An analysis of firewall architectures, such as screening routers, screened hosts, hosts, screened subnets, perimeter networks, and internal firewalls, will be included. It will also discuss the architecture, monitoring strategies, and analysis engines of an intrusion detection system. An analysis of information transformation processes for intrusion detection, such as misuse and anomaly detection, will be covered. Additional topics will include a study of technical issues in intrusion detection such as scalability, interoperability, sensor control, reliability, integration, and user interfaces. Prerequisite(s): CRJ 115
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 325 Fraud Examination
This course covers the field of Fraud Examination and the principles underlying its prevention and detection. The course will examine the historical origins of fraud, the commission of fraud, and how fraud may be detected and deterred. The course will include multiple-case study integration for data analysis. The purpose of this course is to give practical guidance within the area of examining fraud to enhance the student's ability to recognize, identify, and prevent financial deceptions in governmental, public, or private organizations. Prerequisite(s): CRJ 200 with a grade of C or higher.
Credits:

CRJ 350 Courts and the Judiciary
In this course, students will analyze the administration of justice in the United States. Topics include common and statutory law, the policy of stare decisis, constitutional law, due process, court administration, the exclusionary rule, courtroom procedure (the role of the police, prosecutor, defense counsel, judge, grand jury, trial jury), federal courts (federal criminal law, judges, attorney generals, U.S. marshals, and the judicial districts), state courts (types and jurisdiction, relationship to federal courts), and the U.S. Supreme Court (constitutional law, justices, and appellate jurisdiction). Prerequisite(s): CRJ 204 and CRJ 205
Course Offered: Fall, Spring
Credits:

CRJ 354 Police Leadership
This course addresses a wide-range of ethical leadership skills that are applicable to all police ranks. In addition to incident-driven techniques; the course also embraces problem-oriented intelligence-led policing and integrates both ethics, and leadership concepts. Unethical conduct such as abuse of discretion, use of excessive force, discriminatory practices, uncivil conduct, abuse of power, and dishonesty are examined. This course includes development of essential ethical leadership competencies. Prerequisite(s): CRJ 211
Course Offered: Spring
Credits:

CRJ 360 Probation and Parole
This course will explore the history and philosophy of probation and parole in the United States, with an emphasis on the systems of New York State. Topics include an examination of the nature, characteristics, and scope of parole and probation operations, as well as the impact of supervision and alternatives to incarceration on the function of the criminal justice system. Students will assess treatment, rehabilitation, deterrence, and retribution functions and will explore sentencing models. Prerequisite(s): CRJ 105 and Junior level status
Course Offered: Fall, Spring
Credits:

CRJ 370 Patrol Operations
This course focuses on the policies and procedures related to the function of police patrols, including communication issues and community relations. Topics include law enforcement philosophies and theories, community policing, the importance of written and verbal communication in the patrol process, ethical considerations, officer safety, and criminal investigation. Prerequisite(s): CRJ 200
Course Offered: Fall, Spring
Credits:

CRJ 374 Intelligence Operations
This course prepares students to analyze a wide range of data in crime investigations, and includes training in software that is used in the field. Students will apply basic analytical techniques and intelligence training. Topics include sources of information, the information process, general research methods, critical thinking, statistical approaches, crime analysis, data association, inference development, information flow and classification, and telephone and financial analysis. In-class exercises will support additional applied learning topics. Prerequisite(s): CRJ 115 and CRJ 200
Course Offered: Fall, Spring
Credits:

CRJ 380 Homeland Security and Counterterrorism
This course provides an in-depth study of the issues leading to terrorist activities and the multiple approaches to dealing with terrorism in the context of homeland security. Students will examine the fundamental issues behind terrorism and the current responses to this threat. Topics will include the various modes of terrorism, the psychology of terrorism and prominent terrorist groups. In addition, students will evaluate international measures to curb terrorism, and explore the role of police, public and civil sectors, business and media interests in countering terrorist activities, as well as emerging trends in terrorism. Prerequisite(s): CRJ 211
Course Offered: Fall, Spring
Credits:

CRJ 405 Corrections and Reentry
This course explores the important factors in the maintenance and supervision in correctional settings, as well as programs post-release. Students will assess and evaluate the current prison/jail population and extrapolate from the population of formerly incarcerated individuals. Students will examine the current programs to which inmates and supervised individuals are remanded, evaluate their effectiveness, and develop alternatives. This course will cover the constitutional amendments directly connected to corrections, with their ethical underpinnings, and examine the reintegration and supervision of individuals in the community. Prerequisite(s): CRJ 360
Course Offered: Fall, Spring
Credits:

CRJ 406 Crime Analysis and Mapping
Students will learn how to analysis and apply sampled data distributions to crime patterns. Digital tools will allow students to identify trends and patterns in order to determine police service allocations based on collected data The science and foundation principles of geographical information systems design and operation will be reviewed. Homeland Security implications as well as publicly available geospatial information will also be covered as specific applications for mapping techniques. Prerequisite(s): CRJ 307 Corequisite(s): CRJ 406L
Course Offered: Fall, Spring, Summer
Credits:

CRJ 407 Crime Prevention Systems
This course will introduce the student to the theory and practice of crime prevention and examine topics such as the relationship of the built environment to crime, designing out crime, threat assessment, target hardening, and the like. The course will also focus on residential and commercial crime prevention systems. In addition, an analysis of false alarms from the perspective of the environment, end-user errors, and equipment malfunctions will be conducted. The course concludes with a review of police studies that have examined the nature and extent of the false alarm problem as well as the laws that regulate the use of crime prevention systems by public and private agencies. Prerequisite(s): CRJ 406 Corequisite(s): CRJ 407L
Course Offered: Fall, Spring, Summer

Credits:

CRJ 410 Senior Project
Independent study of a Security Systems or related area of interest to both the student and a faculty member who shall act as project Advisor. The project selected will utilize competencies acquired in previous Security Systems and related courses.
Course Offered: Fall, Winter, Spring, Summer
Credits:

CRJ 420 Physical Security I
A study of the theory and practice of managing the movement of people in organizational settings. This lecture course examines the operating principles and applications of access control readers, card encoding technologies, locking assemblies, and system functions such as fail-safe, fail-secure, access levels, time zones, limited and unlimited access privileges, and the like. Also, the course focuses on the role of alarm systems in an organization's overall protection plan, from the control of violence in the workplace to preventing theft of company property. Sensor technologies as well as controls and signaling systems are analyzed and evaluated with applications in the following areas: perimeter, interior, occupant, and object protection. Prerequisite(s): CRJ 323
Course Offered: Fall, Summer
Credits:

CRJ 421 Physical Security II
A continuation of CRJ 420. Advanced topics include a study of camera and lens types, monitors, video signaling systems, scanners, pan and tilt positioning devices, video motion detectors, camera housings and enclosures, switchers, multiplexers, time-lapse VCRs, digital video recorders, and their interactive role in the design of CCTV systems. Analysis of illumination technologies, including fluorescent, high and low pressure sodium, metal halide, ultraviolet and infrared light sources. Other topics include the application philosophy as well as the hardware and software components of video surveillance computers, and the analysis of video field and frame compositions with reference to identification issues in criminal cases. An inquiry into the legal and ethical dimensions of surveillance, including Fourth Amendment guidelines, Plain View Doctrine cases, the Expectation of Privacy court cases and directives, and the Exclusionary Rule. Prerequisite(s): CRJ 420
Course Offered: Summer
Credits:

CRJ 425 Policy and Program Evaluation
This course examines some of the key policies and trends that frame the United States criminal justice system's law enforcement, courts, and corrections departments. Policy and evaluation are central components in the understanding and analysis of criminal justice operations. Students will examine the planning and evaluation of future criminal justice strategies, as well as the dissection of current approaches. Topics to be explored include mass incarceration, prisoner reentry, juvenile justice proceedings, homeland security, human and sex trafficking, and drug use. Prerequisite(s): SOC 366
Course Offered: Fall, Spring
Credits:

CRJ 430 Forensic DNA Analysis
This course will introduce the student to modern molecular biological techniques that are used in a crime laboratory. The student will be taught the theory of forensic DNA testing as well as gain practical forensic field experience. The course will cover background information on body fluid identification, DNA structure and function, analytical of DNA typing. The primary focus will be the molecular biological technique known as short tandem repeats (STR) testing. Other topics covered include sample handling, DNA databanking, results reporting, criminal cases, and case preparation and courtroom presentation. Prerequisite(s): CRJ 201
Corequisite(s): CRJ 430L
Credits:

CRJ 440 Bitcoin and Cryptocurrency
This course introduces the technologies associated with bitcoin and cryptocurrency, including their cryptographic building blocks and security, bitcoin's consensus mechanism, individual components of bitcoin protocol, storage and usage of bitcoin, bitcoin mining, anonymity, community, politics, and regulation, alternative mining puzzles, bitcoin as a platform, altcoins and cryptocurrency ecosystem, and the future of bitcoin. Prerequisite(s): CRJ 311 with a grade of C or higher
Credits:

CRJ 444 Intelligence Analysis
This course explores data-driven analysis of crime and intelligence as an effective method for solving and controlling crime. The course addresses a law enforcement officer's ability to use logic, deductive reasoning, and proven scientific methods to save investigative hours and increase the credibility of investigation. Students will address a wide variety of domestic, regional and transnational intelligence issues. Additionally, students will apply fundamental knowledge of the threat environment facing the intelligence community. Prerequisite(s): CRJ 374
Course Offered: Fall, Spring
Credits:

CRJ 450 Privacy and Equality
This course will focus on the development of civil rights and liberties under the Bill of Rights, the Fourteenth Amendment, and legislative enactments. Students will examine the legal authority for privacy and equality in our governmental system. Topics will include individual liberties, freedom of expression, freedom of religion, due process, the right to privacy, equal treatment and equal protection under the law, and civil liberties in the criminal justice system. Prerequisite(s): CRJ 350
Course Offered: Fall, Spring
Credits:

CRJ 454 Ethics and Leadership in Criminal Justice
This course provides an understanding of the role of integrity in leadership roles throughout the criminal justice system. Students will explore leadership and ethics as applied to police, courts and corrections, with particular emphasis on organizational culture. Students will trace the historical path of leadership and ethics, and the development of current practices. Topics will include solidarity, influence, power and authority, discretion, and communication. Prerequisite(s): CRJ 211 and CRJ 450
Course Offered: Fall, Spring
Credits:

CRJ 458 Criminal Justice Internship
This course will provide seniors in the Criminal in the Criminal Justice Program with the opportunity to apply their coursework and academic experience in the criminal justice field. Students participate in an internship in a local government, non-profit or private agency, with experiences ranging from research to practical. The determination of the placement of the student or the applied learning type will be determined by conversations between the student and the faculty advisor. Prerequisite(s): Senior Status in the Criminal Justice Program
Credits:

CRJ 490 Topics in Criminal Justice
A study of specific applications of Criminal Justice/Security Systems, with emphasis on student participation and written assignments. Critical thinking will be developed and demonstrated through understanding and interpreting the theory and practical concepts presented. Policies and advancements in the criminal justice field will be analyzed according to their advancement of knowledge and tactics used in various types of investigations and analyses. Prerequisite(s): Contingent on selected topic, must consult with department.
Course Offered: Spring
Credits:

COMPUTER SCIENCE (CSC)

CSC 101 Introduction to Computing
Computers have become a part of everyday life across many academic disciplines. In this course, students will acquire a broad knowledge of the computer science and information technology fields. Topics covered will include basic computer concepts, an overview of computational and algorithmic thinking, and an introduction to using computers to solve real-world problems. After completing this course, students will be prepared to apply computer concepts to other fields.
Credits:

CSC 111 Computer Programming I
This is an introductory programming course. Students will be taught basic concepts of computer programming and problem solving using an object-oriented language. Selection, repetition, methods, classes, and arrays will be covered. Note: CSC 101 is recommended as a prerequisite, but not required for this course. Students cannot get credit for BCS 230 and CSC 211.
Credits:

DENTAL HYGIENE (DEN)

DEN 015 Skills Refresher Course
This course is designed to assist students in maintaining their clinical skills following a break in their clinical sequence. Demonstration of clinical competency prior to re-entering the clinical sequence is necessary to ensure proper patient treatment. Additionally students who have not acquired sufficient clinical skills in their clinical course work will have the opportunity to remediate in this course.
Course Offered: Fall, Spring
Credits:

DEN 102 Dental Materials and Expanded Functions
This course is concerned with the study of dental materials that are employed in dentistry for the fabrication of dental appliances and tooth restorations. It will provide the student with a basic understanding of the various procedures, materials, and devices commonly used in dental practice. Emphasis will be placed on the physical and chemical properties of dental materials and how these properties affect the care and manipulation of the materials. Basic laboratory techniques, as well as expanded functions, will be performed in the lab. Spring. Prerequisite(s): DEN 105
Corequisite(s): DEN 102L
Course Offered: Spring
Credits:

DEN 105 Dental and Oral Anatomy
The study of the anatomy of the oral, facial complex and the morphology of the dentitions. Emphasis is placed on technical dental terminology as well as occlusion. This course includes a co-requisite laboratory designed to provide experience in mastering tooth morphology and occlusion. Prerequisite(s): Admission to the Dental Hygiene Program. EGL 101, CHM 124 (or High School Chemistry/Lab) and BIO 166, all with a minimum grade of C Corequisite(s): DEN 105L
Course Offered: Fall
Credits:

DEN 106 Oral Radiology I
This course acquaints the student with the nature of ionizing radiation, the history of x-rays, and their production and properties. The theory and practice of exposing, processing, mounting, and analyzing dental radiographs and digital images are covered as well as radiation dosage, radiation hazards, and protective devices for patient and operator. Emphasis is placed on the identification of anatomic landmarks and the differentiation of these from conditions which indicate abnormality or disease. This course includes a co-requisite laboratory which includes two hours per week of laboratory activity. Prerequisite(s): DEN 105, with a minimum grade of C or higher. Corequisite(s): DEN 106L
Course Offered: Spring
Credits:

DEN 108 Oral Histology and Embryology
This course reviews basic histological tissues. Microscopic structures of the oral tissues are studied and include the hard palate, soft palate, tongue, lips, salivary glands and tonsils. Emphasis is on the development of the face, the oral cavity and, in specific, the tooth and its surrounding tissues. Spring. Prerequisite(s): DEN 105
Course Offered: Spring
Credits:

DEN 110 Preventive Oral Health Concepts I
This course is an introduction to the study of dental hygiene. It includes an overview of the dental hygiene profession to include current and future roles of the dental hygienist. Special emphasis is placed on the hygienist as periodontal co-therapist, the responsibility of the dental hygienist to the profession and the development and strengthening of values that pertain to the profession of dental hygiene. Other topics to be covered include: infection control procedures, disease transmission, the etiology and role of dental biofilm and calculus, biofilm control strategies, the importance of medical histories, medical emergencies, and planning implications for the medically compromised patient. Corequisite(s): DEN 105, 105L, 115
Course Offered: Fall
Credits:

DEN 115 Clinical Dental Hygiene I
This is a clinical course in the practical application of dental hygiene techniques with supplemental discussions related to the clinical practice of the dental hygienist. Emphasis is placed on proper patient and operator positioning, the use of dental equipment, maintenance of an aseptic environment, patient assessment procedures, and instrumentation principles and techniques. Corequisite(s): DEN 105, 105L and 110
Course Offered: Fall
Credits:

DEN 126 Periodontology
A basic understanding of the principles and concepts associated with periodontology, including a detailed study of the periodontal tissues in both health and disease. Special emphasis is placed on the role of the dental hygienist as a periodontal co-therapist in the development of skills necessary to provide initial non-surgical and supportive periodontal therapy within the framework of a comprehensive dental hygiene care plan. Spring. Prerequisite(s): DEN 105,110, 115 and BIO 220
Course Offered: Spring
Credits:

DEN 201 Pain Management
This course is designed to provide an in depth study of anesthesia and pain control as it is used in Dentistry. The mechanism of actions of anesthetic agents as well as other methods of pain control will be studied, demonstrated, and practiced. This course has a co-requisite laboratory that allows students the opportunity to practice the administration of local anesthesia. Prerequisite(s): DEN 102, 105, 106, 120, 126, 220 and 225 all with a grade of C or higher
Course Offered: Fall
Credits:

DEN 203 Principles of Nutrition for Oral Health Professionals
This course is designed to educate the dental hygiene student in basic principles of nutrition, metabolism and digestion. There is an emphasis on the biochemical function of carbohydrates, protein, lipids, vitamins, and minerals as they relate to health and wellness, nutrition and disease, energy balance, eating disorders, and the oral manifestations of nutritional deficiency. Nutrition labeling, nutrition guidelines and dietary analysis of a client's diet and review of pertinent nutrition literature is essential to the dental hygiene process of care and therefore, is an important component to the scope of this course's requirements. Fall. Prerequisite(s): CHM 124 (or High School Chemistry/Lab)
Course Offered: Fall
Credits:

DEN 205 Oral Pathology
The study of the fundamentals of microscopic and gross pathology. Discussion of general pathologic processes with emphasis on pathology of the oral, dental, and periodontal tissues and their etiology and prevention. Fall. Prerequisite(s): BIO 166 Minimum Grade: C and BIO 220 Minimum Grade: C and DEN 220 and 225
Course Offered: Fall
Credits:

DEN 207 Oral Radiology II
Laboratory activities and experiences are designed to provide students with further practice in developing skills with intra-oral radiographic techniques. In addition, students will learn supplemental techniques that are not limited to, but include occlusal, extra-oral, digital, panoramic and specialized patients. Interpretations of radiographs will be emphasized, with integration of the role radiographs play in the dental hygiene diagnosis and treatment planning. Fall. Prerequisite(s): DEN 106
Course Offered: Fall
Credit:

DEN 212 Pharmacology
This course is designed to educate the dental hygiene student in the principles of pharmacology as they pertain to dentistry. In particular, the student will be taught the basics of organic compound structure, classification and nomenclature by the IUPAC system. The course will cover prescription writing, drug uptake, synthesis and elimination by the body, and the Krebs Cycle. Drugs studied will include, opioids, non-opioids, anti-infective agents, local and general anesthetics, anti-anxiety and psychotherapeutic agents, autonomic drugs, cardiovascular drugs, corticosteroids, hormones, histamines and fluoride. Students will learn how to think critically about a patient's health history and how the patient's medications may affect or be affected by dental office procedures. Prerequisite(s): CHM 124 (or High School Chemistry/Lab), BIO 166, 220 and DEN 220, 225
Course Offered: Fall

Credits:

DEN 220 Preventive Oral Health Concepts II
This course is a continuation of the study of Dental Hygiene. This course includes a detailed study of such preventive dental hygiene techniques as fluorides, nutritional counseling, patient motivation and management, oral physiotherapy techniques. Also covered are discussions on dental hygiene care planning, dental biofilm, calculus, caries, dental products, desensitization, periodontal and restorative charting. A research paper on an aspect of preventive dentistry will be expected from each student. Spring Prerequisite(s): DEN 105, DEN 110, DEN 115 Corequisite(s): DEN 225
Course Offered: Spring
Credits:

DEN 221 Community Oral Health I
This course is an introduction to the concepts and core principles of community oral health and provides the student with an orientation to the role of the dental hygienist as educator, resource person and consumer advocate in the field of dental public health. An introduction to epidemiology and research principles will promote a better understanding of scientific literature. In addition, the student will develop the skills necessary to assess various target populations and select educational strategies that will effectively provide culturally appropriate oral health education programs. Fall Prerequisite(s): DEN 110 and 115
Course Offered: Fall
Credits:

DEN 222 Community Oral Health II
This course is a continuation of the study of Community Oral Health I. Public health concepts, theories and their application at the federal, state and local levels will be explored. In addition, students will develop the skills necessary to complete a community oral health needs assessment. Participation in public health education projects is required. Spring Prerequisite(s): DEN 221W
Course Offered: Spring
Credits:

DEN 225 Clinical Dental Hygiene II
A continuation of the practical applications of dental hygiene techniques with supplemental lectures and discussions related to the clinical practice of the dental hygienist. Spring Prerequisite(s): DEN 105, DEN 110, DEN 115 Corequisite(s): DEN 220
Course Offered: Spring
Credits:

DEN 230 Preventive Oral Health Concepts III
This course is a continuation of the development, assessment and evaluation of dental hygiene practice and knowledge through a variety of classroom techniques. Values' clarification, new advancements/ technology, and current preventive methods will be discussed. Preventive oral health techniques and treatment care in association with special needs patients will be emphasized. It is intended that the student will utilize this information to assist him or her clinically to develop a patient specific protocol and comprehensive treatment plan for the child, adolescent, adult, geriatric and medically compromised patient. Fall Prerequisite(s): DEN 220, 225 and BIO 220 Corequisite(s): DEN 235
Course Offered: Fall
Credits:

DEN 235 Clinical Dental Hygiene III
A continuation of the development of and application of dental hygiene skills and knowledge through clinical practice in hospitals and clinics both on and off campus. Clinical participation with new innovations, and current preventive techniques in the practice of dental hygiene and application of the expanded roles of the dental hygienist will be emphasized. Fall Prerequisite(s): DEN 220, 225 and BIO 220 Corequisite(s): DEN 230
Course Offered: Fall
Credits:

DEN 240 Dental Practice Management, Ethics and Jurisprudence
Through a variety of classroom techniques, the development assessment and evaluation of dental hygiene practice will be continued. Lectures and discussions will focus on current issues in dental hygiene including ethics, jurisprudence, dental law, practice management and alternative practice settings. Presentations will be held on resume writing and role playing for job interviewing. Spring Prerequisite(s): DEN 230, 235 Corequisite(s): DEN 245
Course Offered: Spring
Credits:

DEN 245 Clinical Dental Hygiene IV
A continuation of the development of and application of dental hygiene skills and knowledge through clinical practice in hospitals and clinics both on and off campus. Clinical participation with new innovations and current preventive techniques in the practice of dental hygiene and application of the expanded roles of the dental hygienist will be emphasized as well as dental practice management concepts. Spring Prerequisite(s): DEN 201, 230, 235 Corequisite(s): DEN 240
Course Offered: Spring
Credits:

DEN 301W Current Issues in Dental Hygiene (Writing Intensive)
This course is designed to provide an overview of the current issues facing oral health care professionals as they approach the new millennium. The course will cover topics ranging from the changing role of the dental hygienist and the policies needed to support the American Dental Hygienists' Association's strategic goals, to information on trends in population demographics, self regulation/independent practice for the registered hygienist, along with government and managed care's alliance with political, economic, technological influences and its effect on the profession of dental hygiene. The course will also review the professional code of ethics and standards for dental hygienists along with gender as an issue. This is a writing intensive course. Fall Note: DEN 301W can be used to fulfill the writing intensive requirement. Prerequisite(s): Associate degree in Dental Hygiene and EGL 101 with a C or higher
Credits:

DEN 302 Principles of Dental Anesthesia
This course is designed to provide an in depth study of anesthesia and pain management through the use of local anesthetic agents and the administration of nitrous oxide and oxygen sedation. The mechanism of actions of anesthetic agents as well as indications and contraindications for use, and the treatment of complications and emergencies are stressed. Other methods of pain control will be discussed through research and presentations. This course meets the New York State Education's Department's requirements for certification in the administration and monitoring of local infiltration anesthesia and nitrous oxide analgesia in the practice of dental hygiene. This course has a co-requisite laboratory that allows students the opportunity to practice efficient techniques of pain management through local anesthesia on clinical partners under the direct supervision of clinical faculty. Prerequisite(s): DEN 102, DEN 105, DEN 106, DEN 126, DEN 212, DEN 220, and DEN 225 with a grade of C or higher. Corequisite(s): DEN 302L
Course Offered: Spring
Credits:

DEN 303 Practice Management for Quality Assurance
This course will involve students with concerns related to practice management. Emphasis will be placed on assuring quality care while focusing on the principles and concepts of a client-centered practice environment in our evolving health delivery system. Economics for the practice, office management, comprehensive care plans, and the use of new technology will be explored to support the practice goals. Fall Prerequisite(s): Associate Degree in Dental Hygiene
Course Offered: Fall, Spring
Credits:

DEN 309 Oral Epidemiology in Public Health
Oral epidemiology in public health will explore the distribution and determinants of oral health-related conditions such as dental caries, periodontal disease, and oral cancer in specified populations. An in depth view on the uses of epidemiology, as it relates to the health of the public, will enable the student to document oral health needs, evaluate existing oral health programs and interventions. Students will be introduced to the role of oral epidemiology in controlling oral health problems in the community. Fall. Prerequisite(s): Associate Degree in Dental Hygiene.
Course Offered: Fall, Spring
Credits:

DEN 310 Teaching Strategies for Health Care Educators
The Principles of education, teaching, methodology, and instructional design utilized by health care educators in schools, community outreach, hospitals, other skilled nursing facilities, and/or higher education institutions are covered in this course. Topics include performance

objectives, competencies, lesson planning, syllabi construction, analysis, and formative evaluation of instruction; traditional and non-traditional teaching methodologies; academic course development; current issues in dental health and dental hygiene education. Spring Prerequisite(s): DEN 220 or Associate Degree in Dental Hygiene.
Course Offered: Fall, Spring
Credits:

DEN 322 Dental Public Health Planning
This course will provide the students with the concepts of dental public health. These principles include health literacy, oral epidemiology, and methods used to measure dental disease in a given population. Emphasis will be placed on the process of program assessment, planning, implementation, and evaluation to design an intervention program to improve oral health in the community. Evidence-based prevention and research principles will be explored. In addition, students will be involved in statistical analyses that will prepare them to become patient advocates and resource persons in the dental public health setting. Prerequisite(s): DEN 310 with a grade of C or higher.
Course Offered: Spring
Credits:

DEN 330 Essentials of Clinical Practice Theory
This course is designed to increase the knowledge of dental hygiene practice. It is a continuation of the development, and assessment of the dental hygiene process of care. This course combines the integration of theory with clinical experience in a variety of oral hygiene preventive and therapeutic procedures. New advancements in patient care as well as the introduction of new technology and current preventive methods will be analyzed and discussed. Students will apply the knowledge gained and utilize the information to develop patient specific protocols and comprehensive treatment plans in the provision of care for the child, adolescent, adult, geriatric and special needs patient. Prerequisite(s): DEN 220, DEN 225, BIO 220T with a grade of C or higher Corequisite(s): DEN 335
Course Offered: Fall
Credits:

DEN 335 Essentials of Clinical Practice I
This clinical course is designed to build on the foundational knowledge of dental hygiene care. There is a concentration on the development of clinical skills through the application and delivery of oral health services. A case based approach is implemented, with emphasis on dental hygiene concepts, to foster critical thinking and problem solving abilities. Clinical experiences focus on advanced instrumentation techniques and innovative advancements that include diagnostic, therapeutic and treatment technologies. Prerequisite(s): DEN 126, DEN 220, DEN 225 and BIO 220 with a grade of C or higher. Corequisite(s): DEN 330
Course Offered: Fall
Credits:

DEN 340 Dental Hygiene Law & Practice Management
This course will focus on the professional responsibility of dental hygienists. Emphasis will be placed on dental law, the professional code of ethics, core values, and standards. Situations focusing on integrity and ethical decision making will be highlighted. Additionally, topics ranging from non-traditional career paths, the changing role of the dental hygienist in alternative practice opportunities including self-regulation and independent practice will be reviewed. Relevant aspects of the political and economic influences of managed care and its impact on the profession of dental hygiene will be discussed. Prerequisite(s): DEN 302, DEN 330, DEN 335, and BIO 220 with a grade of C or higher. Corequisite(s): DEN 345
Course Offered: Spring
Credits:

DEN 345 Essentials of Clin Practice II
This course is a continuation of the development and application of dental hygiene skills and knowledge through clinical practice in hospitals and clinics both on and off campus. Clinical participation with new innovations and current preventive techniques in the practice of dental hygiene and application of the expanded roles of the dental hygienist will be emphasized. Prerequisite(s): DEN 302, DEN 330, DEN 335
Course Offered: Spring
Credits:

DEN 401W Health Science Research: Principles and Methods (Writing Intensive)
A profession seeking to enhance its professional stature strives for the continual development of a scientific body of knowledge fundamental to its practice. Dental hygiene research involves a systematic search for knowledge about issues of importance to the dental hygiene profession. This course is designed to develop skills in scientific research. Emphasis is placed on the research process which includes problem identification, hypothesis writing, research design data collection, and data analysis and data interpretation. This is a writing-intensive course. Fall Note: DEN 401W can be used to fulfill the writing intensive requirement. Prerequisite(s): Associate Degree in Dental Hygiene and MTH 110 or EGL101 with a C or higher and DEN 220 and DEN 322
Course Offered: Fall, Spring
Credits:

DEN 402 Gerontology
Gerontology is the study of aging. This course is designed to promote an understanding of the social, psychological, and biological aspects of the aging process and the relationship to health. The course will examine current theories of aging, demographic profiles of the older adult population, and the increased incidence of oral health problems as we age. Close examination of the aging process will enable the student to gain insight into the fastest growing portion of our population and recognize the needs of the elderly and the concerns of the 77 million baby boomers coming of age. Spring Prerequisite(s): Associate Degree in Dental Hygiene or DEN 220, DEN 322 and DEN 330.
Course Offered: Spring
Credits:

DEN 406W Proposals and Grant Management for Health Programs (Writing Intensive)
This course will introduce the student to the fundamentals of proposal writing and researching grant funding sources. Students will demonstrate the preparation of supporting documentation of need, implementation, evaluation, and budgeting. The culminating project of the course will be assembling the segments of a program proposal or grant application into a final document that is worthy of submission. This is a writing-intensive course. Spring Note: DEN 406W can be used to fulfill the writing intensive requirement. Prerequisite(s): Associate Degree in Dental Hygiene and EGL 101 with a C or higher and DEN 309 or DEN 322
Course Offered: Fall, Spring
Credits:

DEN 407 Dental Hygiene Practicum Seminar
This course is designed as a pre-requisite to DEN 409 Dental Hygiene Practicum. Students will have the opportunity to research and explore areas of special interest for their field placement practicum experience. Fall Prerequisite(s): Associate Degree in Dental Hygiene. Completion of at least 4 of the core DEN courses, or permission of the Department.
Course Offered: Fall
Credit:

DEN 409 Dental Hygiene Practicum
This course provides a foundational experience and will involve students in a 40-hour self-directed practicum that is multidimensional in its scope. The specialized areas of interest are expanded to include, but are not limited to, education, research, corporate/business, health care delivery systems, and specialized practice interests. Spring. Prerequisite(s): Associate Degree in Dental Hygiene and DEN 407, with a minimum grade of C or higher.
Course Offered: Spring
Credits:

DEN 410 Dental Hygiene Study Abroad
Bachelor degree Dental Hygiene students are afforded the opportunity to expand their international perspective of the profession. The course explores the health care delivery system and practices of dental hygiene. Students will experience the role of the Dental Hygienist in various practice settings, develop a deeper understanding of the profession, participate in research investigations and explore areas of interest. Prerequisite(s): Associate Degree in Dental Hygiene, Permission of the Department.
Credits:

DEN 430 Senior Seminar I
This course will enable students to explore the role of the dental hygienist in a multidisciplinary setting while examining the principles of leadership and professional development. The course will provide information on

leadership styles, qualities, traits, and virtues, mentoring, advocacy, self-reflection, and team approach healthcare. In addition, the students will identify their leadership strengths and behavioral profile. The course will encourage students to consider opportunities for professional development and team based collaborative healthcare relative to dental hygiene. Prerequisite(s): DEN 340 and DEN 345 with a grade of C or higher. Corequisite(s): DEN 435 Credit: 1
Course Offered: Fall
Credit:

DEN 435 Advanced Dental Hygiene Practice I
This course will provide students the opportunity to advance their instrumentation and patient management skills through the participation in a dental hygiene residency program at various health care settings. Additionally, this course will emphasize the treatment of the periodontally involved patient including assessment, treatment planning, implementation of care and maintenance. Students will apply the concepts of peer evaluation and interprofessional education to prepare them for the demands of treating the more complicated patient in today's healthcare environment. Time management skills will be enhanced in order to prepare students for demanding patient schedules in the workplace. Prerequisite(s): DEN 340 and DEN 345 with a grade of C or higher. Corequisite(s): DEN 430
Course Offered: Fall
Credits:

DEN 440 Senior Seminar II
This course will allow students to master the concepts of dental hygiene production in a dental healthcare setting. Students will investigate alternative practice settings and the emerging roles of the dental hygienist. Additionally, students will examine the role of financial planning, maximizing resources and career management, in order to gain the necessary skills for a successful dental healthcare practice. Prerequisite(s): DEN 430 and DEN 435 with a grade of C or higher. Corequisite(s): DEN 445
Credit: 1
Course Offered: Spring
Credit:

DEN 445 Advanced Dental Hygiene Practice II
This course is a continuation of Advanced Dental Hygiene Practice I. This capstone course will require students to present case studies utilizing advanced dental hygiene practice skills. Additionally, students will spend time in a healthcare facility dental hygiene residency program. Students will also provide care to patients in the Dental Hygiene Care Center at Gleeson Hall. Prerequisite(s): DEN 430 and DEN 435 with a grade of C or higher. Corequisite(s): DEN 440
Course Offered: Spring
Credits:

ECONOMICS (ECO)

ECO 110 Introduction to Personal Finance
Students will learn how to navigate the financial decisions they must face and how to make informed decisions related to budgeting, banking, credit, insurance, spending, taxes, saving, investing, inheritance, and living independently. The course will develop financial literacy skills, an understanding of economic principles, and will provide a basis for responsible citizenship and career success.
Course Offered: Fall, Summer
Credits:

ECO 120 The Global Economy
This course provides an overview of current global economic issues. Basic economic concepts are introduced in order to explain differences in the level of development among countries, the direction of trade, the causes and effects of international financial crises, and the motivations of some countries to transition to a market economy. The course also discusses the way in which countries coordinate efforts to deal with matters of international concern such as pollution and global warming. Topics also include the role of international institutions including the World Bank, the international Monetary Fund, the World Trade Organization, and the United Nations.
Course Offered: Fall
Credits:

ECO 156 Principles of Economics (Macroeconomics)
This course is designed to introduce classic macroeconomic issues such as unemployment, inflation, national income and economic growth. The course will provide a unified framework to address these issues and to study the impact of different policies, such as monetary and fiscal policies, on the aggregate behavior of the economy. Analytical tools will be used to understand the experiences of the United States and other countries, and to address how current policy initiatives affect their macroeconomic performance.
Course Offered: Fall, Winter, Spring, Summer
Credits:

ECO 157 Principles of Economics (Microeconomics)
This course introduces students to fundamental economic concepts and theory, including demand, supply, and the formation of equilibrium prices in product and resource markets. Students will learn a specific set of analytical tools as well as how to apply them to current policy issues. In addition, the course offers an introduction to applied fields such as industrial organization (market structures), labor economics, international trade, and market failure.
Course Offered: Fall, Winter, Spring, Summer
Credits:

ECO 205 Introduction to Social Science Modeling
This course introduces students to the technique of social science modeling by learning and applying a variety of different models of individual and social behavior. It will use basic concepts in probability and simple economic models (including, but not limited to, supply and demand, two-person prisoners' dilemma, and indifference curves) to understand issues such as competition, purchasing/investment decisions, risk-taking and risk-avoiding behavior, diversity, and collective action. This course is designed for all students interested in getting a deeper exposure to economics than is available at the 100 level, and economics majors preparing to take more advanced classes in economics. Prerequisite(s): ECO 156 or ECO 157
Credits:

ECO 250 Quantitative Analysis for Economics
This course introduces students to basic mathematical techniques used in economic analysis. It applies differential calculus and linear algebra to economic analysis. Topics include: functions, equations in economics, constrained optimization, partial differentiation, and linear algebra. Prerequisite(s): ECO 156 or ECO 157 and (MTH 117 or MTH 129) Corequisite(s): MTH 117 or MTH 129 (to be taken before ECO 250 or simultaneously)
Course Offered: Fall, Summer
Credits:

ECO 255 Money and Banking
A description of American central banking, the structure and development of commercial banks and non-bank financial intermediaries, the nation's money and capital markets, bank regulation and supervision, monetary theory and its policy implications, and the operation of the system in international payments. Prerequisite(s): ECO 156
Course Offered: Fall, Spring, Summer
Credits:

ECO 259 Contemporary Economic Issues and Problems
Explores and analyzes the problems and issues of inflation, unemployment, and the necessity of urban renewal, the growth of corporate conglomerates, and the social and political ramifications in the world's money markets, together with the reasons giving rise to these occurrences. Prerequisite(s): ECO 156
Course Offered: Summer
Credits:

ECO 260 Intermediate Microeconomics
This course provides students with a critical examination and introduction to the analysis of markets, demand theory, production, theory of the firm, market structure, general equilibrium and welfare analysis, and introductory game theory. The course introduces students to introductory modeling and mathematical methods used in microeconomics to model and estimate demand relationships, production functions, market behavior, and risk and uncertainty. Prerequisite(s): ECO 157 and (MTH 117 or 129)
Course Offered: Fall
Credits:

ECO 262 Managerial Economics
This course introduces students to the use of economic methods for managerial decision-making. The focus of the course is on the practical application of economic techniques to business problems, including:

the theory of the firm, demand estimation, production functions, cost estimation, market structure, pricing strategy, and game theory. Note: Students completing this course may not receive credit for ECO 260
Prerequisite(s): ECO 157 and (MTH 117 or 129)
Course Offered: Fall, Spring
Credits:

ECO 270 Intermediate Macroeconomics
Study of aggregate economic analysis. With attention to the determination of the level of income, employment, and inflation (IS-LM); Fiscal and monetary stabilization policies critically examines both theories, and the policies associate with them; the macroeconomic implications of fixed and flexible exchange rates in the presence of international capital mobility supply-sided economics. Prerequisite(s): ECO 156 and (MTH 117 or MTH 129)
Course Offered: Fall, Spring, Summer
Credits:

ECO 303 Arts and Entertainment Economics
An analysis and in-depth study of the economics and economic impact of the arts and entertainment activities. Topics include arts demand and supply, live performing and cultural arts, profit and non-profit entertainment industries, music and film industry (recorded arts) arts venues, museums, and performing arts centers and economic models of nonprofit cultural organizations. Prerequisite(s): ECO 156 and ECO 157
Course Offered: Summer
Credits:

ECO 304 Sports Economics
An analysis and in-depth study of the economics and economic impact of professional and amateur sports. Topics include team and league structures, labor relations, stadium financing, consumer demand for sports, and the role and impact of public and private subsidies. The student should be able to: identify and explain the economic principles and problems associated with sports team ownership, stadium economics, as well as the impact and effects of radio and television broadcast rights on sports economics. Prerequisite(s): ECO 156 or ECO 157
Course Offered: Fall, Winter, Spring, Summer
Credits:

ECO 305 Real Estate Economics &Finance
This course is designed to provide students with an introduction to the analysis of investment in real estate markets and to real estate finance. The class will consider both housing and mortgage markets, as well as public policies that affect these markets. An important segment of the course will be training in the analysis of mortgage instruments used to finance investments in real estate. This will include calculating payment streams for different types of mortgages, consideration of different types of mortgage contracts that shift interest rate and default risk between lenders and borrowers, and the role of the secondary market for mortgage securities. Prerequisite(s): (ECO 156 or ECO 157) and (MTH 110 or MTH 117 or MTH 129 or ECO 250)
Credits:

ECO 310 Health Economics and Policy
The aim of this course is to introduce students to the application of economic thinking to the analysis of health policy and health systems. Specifically, we will survey the organization, financing and delivery of health services, the economic evaluation of alternative methods of providing health care, priority setting and resource allocation and the health behaviors of individuals. Prerequisite(s): ECO 156 or ECO 157 and junior level status
Course Offered: Fall
Credits:

ECO 312 Economics of Non-Profit Organizations
This course provides an overview of the regulatory and legal constraints that nonprofit organizations face in the global economy. Students will analyze the strategies nonprofits use in adapting to fluctuating economic and political circumstances. The course will focus on the development of national, international, and transnational nonprofit organizations and the challenges embedded in the regions and industries in which they operate. Prerequisite(s): ECO 156 or ECO 157 and junior level status
Credits:

ECO 315 The Government and the Economy
The course provides an overview of the role and organization of the government in the economy, with specific applications to the United States and other countries around the world. The course discusses the conditions under which government intervention in the economy is desirable, and covers both the tax revenue side and the expenditure side of the government budget. Specific topics include externalities, public goods, redistributive tax and expenditure policies, and the assignment of responsibilities among different levels of government. Prerequisite(s): (ECO 156 or ECO 157) and Junior Level Status
Credits:

ECO 320 Internet and Network Economics
A study of the economic structure and growth of the modern economy focusing on the effect and impact of emerging technologies on industry, employment, financial markets and market structure. Prerequisite(s): ECO 156 or ECO 157
Course Offered: Fall, Winter, Spring, Summer
Credits:

ECO 321 Engineering Economics
This course will provide students with a basic understanding of the economic aspects of engineering in terms of the evaluation of engineering proposals with respect to their worth and cost. Topics include: introduction to Engineering Economics; interest and interest formulas; equivalence and equivalence calculations; evaluation of replacement alternatives and operational activities; basic fundamentals of cost accounting. Prerequisite(s): Admission to a Tech Program or approval of this Department chair.
Course Offered: Fall, Spring, Summer
Credits:

ECO 330 Modern Economic Thought
The purpose of this course is to study the most important economic theories of the recent past in order to gain a better understanding, not only of these earlier economic theories, but also of the nature of economic theory in general and of the strengths and weaknesses of modern micro and macro-economics and policymaking. We will study the major schools of Modern Economic Thought -Neo-Classical, Austrian, Keynesian, Monetarist, etc. We will examine these theories to trace the long term thought on economic problems like value theory, money and inflation, free trade, macro- economics stability, etc. Prerequisite(s): ECO 156 and ECO 157
Course Offered: Fall, Spring, Summer
Credits:

ECO 340 International Trade
First of a two semester offering to provide a comprehensive exposition of the theory and principles of international trade, the importance of international trade in interdependent economics, and a knowledge of international trade institutions and how they relate to U.S. commercial policy. The material will employ an analytical as well as historical and institutional approach. Prerequisite(s): ECO 156 or ECO 157
Course Offered: Fall, Summer
Credits:

ECO 341 International Finance
Second half of a two semester offering to provide theoretical and practical knowledge of international finance, its relationships to financial markets, and the international monetary system as it relates to the U.S. economy. The course work will focus on balance of payments, foreign exchange markets and the international monetary system. Prerequisite(s): ECO 156 or ECO 157
Course Offered: Fall, Spring, Summer
Credits:

ECO 342 Financial Economics
This course introduces students to the basic mathematical models, techniques and forms of analysis used in financial economic analysis. Topics covered include uncertainty and financial decision-making, mean-variance model of portfolio selection, Black-Scholes option pricing formula, utility functions, computational techniques and stochastic volatility. Prerequisite(s): ECO 156 or ECO 157
Course Offered: Summer
Credits:

ECO 350 Economics of Global Disasters
This course focuses on the inter-relationship between natural and manmade hazards and disasters and the economy. Disasters within the economic and sociology literature arise when an event impacts the physical, social and economic infrastructure beyond its normal absorptive capacity. Topics covered and examined include natural hazards and their effects on regional development, manmade disasters, methods of hazard analysis, impact estimation techniques, and disaster planning and mitigation, public policy and issues. Prerequisite(s): ECO 156 and ECO 157
Course Offered: Summer
Credits:

ECO 358 Economics of Labor
Economics of Labor explores how individuals enhance their economic well-being through their work behavior and examines the role of labor markets in explaining disparities of wealth. Topics include the static labor market and its internal structure, the composition of the labor force, the nature of a job search, the life cycle human capital model, determination and classification of wages and wage structure, the American labor movement and the role of labor unions. Prerequisite(s): ECO 156 or ECO 157
Course Offered: Fall, Summer
Credits:

ECO 360 Introduction to Experimental Economics
This course will introduce students to the intersection of two research programs: behavioral economics and analytic game theory. Students will leave this class able to make predictions using game theory and will understand how bounded rationality affects those predictions. Prerequisite(s): ECO 156 or ECO 157
Course Offered: Fall, Summer
Credits:

ECO 372 Eco of Games & Strat w Bus App
This course is an overview of strategic interaction presented in the context of game theory. The course will prepare students for analyzing and solving problems where the outcome of an interaction depends directly on the decisions of all the individuals involved. After developing the analytical tools required to understand strategic interactions, students will apply these tools to problems in business management related to marketing, managerial decision-making, business law, pricing strategy, and the dynamics of competition. Prerequisite(s): ECO 157 and (MTH 116 or MTH 117 or MTH 129 or ECO 250) and junior level status
Course Offered: Fall
Credits:

ECO 380 Econometrics
Students will learn and apply statistical methods used in empirical economic analysis. The course will cover the following topics: the fundamentals of probability and statistics, hypothesis testing, multivariate linear regression using Ordinary Least Squares (OLS), the statistical properties of OLS under less than ideal circumstances, the use of dummy variables, and specification analysis. Prerequisite(s): MTH 110 and (MTH 117 or MTH 129) and (ECO 156 or ECO 157) and Junior level status.
Course Offered: Fall, Summer
Credits:

ECO 390 Special Topics in Economics
This course enables students to explore a range of diverse topical and current issues in economics and will require extensive readings, analysis, and written work. Students should consult with the department prior to registering for this course. Prerequisite(s): ECO 156 or ECO 157
Course Offered: Fall, Spring, Summer
Credits:

ECO 401 Industrial Organization
This course teaches students how to apply industrial organization theory to data. The course will cover strategic models of firm competition and analyze industrial policy issues. Students will gain a deeper understanding of the microeconomic and game theoretic frameworks necessary to study simplified models in industrial organization. Students will analyze topics including monopoly, oligopoly, cartels and collusion, market structure, price discrimination, product differentiation, technological change, advertising, and auction mechanisms. Prerequisite(s): ECO 250 and (ECO 260 or ECO 262) and Senior Level status
Course Offered: Summer
Credits:

ECO 410 Public Finance
This course introduces students to the issues, interactions and inter-relationships arising between the market and government policy-making. Topics covered include: tools of public finance, budget analysis, externalities, political economy, cost-benefit analysis, taxation and policy, social insurance, income distribution and welfare. Prerequisite(s): (ECO 260 or ECO 262) and (ECO 255 or ECO 270)
Course Offered: Fall, Summer
Credits:

ECO 412 Cost-Benefit Analysis
This course will focus on the principles of applied economic and welfare analysis. The basic theory of cost-benefit analysis is presented and its relevance for social policy analysis is established. Applications of cost-benefit analysis are examined in the light of management decision making, theoretical grounding in finance, accounting, marketing, investment and planning. The applications of cost-benefit analysis in the health care, non-profit, entertainment, transportation and information technology sectors are also examined. Prerequisite(s): (ECO 260 or 262) and (ECO 255 or 270)
Course Offered: Summer
Credits:

ECO 420 Economics of Science and Technology
This course is an examination of technology based growth and development both in historical and current contexts. Topics include technology-based economic development, the role of human capital, technology transfer, intellectual property rights and patents, and network economics. Prerequisite(s): (ECO 260 or ECO 262) and (ECO 255 or ECO 270)
Course Offered: Fall
Credits:

ECO 430 Urban and Regional Economics
This course will focus on the economics of cities and regions as well as the challenges faced by economic agents in urban areas. Students will gain an understanding of the economic forces that lead to the development of cities and their cohesion within regional economies. The course will enrich the typical spaceless economic analysis by introducing a spatial dimension. Students will focus on analyzing and prescribing policy to address the challenges of crime, transportation, firm location, housing, education, and local government in the local and regional economies. Prerequisite(s): (ECO 260 or 262) and (ECO 255 or 270)
Course Offered: Summer
Credits:

ECO 435 Environmental Economics and Policy
This course provides a survey of the fundamental concepts underlying economic approaches to environmental policy, illustrates applications of these concepts in the real world and offers students the opportunity to apply their new knowledge toward understanding a current environmental problem. Prerequisite(s): (ECO 260 or ECO 262) and (ECO 255 or ECO 270)
Course Offered: Fall, Summer
Credits:

ECO 440 Topics in Applied Economics
A treatment of diverse topics chosen by the department for their importance in current economics. The course will require extensive reading, analysis and written work depending on the topic. Students should check with the department before registering for this course regarding anticipated topics for the semester. Prerequisite(s): (ECO 260 or ECO 262) and (ECO 255 or ECO 270)
Course Offered: Fall, Summer
Credits:

ECO 441 Economics of Gender
In this class economics theory and analysis will be used to address questions on gender differences in education, career choices, household decisions, and earnings. Models of labor supply and demand, allocation of resources within household, human capital, earning equation, and discrimination will be introduced and data will be examined to test these economic theories. Gender-related policy issues and applications will also be discussed. Prerequisite(s): (ECO 260 or ECO 262) and (ECO 255 or ECO 270)
Course Offered: Fall
Credits:

ECO 450 International Development Economics
This course will introduce some of the fundamental questions and issues surrounding the development process including topics such as: economic structure, economic growth models dual sector models, export led growth, as well as a range of applied and historical examples including an overview of African, Asian, and Latin American development experiences, and current issues in economic development. Prerequisite(s): ECO 255, ECO 260, ECO 262 or ECO 270
Course Offered: Fall
Credits:

ECO 480 Forecasting
This course the methodology and applications of econometric forecasting and time series analysis. Topics include linear regression model, stationarity, modeling seasonality, arima models, and volatility. Prerequisite(s): (ECO 380 and 260) or (ECO 262 and 255 or ECO 270)
Course Offered: Summer
Credits:

ECO 489 Economic Internship
Advanced third and fourth year applied economics students will be placed in a public or private sector setting in which the student will be able to gain work experience in applied economics analysis. A written report on the internship experience is required of the student at the conclusion of the internship. Students may not repeat this course for credit. Prerequisite(s): (ECO 262 and ECO 260) or (ECO 250) and (255 or ECO 270)
Course Offered: Fall, Spring, Summer
Credits:

ECO 490W Economic Research and Reporting (Writing Intensive)
This course introduces students to the methods and techniques of economic analysis, data and statistical analysis, interpretation of results, documentation, article preparation, and the report presentation. This is a writing-intensive course. Note: Students cannot get credit for ECO 490 and 490W; ECO 490W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Economics Department Prerequisite(s): ECO 260 or ECO 262 and (ECO 270 or ECO 255) and ECO 250 and ECO 380 and EGL 101 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

ECO 491 Applied Economic Analysis
This course is a follow-up to the economic research and reporting course. Its goal is to prepare the student to conduct independent research in consultation with their advisor, students will develop a senior project in an area of current economic interest. They will participate in seminar and present their research, culminating in a completed report and presentation on their research topic. Prerequisite(s): ECO 490 or 490W
Course Offered: Fall, Summer
Credits:

ELECTRICAL ENGINEERING TECHNOLOGY (EET)

EET 104 DC/AC Circuits
An introductory course to the fundamentals and basic principles of DC and AC circuits. Topics covered include: The definition of current, voltage and passive circuit elements such as, resistors, capacitors, and inductors, through their I-V characteristic relationships. Ohm's Law Power, Kirchoff's Current and Voltage Laws, Voltage and Current Divider Rules, and their basic applications in the analysis of series, parallel and series-parallel circuits. The fundamental Network Theorems, Superposition, Thevenin's and Norton's equivalent circuits and Maximum Power Transfer. AS signal waveforms and their Average and RMS value, alternating current, voltage and power resistors, capacitors and inductors in AC circuits, ideal transformers and the concept of resonance. Introduction to the operation and basic applications of first order passive, low and high pass, RC filters. Corequisite(s): MTH 129, EET 104L
Course Offered: Summer
Credits:

EET 105 Introduction to Digital Electronics
An introduction to the fundamental concepts of Digital Electronics. Topics covered: Number systems, Boolean Algebra, Logic Gates, Combinational Circuits, Karnaugh Map Minimization Techniques, Adders, Signed Numbers, Multiplexers, Code-Converters, Decoders, Encoders, Comparators and 7-segment displays. The laboratory component of the course reinforces the topics covered in the theory through relevant experiments performed by students using logic trainers. Corequisite(s): EET 111 or EET 104
Course Offered: Fall, Summer
Credits:

EET 110 Computer Applications
An introduction to computer programming with applications. Examples and assignments are drawn from problems in Electrical and Computer Engineering Technology. The course uses Windows based PCs, the "C/C++" programming language (visual C++), and IEEE-488 Standard interfacing to programmable instrumentation. Corequisite: EET 111
Course Offered: Fall, Spring, Summer
Credits:

EET 111 Electric Circuits I
A basic course in direct current circuit theory. Concepts of charge, current and voltage; Ohm's Law, Kirchoff's Laws; analysis of series, parallel, and combination circuits; mesh and nodal analysis; Superposition, Thevenin's and Norton's theorems; maximum power transfer theorem; electric fields and capacitance; magnetic fields and inductance; analysis of R-C and R-L switching networks. The laboratory is coordinated with, and supports, the theory course. Corequisite(s): MTH 129, EET 111L
Course Offered: Fall, Summer
Credits:

EET 113 Electric Circuits II
This is the second of a two-course sequence designed to provide the background needed to analyze electric networks. Topics covered in this course include sinusoidal waveforms and non-sinusoidal waveforms; the phasor representation of sinusoidal signals; the use of complex numbers to analyze R-C, R-L, and R-L-C networks under sinusoidal steady-state conditions; series and parallel resonance; average power calculations; simple passive filters, frequency response (dB magnitude and phase) and its relations to the step response of simple R-C, R-L and R-L-C networks; transformer principles and types of transformers; three phase balance systems. Prerequisite(s): EET 111 and MTH 129
Course Offered: Fall, Spring, Summer
Credits:

EET 118 Semiconductor Devices and Circuits
Fundamentals of semiconductor diodes and bipolar junction transistors are discussed in this course. Topics covered include: Q point operating conditions of semiconductor diodes in various circuit configurations, full and half-wave rectification, capacitor input filters, zener diodes and basic linear DC power supply configurations. Q point operating conditions of BJT transistors in various bias configurations are analyzed as well as small signal single-stage and multi-stage amplifiers at mid-band frequencies in terms of voltage gain, current gain, power gain, input impedance, output impedance, AC load lines and signal node voltages. Corequisite(s): EET 113
Course Offered: Summer
Credits:

EET 191 Electric Circuits Concepts and Components
An introductory lecture/demonstration course in the terminology, concepts, and components of electric circuits. The aim is to give students from other disciplines (e.g. Office Management, Nursing, etc.) sufficient knowledge and understanding to effectively communicate with technical specialists in this field. Prerequisite(s): Sequential (Integrated) Math 1
Course Offered: Fall
Credits:

EET 200 Electronic Devices & Circuits
Principles and characteristics of semiconductor devices and linear integrated circuits are discussed. Devices studied include: semiconductor diodes, zener diodes, bipolar junction transistors, photodiodes and transistors, field- effect and metal oxide semiconductor transistors, thryristors , and operational amplifiers in various DC power supply, small signal and power amplifier configurations as well as wave shaping circuits. Simulation software will be used throughout the course in both theory and laboratory exercises. Prerequisite(s): EET 104
Course Offered: Fall
Credits:

EET 223 Digital Electronics
Analysis and design of combinational and sequential logic circuits. SSI and MSI circuits; flip-flops, counters, and shift registers; integrated circuit families; multiplexers; semiconductor memory devices; D/A and A/D

converters. The associated laboratory reinforces the topics covered in the theory through relevant experiments performed by the student. A formal report is part of the laboratory requirement. Prerequisite(s): EET 105
Corequisite(s): EET 223L, 118
Course Offered: Fall, Summer
Credits:

EET 224 Amplifiers
Signal parameters of Class A and Class B power amplifiers as well as operational amplifiers are studied in this course. Topics covered include, efficiency, dB, dBm, heat sinks, JFET and MOSFET transistors, operational amplifiers, and the frequency response of amplifier circuits. In addition, operational amplifier characteristics and models are used in the analysis of open loop and closed loop amplifiers. Adders, subtractors, active filters, comparators, differentiators, integrators, and the Schmitt trigger are also studied. Feedback concepts and the effect of feedback on gain, impedance and frequency response of amplifiers are studied as well as circuit stability, gain, and phase margins. Simulation software is used in the analysis of operating conditions and frequency response of amplifiers. Formal Report writing is part of the Laboratory requirement. Prerequisite(s): EET 118
Corequisite(s): EET 110, MTH 130
Course Offered: Fall
Credits:

EET 225 Communications Electronics
An introduction to communication signals and circuits. Topics include: filters, simple audio and RF oscillators, interpretation and application of Fourier series; mathematics of amplitude; frequency and phase modulation; basic transmitter circuitry; superheterodyne receivers for various modulation methods; multiplexing techniques including FM stereo multiplexing. Introduction to Digital Transmission Techniques as time permits. Prerequisite(s): EET 224
Course Offered: Fall, Summer
Credits:

EET 251 Microprocessors
Fundamental microprocessor and microcontroller concepts; architecture, memory, memory interfacing, programming, signals, timing, delay calculations, I/O interfacing and interrupts. The students will be required to interface input and output devices to the embedded controller and quantify associated hardware/software trade-offs. Laboratory work requires programming in assembly language and in C/C++. Prerequisite(s): EET 223
Course Offered: Summer
Credits:

EET 311 Network Analysis
A calculus based network analysis course that introduces the use of Laplace transforms in the analysis of both active and passive lumped parameter time-invariant linear networks. Topics covered include Mesh and Nodal analysis using matrix formulations; the network theorems; impedance and the modeling of initial conditions; first and second order systems; transfer functions; poles and zeros; impulse and step response; forced and natural response as well as system stability and time domain response. The sinusoidal steady state (AC) phasor transformation and its relation to the Laplace transform and the frequency response of networks are also included. The laboratory utilizes simulation of electric networks.
Corequisite(s): MTH 236
Course Offered: Fall, Summer
Credits:

EET 316 Digital Design
Introduction to Digital Design using FPGA (Field Programmable Gate Arrays) and VHDL (Hardware Description Languages). The FPGA circuits are designed using Schematic Capture as well as VHDL. The target chips are Xilinx FPGAs and Xilinx tools are used to simulate and to "place and route" the design. Designs are then tested using FPGA based platforms.
Prerequisite(s): EET 223
Course Offered: Fall, Summer
Credits:

EET 317 Industrial Electronics
Selected topics involving Difference and Instrumentation amplifiers with Transducer Bridge applications. Linear and Switching mode regulated power supply operation with analysis and design techniques using existing industrial ICs Thyristor characteristics with SCR, DIAC and TRIAC applications in power control circuits. Theory concepts are illustrated in the laboratory. Formal report writing is part of the laboratory requirement. Prerequisite(s): EET 224
Course Offered: Fall
Credits:

EET 327 Signal Processing
The course will provide the students with an introduction to continuous-time and discrete-time signals and systems. Topics to be covered include: Linear Time-Invariant (LTI) systems, Laplace transforms, transfer function, impulse and step response, transient and steady state responses, frequency response, Bode plots, passive and active filters, modulation, oscillators. Fourier series and Fourier transforms, power spectral density and Parseval's theorem. Random signals and noise. Signal-to-noise ratio. Discrete-time signals. Sampling, filtering, convolution, Discrete Fourier Transform (DFT), Fast Fourier Transform (FFT) algorithms, and the z-transform. The use of MATLAB is integrated throughout the course in laboratory exercises, demonstrations and student projects. Prerequisite(s): EET 311
Course Offered: Summer
Credits:

EET 414 Transmission Lines and Antennas
Introduction to transmission lines. Transient response for conditions of matched and mismatched impedance. Definition of reflection and transmission coefficients. Sinusoidal signals, standing wave ratio and use of the Smith chart. Power measurement. Introduction to antennas. Radiation pattern and impedance of simple dipole antennas. Formal laboratory report writing required. Prerequisite(s): EET 225
Course Offered: Fall
Credits:

EET 418 Microprocessor Interfacing and Control
This course covers an in-depth study of microprocessor systems by exploring the internal functions of a computer. Hardware and software capabilities are studied in order to build a foundation for the design and interfacing of microprocessor based systems using real world examples. Assembly as well as a high level language such as "C++" is used in various programming projects and in interfacing devices. Prerequisite(s): EET 110 and EET 251
Course Offered: Fall, Summer
Credits:

EET 420 Linear Systems and Controls
This course covers the principles and characteristics of continuous time invariant linear systems and controls as well as the basic performance parameters and analysis techniques of such systems. Topics include: Review of Laplace Transforms and their applications in analyzing the performance of systems in terms of their impulse and step response; block diagram models, signal flow graphs, and state variable representation of systems; second order active filters and the performance characteristics of second order systems in terms of overshoot, speed and setting time. Feedback Control System characteristics, the Routh-Hurwitz stability criteria, and the application of Root Locus and Frequency Response techniques in the analysis of control systems are also covered. The laboratory utilizes MATLAB to demonstrate and enhance the theory principles covered in the lecture portion of the course. Prerequisite(s): EET 311 Corequisite(s): MTH 245
Course Offered: Fall
Credits:

EET 426 Digital Communications
An introduction to digital communications systems. Topics covered include; the sampling theorem; PCM systems; synchronization techniques; noise analysis and reduction; FSK; PSK; bit error rates; hamming codes; and an introduction to fiber optic systems. Prerequisite(s): EET 225
Course Offered: Summer
Credits:

EET 440 Data Communications and Networking
This course covers the basic concepts of networking and computer connectivity. Several network topologies and related media access techniques are explored. The rudiments of Data Communications and Open System Interconnection (OSI) are discussed in detail. Students will learn the components of a client server networks using the Novell's Net Ware/ Intra Net Ware. Certain protocols such as TCP/IP and SPX/IPX are also discussed. Laboratory experiments are designed to give students a hands on experience in Network administration, configuration and resource management. Completion of this course includes a final project related to the design of a local area network, complete with Layers I and II, as well as

the Directory Tree Structure based on the netware. An oral presentation by each student of their project is required. Prerequisite(s): Knowledge of digital electronics; familiarity with a real time operating system; ability to program in a high level language. Chair approval.
Course Offered: Fall, Summer
Credits:

EET 441 Advanced Networking
This course is a continuation of EET 440, Networking and Data Communications. The principles of Architecture Layering, Multiplexing and Encapsulation are discussed. TCP/IP, IPX, PPP, ISDN and Frame Relay Protocols are covered. Network equipment such as repeaters, bridges router hubs and switches are studied in detail. Equipment examples are drawn from key vendors such as CISCO, 3COM and Cabletron. The laboratory portion of the course will concentrate on experiments and projects designed using CISCO Systems networking equipment, such as 2500 and 2600 series routers, 1900 and 2900 catalysts switches. The students will also learn how to design networks using VLANS on the above mentioned equipment. Prerequisite(s): EET 440
Course Offered: Fall, Summer
Credits:

EET 450 Design Concepts
General design considerations and concepts with particular emphasis in "worst case" design and "optimum" design. Case studies will be provided through examples of different areas of Electrical Engineering Technology. Product development procedures and processes will be presented along with testing and costing considerations. By the end of this course students must select their senior design project for EET 452W and must submit an appropriate proposal. Prerequisite(s): Completion of junior level EET courses or Department permission.
Course Offered: Fall
Credits:

EET 452W Design Project (Writing Intensive)
The student's overall technical knowledge is applied to this "capstone" design project under the supervision of faculty. A complete oral and written presentation is required of each student explaining the design process and specifications, cost considerations, testing and/or computer simulation results when appropriate. Note: Students will be expected to write short exercises, as well as longer papers that will be revised and graded. This is a writing-intensive course. Note: EET 452W can be used to fulfill the writing intensive requirement. Prerequisite(s): EET 450 and EGL 101 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

EET 490 Selected Topics in Electrical Engineering Technology
Courses that range from 490-499 are selected topics of current interest in Computer and/or Electrical Engineering Technology. Prerequisite(s): Contingent upon selected topic
Course Offered: Fall, Summer
Credits:

EET 491 Selected Topics in Electrical Engineering Technology
Courses that range from 490-499 are selected topics of current interest in Computer and/or Electrical Engineering Technology. Prerequisite(s): Contingent upon selected topic
Course Offered: Fall, Summer
Credits:

EET 492 Selected Topics in Electrical Engineering Technology
Courses that range from 490-499 are selected topics of current interest in Computer and/or Electrical Engineering Technology. Prerequisite(s): Contingent upon selected topic
Course Offered: Spring
Credits:

EET 493 Selected Topics in Electrical Engineering Technology
Courses that range from 490-499 are selected topics of current interest in Computer and/or Electrical Engineering Technology. Prerequisite(s): Contingent upon selected topic
Course Offered: Summer
Credits:

ENGLISH (EGL)

EGL 097 Basic Writing Skills
A developmental course concerned with the improvement of written communication skills. Students review grammar and mechanics, syntax, vocabulary, paragraph and essay organization, and reading skills. Students are required to pass an exit exam, and a pass/repeat grade is awarded for the course. This course is not applicable toward a degree. Fall, Spring, Pass/Repeat Grade will not be computed into GPA.
Course Offered: Fall, Spring, Summer
Credits:

EGL 101 Composition I: College Writing
This is the first part of a required sequence in college essay writing. Students learn to view writing as a process that involves generating ideas, formulating and developing a thesis, structuring paragraphs and essays, as well as revising and editing drafts. The focus is on the development of critical and analytical thinking. Students also learn the correct and ethical use of print and electronic sources. At least one research paper is required. A grade of C or higher is a graduation requirement. Note: Students passing a departmental diagnostic exam given on the first day of class will remain in EGL 101; all others will be placed in EGL 097. Prerequisite is any of the following: successful completion of EGL 097; an SAT essay score (taken prior to March 1, 2016) of 7 or higher; an SAT essay score (taken after March 1, 2016) of 5 or higher; on-campus placement testing.
Course Offered: Fall, Spring, Summer
Credits:

EGL 102 Composition II: Writing About Literature
This is the second part of the required introductory English composition sequence. This course builds on writing skills developed in EGL 101, specifically the ability to write analytical and persuasive essays and to use research materials correctly and effectively. Students read selections from different literary genres (poetry, drama, and narrative fiction). Selections from the literature provide the basis for analytical and critical essays that explore the ways writers use works of the imagination to explore human experience. Grade of C or higher is a graduation requirement.
Prerequisite(s): EGL 101
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 200 Shakespeare
A survey of representative comedies, tragedies, romances, and histories showing Shakespeare's dramatic variety. Acting styles are emphasized with the use of recordings, tapes and, when possible, live performances.
Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

EGL 201 English Literature: Old English through the 18th Century
A historical survey of English literature from the beginnings to neoclassicism. Consideration is given to Anglo-Saxon and medieval writers, Chaucer, Elizabethan and Jacobean writers, Shakespeare, Milton, and the writers of the Age of Reason. English history, religion, and philosophy are studied as they relate to literature. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

EGL 202 English Literature: 19th Century to the Present
An historical survey of Romantic, Victorian and Modernist literature. Emphasis is placed on the development and continuity of literary traditions.
Prerequisite(s): EGL 102 with a grade of C or higher.
Course Offered: Fall, Spring, Summer
Credits:

EGL 203 American Literature: Beginnings to 1865
An examination of major historical and new canonical American authors; genres, and periods of the seventeenth, eighteenth, and part of the nineteenth centuries up to the Civil War. An analysis of the works of writers of the New Republic, the Revolutionary and Federalist periods of the eighteenth century, as well as the emerging national literatures of indigenous and colonizing groups; the ages of Transcendentalism, American Gothic, early Realism as well as the works of Native American, Feminist, African-American, Abolitionist, Frontier and Civil War writers will be considered. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring

Credits:

EGL 204 American Literature: 1865 to the Present
An examination of major historical and new canonical American authors, genres and periods of the era from the Civil War through the twenty-first century. An analysis of such trends as Realism, Naturalism, immigrant literature, the regional and local color movements, as well as the rise of biographical genres, and the influence of psychology and technology on literature will be made. Modernism, the renaissance in American poetry, the Harlem Renaissance, and the literature of social critique will also be examined. Note: Students cannot get credit for EGL 204 and 204W; EGL 204W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 206 World Literature: Early Classics
An introduction to Western and non-Western literature from earliest times through the seventeenth century. Included are works from ancient Greece and Rome, Medieval and Renaissance Europe, the Middle East, Africa, China, and India. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 207 World Literature: The Moderns
An introduction to Western and non-Western literature from the eighteenth century through the twentieth century. Included are works from authors of the Enlightenment, the Romantic and Realist Movements, and the twentieth century from the Continent and the Third World. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 210 Introduction to Drama
A survey of Western drama stressing close reading of plays from ancient Greece, Elizabethan and Restoration England, nineteenth-century Scandinavia and Russia, and twentieth-century Britain and America. The changing concepts of comedy and tragedy are discussed. Note: Students cannot get credit for EGL 210 and 210W; EGL 210W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 212 Introduction to Fiction
A survey of American, British, and continental prose fiction. An understanding of the critical theory of such works is stressed. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 214 Introduction to Poetry
A survey of English language poetry. Selected works of both traditional and contemporary poets are analyzed and discussed. Note: Students cannot get credit for EGL 214 and 214W; EGL 214W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 216 Creative Writing
An introduction to a wide spectrum of written formats, especially those employed by writers of fiction and poetry. Students read in these genres and submit a short written piece, in either genre, for each class. In addition, students complete a major project in their chosen area. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 222 Women in Literature
An exploration of the position of women in various cultures as interpreted by major world writers. Focus is on the female protagonist's attainment of goals in marriage, family, and work. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 225 Images of Women in Drama
A study of images of women in Western drama from ancient times to the present. This course will consider the development of drama as a popular art form reflecting gender issues of its time. Note: Students cannot get credit for EGL 225 and 225W; EGL 225W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Summer
Credits:

EGL 226 Journalism
An introduction to practical journalism in which students write news and feature stories, editorials, and reviews, and examine techniques of newspaper design and photography. Classes include readings and discussions in the theory of mass communications. Student materials may be printed in campus publications. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 228 Classics and Mythology in Popular Culture
This course presents a cross-cultural and cross-disciplinary examination of the meaning and value of such myths as those of the creation, the flood, and the hero, and their depiction in literature, art, film, and music from the ancient past to the present. Students will acquire an understanding of the uses of mythical themes and archetypes both in ancient art and literature as well as in modern art, literature, and film. Course work includes assigned readings, film screenings, informal journals, a formal paper and exams. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 230 Literature of the Bible
A study of the origins, themes, and history of Biblical literature based on the new international version of the Bible. Later literature and other arts influenced by the Bible are included. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 232 Voices of Multicultural America
A study of selected fiction, poetry, autobiography and memoirs of American immigrants of the 20th and 21st centuries. The thematic focus of this course is the way in which writers from different cultures shape the stories of their lives, particularly as they encounter the realities of American experience and test the truth of their American dreams. Lecture and discussion of individual writers will address the different genres and styles used by these immigrant writers as well as thematic parallels and differences between writers from different cultural backgrounds. Readings may vary each semester but will reflect the cultural diversity of American immigrant writing, including writing by Caribbean writers, Asian-Americans, Latino Americanos, Jewish, Italian, Irish, and other Eastern European immigrants. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 240 Themes in Science Fiction in Film and Literature
An exploration of how writers of science fiction have used science and technology to examine moral questions, social issues and the boundaries of technology. Readings of selected authors will focus on the ways creative writers have explored various aspects of the genre, including scientific experimentation, alternate time/space continuum, weaponry, psychic phenomena, cyberspace, bionics, alien life and the future. The class will also view cinematic adaptations of the selected works to examine whether/how the change of medium affects the emphasis and impact of the work and how visualization and special effects affect the audience's perception. Course work includes assigned readings, film screenings, informal journals, and formal papers. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Summer
Credits:

EGL 242 Film and Literature
Students will read selected short fiction and novels by English, American and other writers and view the films that have been made from them by prominent directors. The course will develop students' understanding and appreciation of both literature and film. Students will examine how great writers elicit the complex response they do from their readers, and then

explore the ways that film provides an interpretation of literature. Analysis and discussion will center on how the visual media shapes literature as various directors adapt texts for the screen. The ability to interpret the texts and films appreciatively and critically will be assessed through a series of class projects and examinations. Note: Students cannot get credit for EGL 242 and 242W; EGL 242W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

EGL 244 Classics of Supernatural Film and Literature
This course engages students in the principle forms of artistic expression integral to classic works of supernatural literature and their cinematic adaptations. Students will acquire an understanding of the creative process inherent in these works, an understanding of the literary and cinematic conventions of the genre and will also develop a critical vocabulary that will allow them to discuss and to evaluate these works and others in depth. Cinematic adaptations of these works in particular follow the evolution of the cinema itself; thus students in this course will also gain a critical understanding of its aesthetic and technological development. This course will also focus on film composition, including the shots, angles, iconography and editing typical of this genre. Course work includes assigned readings, informal and formal papers requiring primary and secondary research, critical analysis of required screenings, and exams. Students will be required to attend and to complete critical analyses of campus and off-campus theatrical screenings as they are scheduled. Note: Students cannot get credit for EGL 244 and 244W; EGL 244W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall
Credits:

EGL 246 Themes in Literature
This course will enable students to explore a major literary theme. The theme may vary in different semesters or in different sections of the course during a single semester. Themes may include nature writings, literature of the Holocaust, literature of the American West, and Long Island in fiction, among others. Prerequisite(s): EGL 102 with a grade of C or higher
Credits:

EGL 250 Young Adult Literature
Students will trace the historical and psychological development of the concept of "adolescence" by studying the canonical literature for young adults that shaped cultural ideas of adolescence. Students will read a wide representation of classic 20th century Young Adult authors, including Judy Blume, Robert Cormier, Chris Crutcher, Paula Danziger, S.E. Hinton, Harper Lee, Lois Lowry, Patricia MacLachlan, Walter Dean Meyers, Gary Paulsen, Cynthia Voigt, and Paul Zindel. The class focuses on the literary analysis of different Young Adult genres: dystopia, fantasy, historical fiction, realism, nonfiction, photojournalism, and graphic novels. Class is conducted through the innovative method of reading circles, and so requires active student participation. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Summer
Credits:

EGL 255 Children's Literature
Students will trace the historical and psychological development of the concept of childhood by studying the canonical literature for children that shaped cultural ideas of childhood. Students will read a wide representation of classic and contemporary "children's" literature including fairy tales, fantasy, poetry, adventure stories, historical fiction, and picture books. The class focuses on the literary analysis of different genres in children's literature. Prerequisite(s): EGL 101 and EGL 102
Course Offered: Fall
Credits:

EGL 266 Fantasy in Literature and Film
Fantasy in Literature and Film examines not only the oldest literary genre but one that continues to fascinate readers old and young and to inspire some of the most innovative and technically sophisticated films. Works of fantasy overlap other genres: myth, fairy tales, epic sagas, tales of the grotesque, juvenilia, adventure stories, and some science fiction. However, fantasy is the study of what can never actually be real, that is, what we dream about or can only imagine. Readings include traditional works of fantasy from the earliest recorded texts as well as beloved children's and young adult "classics" of this genre. Film adaptations as well as original films in this genre will also be analyzed and critiqued. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall
Credits:

EGL 269 The Romantic Arts: Art, Dance, Literature and Music
This course examines the art, dance, literature and music of the Romantic Period of each of the disciplines. Students will acquire an understanding of the aesthetic concerns of each of these art forms in the period in which they were created and develop a critical vocabulary that will allow them to better understand, evaluate, and discuss the works in depth. Course work includes readings, field trips to art exhibits and performances, and extensive use of audio-visual materials. The course will require both informal and formal papers that utilize primary and secondary research materials. By examining multiple art forms, students will develop greater aesthetic and critical understanding of the art forms of the Romantic period included in the course study. Note: Students cannot get credit for EGL 269 and 269W; EGL 269W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Summer
Credits:

EGL 301 Advanced Grammar and Vocabulary
Students will master a study of descriptive and prescriptive English grammar and will become familiar with concepts of linguistics and semiology. Students will expand their vocabulary by learning the use of a broad range of words and by understanding their etymological roots, their appropriateness to situation and audience, and their function in smooth syntax. Students will develop skills leading to the use of precise, concise prose style. Mastery of grammar, vocabulary and style is essential to professional-level reading, writing, speaking, listening, and editing. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

EGL 302 The 19th Century English Novel
Select novels by major British authors of the nineteenth century, such as Austen, the Brontes, Mary Shelley, Dickens, Thackeray, George Eliot, Trollope, Hardy and Conrad, are read. Attention is given to the social, economic, political and intellectual backdrop informing the content of the novels. Secondary sources are required. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 303 Writing for the 21st Century
Writing for the 21st Century explores the many modes of expression that are available to writers, speakers, and thinkers, including auditory, visual, gestural, and spatial acts of communication. A central goal of this course is to make deliberate use of these modes and design choices in relationship to specific purposes and audiences. To do so, students will critically analyze the ways these varied modes are employed, as well as produce texts that deploy these for specific contexts, audiences, and situations in order to effectively inform, persuade, and communicate. After completing this course, students should feel confident in their ability to transfer information using twenty-first century technology and possess skills that will assist in their future academic and professional lives. Prerequisite(s): EGL 102 and 200-Level or higher Writing Intensive Course with a grade of C or higher.
Credits:

EGL 307 Special Topics in Literature
This course will enable students to explore intensively a major author or literary theme, period or genre. The subject for a particular semester will be announced prior to registration. Topics may include love, lust and marriage; persuasion and propaganda; and World War I writers, among others. Short papers involving secondary sources will be required. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

EGL 308 The City In Literature, Art, Film and Theatre
This course examines depictions and interpretations of the city through literature, film, theatre, photography, painting, sculpture and architecture. Initially, the focus will be on New York City, although subsequent semesters, it may extend to other major world cities such as London, Paris, Rome, or Athens. Students will gain an understanding of the aesthetic value of

the different art forms as well as develop the critical vocabulary to help them evaluate the various literary and artistic works. Course work includes assigned readings, field trips to museums in New York City, and extensive use of audio-visual material. Both informal writing (response journals) and more formal papers, including a research paper utilizing primary research (photographs, maps, interviews with artists, slides etc.) and secondary critical and/or historical studies will be required. Note: Students cannot get credit for EGL 308 and 308W; EGL 308W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 309 Voices of Black America in Poetry, Prose and Song
A study of the oral and literary tradition of African Americans in poetry, prose and song. This course provides both a historical examination of the written and oral tradition of African Americans in its own right and as a lens through which American culture can be viewed. The course will explore the developing aesthetic concerns of this tradition in different historical periods as, for example, the question of dialect before, during and after the Harlem Renaissance and the later Black Arts movement up through contemporary rap. Students will also consider how many texts by African Americans combine literary and musical forms, particularly spirituals, blues, jazz, hip hop and rap. Critical readings and research project required. Students who have completed EGL 224 may not receive credit for this course. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 310 Technical Writing
A detailed study of the fundamentals of writing technical reports and other technical communications. Topics emphasized include the elements of a technical report, the interpretation of statistics and data, and the composition of letters, memos, and informal reports containing technical information. Assignments and student exercises are drawn from the student's technical area. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

EGL 312 Major Authors in American Literature
An in-depth examination of the major trends in American Literature as reflected specifically through the works of individual authors. The instructor will select the two or three authors to be studied each semester. Secondary sources, a major research project, and an annotated bibliography of criticism of a particular work will be required. Note: Students cannot get credit for EGL 312 and 312W; EGL 312W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 314 Major Authors in World Literature
An in-depth examination of major trends in world literature as reflected through the works of individual authors. One to three authors are studied each semester. Requirements include a substantial research project involving critical research. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 316 Women in Modern Literature
In this course students will examine major American texts by women writers from the beginning of first wave feminism to the present. While most of the works studied will be narrative fiction, some non-fiction, drama, poetry, and memoirs are included. Themes addressed in this course include women's relation to work, religion, nature, marriage and family, their struggle for voting rights, equal treatment under the law, and as immigrants to America from different cultures. The focus of the course is the ways in which literary works both reflect and help to shape the history and culture of America. This includes examination of how particular genres, styles of writing, and literary techniques are utilized by the writers covered in this selective survey of American women writers. Note: Students cannot get credit for EGL 316 and 316W; EGL 316W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the English Department Prerequisite(s): EGL 102 with a grade of C or higher
Credits:

EGL 317 Studies in Shakespeare
An analysis of Shakespearean plays, along with their sources, the early modern period in England, and traditional and contemporary critical commentary. Four or five plays will be studied each semester. Requirements will include examinations and analysis of plays.
Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Spring
Credits:

EGL 318 Advanced Creative Writing
An intensive workshop experience in which students are taught to recognize and appreciate excellence in the poetry and fiction of significant contemporary writers, and to produce polished works in these genres. Students will be required to keep a formal writer's journal and to participate in formal readings of their works, as well as provide pertinent critical evaluations of the writing of others. Prerequisite(s): EGL 216 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 319 Modern Drama
This course provides an in-depth examination of representative plays of Modern Drama (late nineteenth century through the twentieth century), focusing on such literary movements as realism, expressionism, relativism, epic theater, theater of the absurd, and focusing on the historical and cultural context of the different literary movements and the representative plays. Requirements include a research project involving traditional and contemporary criticism. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Summer
Credits:

EGL 322 Leadership in Fact, Fiction and Film
Leadership in Fiction, Fact, and Film examines various fiction and non-fiction materials from a business perspective. Students will explore leadership, ethics/values, motivation, interpersonal skills, power/authority, communication, gender roles, empowerment, change, etc., as these concepts are demonstrated in these various works. Students will analyze the problems in the materials and apply them to modern-day corporate work situations, reflecting upon how these works are practical and functional to successful management tasks, responsibilities, and leadership.
Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 323 Major Authors in British Literature
An in-depth examination of major trends in British literature as reflected through the works of individual authors. One to three authors are studied in depth each semester. Requirements include a research project involving traditional and contemporary criticism. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

EGL 330 Classical Greek Tragedy: Aeschylus, Sophocles and Euripides
This course introduces students to the Classical Greek Theater and its three great Athenian tragedians: Aeschylus, Sophocles, and Euripides through close readings of surviving texts in translation and through viewings of modern productions of these ancient theatrical works. Focusing on these playwrights' works both as art forms and as products of a specific historical society, the course will address the role this drama played in the lives, culture, and aesthetic sensibilities of the ancient Greeks as well as its role as a living art form in contemporary society. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Summer
Credits:

EGL 331 Death, Madness and Sex: The Victorians
Focusing on three of the predominant obsessions of Victorian society, this course will study the literary, artistic, and aesthetic explorations of these themes by authors such as Dickens, Stoker, Wilde, Tennyson, Rossetti, and Browning and artists such as Millais, Burne-Jones, Hunt, Leighton, Waterhouse, and Dadd to gain a comprehensive overview of this major literary, artistic, and cultural period. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Summer
Credits:

ENVIRONMENTAL STUDIES (ENV)

ENV 101 Energy Sustainability and Environment
This is an introductory course to create and enhance the critical awareness of the student regarding various forms of energy, sustainability issues and the impact on the environment through unbridled use of energy in the present day context. A scientific and technological approach is used to discuss various topics. The knowledge base of this course is derived from certain natural sciences such as Physics, Chemistry, Biology and Eco-Science. The main topics of discussion are: Forms of energy, energy conservation, impact on the environment by the use of energy, forms of renewable energy and sustainability issues. The critical policy issues related to energy are also discussed. The course prepares the student to be a fully aware citizen on energy issues facing the community and the world.
Course Offered: Fall, Winter, Spring, Summer
Credits:

ENV 203 Sustainability in Architecture and Construction
This course gives an in-depth introduction and orientation to sustainability in built environment. Some of the areas this course will cover are: sustainable site, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, etc. Prerequisite(s): MTH 117or 129 and departmental approval required.
Course Offered: Summer
Credits:

ENV 210 Energy Policy and Standards
This course gives an introduction to energy policy at various levels like the local governments, state and federal governments. Role of Public Service Commission, Inter and intra state energy markets, environmental laws as policy tools for energy generation and distribution are also topics of discussion. Influence of NGOs in shaping the energy policy is discussed. Topics like renewable portfolio standard, feed-in-tariff, distributed generation and its challenges etc. are included. Case studies involving local utilities will be discussed. Prerequisite(s): ENV 101
Credits:

ENV 300 Energy and Sustainability
This course provides an introduction to the scientific principles governing energy conversion, use and storage, as well as the fundamental issues involving energy systems and their impact on the environment. The science of energy is covered, including energy sources and forms of energy, topics from thermodynamics and heat transfer, as well as electrical, mechanical and nuclear energy. Energy systems based on fossil fuels and their environmental impact are discussed. Energy efficiency, conservation and issues involving the earth's climate are examined. Sustainability and renewable energy sources, such as, solar energy, hydropower, wind, and geothermal energy are introduced. Energy storage and distribution are also briefly discussed. Prerequisite(s): PHY 136 and Junior level status
Credits:

ENV 301 Energy in Electronics and Computer Systems
This course is intended to find ways of building future electronic information processing systems, with major improvements in energy efficiency. In particular new electronic and computer devices extending from low- power nanoelectronic devices, through circuit design, chip- scale architecture, short-range interconnects, long-range interconnect, networks, software, storage systems, servers, green data centers and supercomputers are considered. Prerequisite(s): ENV 210 and Junior-level status.
Credits:

ENV 305 Renewable Energy Systems I
This courses gives an overview of various renewable energy technologies like solar, wind, geothermal, hydro, bio fuels, fuel cells etc. The growth and potential of these technologies along with challenges faced by each of the technologies are discussed. Comparisons are made with conventional energy systems using fossil fuels. Prerequisite(s): ENV 210
Credits:

ENV 310 Renewable Energy Systems II
This course is a follow up course of Renewable Energy Systems I.
This course undertakes detailed study of some of renewable energy technologies like solar, wind energy systems. Design installation and maintenance aspects of renewable energy systems are covered. Cost benefits analysis of energy systems included. Prerequisite(s): ENV 305 and MTH 130
Credits:

ENV 450 Capstone Project/Research
Capstone Project/Research course is a project course for Sustainability Energy and Environment Minor programs students. It is a course in which the student works on a self study mode under the supervision of a faculty member in the implementation of an approved design project proposal. At the end of the course students are required to provide a written report and make an oral presentation that addresses areas such as the design process implemented, product specifications, cost analysis, testing and/or computer simulation procedures used in the verification of results obtained as well as ethical and product liability issues addressed. Prerequisite(s): Approval of Advisor of the minor is required.
Credits:

ENGLISH AS A SECOND LANGUAGE (ESL)

ESL 091 Beginning English as a Second Language
A beginning course for non-native speakers of English emphasizing basic listening, speaking, reading and writing skills.
Course Offered: Fall, Summer
Credits:

ESL 092 Intermediate English as a Second Language
A continuation of ESL 091. A course for the student who has attained a degree of fluency in speaking English but needs additional training in reading and writing skills.
Course Offered: Fall, Summer
Credits:

ESL 093 Advanced English as a Second Language
A continuation of ESL 092. An advanced course for the non-native speaker of English who has already mastered basic skills. This course is designed to bring the student to the level of proficiency of a credit granting English composition course.
Course Offered: Fall, Summer
Credits:

TECHNOLOGY MANAGEMENT (ETM)

ETM 501 Engineering Quality Management and Reliability
This course covers the normal or Gaussian distribution, standard deviation, and confidence intervals including six-sigma. Advanced statistical concepts and methods are covered with an emphasis on implementation and practical applications. Monitoring and controlling product quality using statistical methods and parametric control charts is an integral part of this course. The principles of reliability engineering and their practical applications, including basic probability models for engineering components and systems failure, are presented with emphasis on practice oriented problem-solving class projects. Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Fall
Credits:

ETM 503 Research Methods for Tech Mgmt
In this course the students will be introduced to current statistical analysis methods and modern data acquisition techniques by utilizing the most recent computer software applications. Introducing the students to advanced sensor technologies for measurements of pressure, temperature, humidity and flow rate through wireless data communication is an integral part of this course. Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Spring
Credits:

ETM 510 Energy and Power Management Analysis
This course covers the identification and quantification of energy efficiency expressions for various energy sources. Greenhouse gas (GHG) emission and reduction methods and environmental management materials and techniques used in fossil fuel powered systems are discussed. Evaluation and comparison of the economic viability of both renewable and nonrenewable energy technologies, as well as monitoring, targeting, and forecasting (MT&F) their consumption, are integral elements of this course. Energy consumption management methods and techniques to help energy savings are also studied. Prerequisite(s): BUS 502 with a grade of C or better and Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Spring
Credits:

ETM 511 Nanotechnology Principles and Applications
This course provides students with an overview of nanotechnology, covering the fundamental science and the numerous emerging applications of this interdisciplinary new technology. Starting with a discussion of the scientific principles governing nanotechnology, the course then explores novel approaches to making and characterizing nanomaterials and nanosystems. New optical, electrical, physical, and chemical properties of materials at nanoscale that may have a significant beneficial impact are examined. Emerging applications spanning the areas of bioscience, electronics, energy, the environment and others are explored. Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Fall
Credits:

ETM 513 Computer Applications in Engineering
This course is geared toward the conceptual design, manufacturing and maintenance of technological devices. Students are introduced to different aspects of computer aided design, including solid mechanics, computational fluid dynamics (CFD), motion analysis and heat transfer. Relevant laboratory activities are conducted to acquaint students with constraint-based reasoning and design optimization. Concepts of computational power, parallel computing and cloud computing will be discussed as well. Laboratory course work furthers the application of theoretical concepts. Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator. Corerequiste: ETM 513L
Course Offered: Spring
Credits:

ETM 514 Engineering Analysis
This course examines the concept of engineering analysis. The course focuses on problems drawn from various engineering fields, such as heat transfer, fluid flow, forced oscillations, electric circuits, electric potential, and wave propagation. Topics include matrix algebra, matrix manipulation, application to systems of ordinary differential equations, and vector calculus. Complex numbers and complex analytic methods, matrix algebra packages such as MathCAD, Mathematica, or MATLAB are used. Definitions and basic properties of Legendre, Bessel, and other special functions are covered. Common problems in partial differential equations and solution by separation of variables, Eigen function expansions, Fourier integral, Laplace transform, and Fourier transform also are discussed. Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator
Course Offered: Spring
Credits:

ETM 520 Control Systems Management
This course covers the principles and applications of time invariant linear control systems. Examples are drawn from electromechanical systems, sensors and actuators, electronic systems, active filters, robotics and programmable logic control systems (PLC). Topics covered include: Laplace transform, transfer function, time and frequency domain representations; block diagrams and signal flow graphs; state space representations; analysis and design of feedback control systems. Industry accepted software application such as MATLAB is extensively used throughout the course for projects and assignments. Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Fall
Credits:

ETM 521 Semiconductor Devices and Integrated Circuits
This course focuses on the fundamental concepts and practical perspectives of the semiconductor devices that comprise modern electronic circuits. It provides students with an in-depth understanding of device operating principles, circuit analysis and design methods, and an overview of processing technology. Topics covered include: semiconductor materials and devices; p-n junctions; bipolar junction transistors and field effect transistors; the MOS capacitor, MOSFET and CMOS; integrated circuits, amplifiers and frequency generators; digital integrated circuits; an overview of processing technology; novel nanoscale electronic and photonic devices. Prerequisite(s): Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Fall
Credits:

ETM 530 Residential Development Management
This course covers current homebuilding systems in the United States from design to construction. It includes an overview of the homebuilding industry, housing demand, management of the homebuilding process, the regulatory environment, housing design guidelines, development of contract documents, and the residential construction process. It also covers structural, mechanical, electrical, and plumbing systems. Prerequisite(s): BUS 502 with a grade of C or better and Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Spring
Credits:

ETM 531 Construction Cost Analysis and Advanced Estimating
This course covers the emerging techniques of construction cost analysis and advanced estimating. It includes estimating cycles, data collection and data sources for estimating, cost index, cost capacity factors, parameter cost, trade-off analysis, break-even analysis, depreciation, overhead, time value of money, rate-of-return analysis and forecasting. It also covers bid strategies, life cycle cost analysis, and cost-benefit ratio analysis. Prerequisite(s): BUS 502 with a grade of C or better and Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Spring
Credits:

ETM 533 Heavy Construction Operation and Equipment
This course covers current heavy construction practice in the United States in terms of construction planning and optimum use of heavy equipment. It includes earthwork planning, equipment cost, geotechnical materials, machine specifications, trucks and hauling equipment management, aggregate production including concrete and asphalt, cranes, piles and pile driving equipment, and equipment for pumping water for job sites. The course includes ten laboratory experiments, two on planning earthwork, three on geotechnical materials, compaction, and stabilization, one on compressed air, two on aggregate production, and two on concrete production. Prerequisite(s): BUS 502 with a grade of C or better and Graduate Status in ETM and permission of the graduate coordinator.
Corequisite(s): ETM 533L
Course Offered: Fall
Credits:

ETM 550 Intelligent Transportation Sys
This course will cover the fundamentals and applications of Intelligent Transportation Systems (ITS) in regional and international settings. The components of ITS, such as architecture, standards, planning and testing will be examined. ITS user services and applications, along with challenges and opportunities will be studied through in-class examples. The role of ITS in national security will be discussed. Prerequisite(s): Graduate Status in Technology Management and Permission of the Graduate Program Coordinator
Credits:

ETM 551 Transportation Planning Principles
This course will cover the principles of transportation planning and scheduling with a focus on travel demand forecasting, regional and long-term transportation planning and, transportation policies. Trip generation and distribution models will be examined and students will gain hands-on planning and scheduling experience in transit design and planning. The importance of zoning systems, and traffic assignment techniques will be studied. Prerequisite(s): Graduate Status in Technology Management and Permission of the Graduate Program Coordinator
Credits:

ETM 552 Traffic Flow Theory and Operations
This course is designed to provide students an in-depth overview of the macroscopic, microscopic and picoscopic modeling of the traffic flow. In addition, students will gain experience in traffic sensing technologies and their implementation in traffic operations. In class examples will cover the three-dimensional modeling and representation of traffic flow. Students will develop a semester-long project incorporating the methodologies and principles covered in the course to demonstrate the planning of a longitudinal solution to existing traffic operations challenges. Prerequisite(s): Graduate Status in Technology Management and Permission of the Graduate Program Coordinator
Credits:

ETM 555 Transportation and Logistics Management
This course will cover lean principles and their applications to transportation modalities with a focus on strategy development, contract negotiations, process standardization and sustainability, market trends and risk management. The management of transportation logistics will be covered through in-class examples, exercises and discussions.

Prerequisite(s): Graduate Status in Technology Management and Permission of the Graduate Program Coordinator
Credits:

ETM 611 Modern Energy Conversion Technologies
This course provides description and analysis of energy conversion technologies with an emphasis on alternative energy sources including solar, wind turbine, and biomass energy systems. Biomass gasification to produce synthesis gas is discussed. Hydrogen cleanup and separation techniques using water gas shift (WGS) and palladium membrane or electrochemical systems (hydrogen pump) are also discussed. Other energy conversion devices are investigated, including thermoelectric and light-emitting diodes, solid-state refrigerators and Peltier, and Seebeck effects. Prerequisite(s): Graduate status in ETM and permission of the graduate coordinator.
Course Offered: Fall
Credits:

ETM 612 Robotics, Automation, and Control Systems
This course covers different types of robots and their applications and control systems and provides 3D vector presentation for the kinematics and dynamics of robots. Feedback and fuzzy logic control systems are discussed. The use of robotics simulation software is integral throughout the course, which culminates in a project leading to the design and development of robotics integration systems with their peripherals. Prerequisite(s): ETM 520, Graduate Status in ETM and permission of the graduate coordinator.
Course Offered: Spring
Credits:

ETM 623 Optical Communications
This course covers the principles of optical fiber communication systems and optical networks. Topics include optical fibers, propagation characteristics, attenuation and dispersion, optical sources such as light emitting diodes (LEDs) and lasers, passive components, optical receivers, PIN and avalanche photodiodes, optical amplifiers, and optical switches. Optical system design issues are discussed including power budget, bandwidth, Q-factor, and bit error ratio (BER). Wavelength division multiplexing (WDM) systems, nonlinear effects, and modulation techniques are also covered along with optical networks, topologies, and applications. Prerequisite(s): Graduate status in ETM and permission of the graduate coordinator.
Course Offered: Fall
Credits:

ETM 624 Fundamentals of Photovoltaics and Photonics
This course focuses on the principles and applications of optical engineering systems as well as photonics and photovoltaics. Concepts in optical engineering and design of optical systems are covered. Topics include optoelectronic devices, photovoltaic solar cells and systems, photonic devices, and an introduction to LASERs. The operating principles of photovoltaic solar cells, including photon absorption, excitons, generation and recombination processes, carrier densities, and charge transport are covered. Emerging technologies involving nanostructures, quantum dots, and heterojunctions are also discussed. Opportunities and challenges facing the industry as devices are scaled at the nanometer range are explored. Examples of optical device design are drawn from areas of current interest such as photovoltaic solar cells, optical sensors, photonic crystals, and nano-photonics. Prerequisite(s): ETM 503 and ETM 520, graduate status in ETM and permission of the graduate coordinator.
Course Offered: Spring
Credits:

ETM 631 Construction Contracts
This course covers details of construction contracts and related documents, which include contract documents, design phase documents, pre-bid documents, bid submission documents, forms of agreement, and documents supporting the agreement. This course also covers site condition clauses, red flag clauses, insurance contracts, and surety bonds, as well as documentation and record keeping requirements. In addition, labor agreements and joint venture agreements will be discussed. Prerequisite(s): BUS 502 with a grade of C or higher, graduate status in ETM and permission of the graduate coordinator
Course Offered: Spring
Credits:

ETM 670 Master's Project
This is a Capstone course for students who do not plan to take the thesis option. The course is designed as an independent study in which the student utilizes their knowledge in the field to evaluate a series of case studies. A complete oral and written presentation is required of each student detailing their work. In each case study the student must clearly demonstrate their ability to understand, analyze and solve technical and/or managerial problems by applying their knowledge gained through their course work. Students completing this course will not receive credit for BUS 670. Prerequisite(s): Completion of twenty-one (21) credits of required Core and Track Specific Courses in the ETM program and permission of graduate coordinator.
Course Offered: Fall, Spring
Credits:

ETM 671 Master's Thesis
This is an independent study performed by the students to utilize their knowledge in engineering technology management. This practice-oriented work contributes to the enhancement of productivity, the improvement of quality, and the achievement of an industry's cost effectiveness. The master's thesis draws on students' individual interests, stimulating their critical thinking, and sharpening their problem-solving abilities. A literature survey, analysis, discussion, and conclusions are documented in the thesis under the direction of a faculty mentor and presented by the student at the completion of the work to demonstrate their professional competency in their field of study. Students completing this course will not receive credit for BUS 671. Prerequisite(s): Completion of twenty-one (21) credits of required Core and Track Specific Courses in the ETM program and permission of graduate coordinator.
Course Offered: Fall, Spring
Credit:

ETM 680 Special Topics in Technology Management
This special topics course is designed to inspire students to study a specific topic or several related topics that address a special interest in technology management. It will require students to research, investigate, and analyze design, manufacturing, quality, or production issues. The course strategy is established by the instructor and adjusted to respond to students' interest to achieve the class goal of enhancing in-depth understanding of the subject matter. Students taking ETM 680 cannot get credit for BUS 680. Prerequisite(s): Graduate status in the Technology Management and permission of the graduate program coordinator.
Course Offered: Fall, Spring
Credits:

FRENCH (FRE)

FRE 101 French I (Elementary)
A beginning course in French emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Course Offered: Fall, Winter, Spring, Summer
Credits:

FRE 102 French II (Elementary)
A continuation of French 101 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. Prerequisite(s): 2 or 3 years of high school French or FRE 101.
Course Offered: Fall, Spring, Summer
Credits:

FRE 203 French III (Intermediate)
A continuation of FRE 102 for students who have had 3 or 4 years of high school French. This intermediate course further emphasizes the development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. A literary and cultural reader will be introduced. Prerequisite(s): required or 2 or 3 years of high school French.
Course Offered: Fall
Credits:

FRE 204 French IV (Intermediate)
For those students who have taken FRE 203 or four or more years of high school French. This course emphasizes structural review, intensified practice in oral expression with increased emphasis on reading and writing skills. Continued attention will be given to contemporary French culture.

Selections from French authors will be read. Prerequisite(s): Approval of this department chair or FRE 203
Credits:

FRE 301 French V (Advanced)
An advanced conversation/composition course with intensive practice in oral and written French. Prepared discussions and writing assignments on selected cultural historical and literary topics. Prerequisite(s): Approval of this department chair or FRE 204.
Credits:

FRE 302 French VI (Advanced)
A continuation of French V Advanced with intensive practice in oral and written French. Prepared discussions and writing assignments on selected cultural, historical and literary topics. Prerequisite(s): Approval of this department chair or FRE 204.
Credits:

FRESHMAN EXPERIENCE (FRX)

FRX 101 The Freshman Experience
This course will enhance successful adaptation to college life. Topics relate to the academic, social, economic, health, and interactional factors that influence collegiate success. Enrollment is limited to matriculated freshmen only. While this course is open to all students, priority is given to Liberal Arts students. Note: Students taking this course may not receive credit for RAM 101.
Course Offered: Fall, Spring, Summer
Credit:

FRX 103 Career Planning for Freshmen
This course is designed to assist freshmen that are undecided about choosing a future career or major. The course emphasizes self-assessment, critical thinking, problem solving, decision making, educational and vocational planning, and orientation to college and reality testing. A successful adaptation to college is an overall goal of the course.
Course Offered: Fall, Spring, Summer
Credits:

FIRST YEAR SEMINAR (FYS)

FYS 101 First Year Seminar
This course will assist new students in transitioning from high school to college. Students will become familiar with college resources and will learn strategies for academic success. Through group work and problem solving, students will learn to turn to each other, faculty members, support staff, and their AAIC Academic Advisor for support. Note: Students completing FYS 101 may not receive credit for FRX 101.
Course Offered: Fall
Credit:

GEOGRAPHY (GEO)

GEO 110 Maps and Map Analysis
This course is an introduction to the study and design of map formats, symbology, coordinate systems, and how maps record the historical patterns of human behavior. The course will also examine maps as a tool to analyze human activity and societal development, and include important aspects of map data collection, processing, the Global Positioning System (GPS), quantitative mapping, and GIS-based mapmaking techniques. Note: Students who take GEO 110 may not receive credit for GIS 101
Course Offered: Fall, Winter, Spring, Summer
Credits:

GEO 201 Physical Geography
This course introduces students to the study of the Earth as a system. We will cover the four major subsystems--the atmosphere, the hydrosphere, the lithosphere, and the biosphere--with a focus on the patterns and processes that shape the planet. The goal of the course is to provide students with a clear understanding of the complex and changing processes associated with physical geography, especially those which are important for solving environmental and economic problems associated with air, water, soil, flora, fauna, and other aspects of the natural world. Prerequisite(s): EGL 101
Course Offered: Fall, Spring, Summer
Credits:

GEO 201L Physical Geography Laboratory
This physical geography laboratory course can be taken as standalone (1) credit physical science lab or as accompaniment to the GEO201 Physical Geography course. This course introduces students to the study of the Earth as a system. This laboratory is designed to give an overview of the development, distribution, and interrelationships of landforms, climates, minerals, soils, and water resources. Prerequisite(s): EGL 101 EGL 101 with a grade of C or better
Course Offered: Fall, Spring, Summer
Credit:

GEO 211 The World and Its Peoples
This course is an exploration of the rich diversity of cultures and societies of the contemporary world, as well as an introduction to world geography and how it has shaped major developments in global history. Critical readings of recent ethnography will be used to examine themes such as ethnicity and migration, rural life and traditionalism, and family and kinship. Students will also be familiarized with the growth of cities, demographic changes, the development of a leisure culture, and attitudes towards work as we survey the major world regions (Southern Asia, the Pacific Rim, Sub-Saharan Africa, North Africa and the Middle East, the Americas, Europe, and Oceania). Furthermore, we will examine the interaction between humans and their physical environment, interrogate the role of language on national identity among peoples, and trace the evolution of world religions.
Course Offered: Fall, Winter, Spring, Summer
Credits:

GEO 222 Human Geography
This course provides an introduction to human geography in its multiple forms: social, cultural, environmental, urban, economic, and political. Students will explore human interactions through the lenses of community, culture, and society. While the focus will be on human populations, there will also be discussions of how interaction with nature and the environment shape relationships through an analysis of the so-called "Man-Land Tradition." Globalization, cultural diversity, and migration will serve as important themes throughout the course. Prerequisite(s): Any 100-level HIS or POL course
Course Offered: Fall, Spring
Credits:

GEO 231 Europe and Its Peoples
This course is an exploration of the rich diversity of cultures and societies of contemporary Europe, as well as an introduction to the continent's geography and how its unique physical attributes shaped world history. Critical readings of recent ethnography will be used to examine themes such as ethnicity and migration, rural life and traditionalism, and family and kinship. Students will also be familiarized with the growth of cities, demographic changes, the development of a leisure culture, and attitudes towards work in Europe. Furthermore, we will examine the interaction between Europeans and their physical environment, interrogate the role of language on national identity among European peoples, and trace the evolution of religion from paganism to "Post-Christianity." We will also study the development of political culture on the continent and historical and contemporary projects to create a united Europe from the Pax Romana to the European Union.
Course Offered: Fall, Spring
Credits:

GEO 232 North America and Its Peoples
This course is an exploration of the rich diversity of cultures and societies that make up North America (i.e., United States, Canada and Mexico), as well as an introduction to the region's geography and how its unique physical attributes have shaped world history. Readings in spatially-inflected ethnography will be used to examine themes such as indigenous identity and rights, ethnicity and migration, religious practice, rural life, and cultural change. Students will also become familiar with demographic changes, industrialization, urbanization, land use, and the relationship between work and leisure in the region. Furthermore, students will study the development of political culture in the U.S., Canada, and Mexico, and contemporary efforts to bind the three countries through trade and regional cooperation. Prerequisite(s): Any 100-level or higher HIS, POL, GEO or GIS course.
Course Offered: Fall, Spring
Credits:

GEO 290 Topics in Geography
This course offers instruction in special content areas in the field of geography. Students will explore the linkages between physical and human geography, focusing on a particular topic, e.g., globalization, technology, youth, cities, trade and economic development, etc. Students should consult the department before registering for any Special Topics course. Prerequisite(s): Any 100-level or higher HIS, POL, or GEO course
Course Offered: Fall, Spring
Credits:

GEO 322 Cultural Geography
This course takes a critical approach to the study of human-environment interactions, focusing on how various cultural products and norms (as well as differences across cultures) shape our views about each other and the world around us. Students will be introduced to the comparatively new sub-discipline of cultural geography and interrogate the "cultural turn" in the field of geography. Students will engage the complex relationship between the "self" and the "other," addressing the topics of power, economy, race, religion, sexuality, ethnicity, gender, and nationalism. Prerequisite(s): Any 100-level or higher HIS, POL or GEO course
Course Offered: Fall, Spring
Credits:

GEO 323 Urban Geography
This course will trace the historical development of the city from its humble beginnings to its current form and beyond. We will explore the impact of environmental, economic, demographic, sociological, cultural, technological and political forces on the development of the world's urban centers. This course will also explore the effects that urbanization and urbanism has on the lives of the world's citizens and how cities are shaping the future of mankind. In addition to a theoretical treatment of the city, we will also take an in-depth look at the world's great metropolises. By focusing on representative urban centers in different world regions, students will gain insight into the commonalities and differences of cities around the globe. Class discussions will be supported by lectures on the development of urban centers in the United States. Prerequisite(s): Any 100-level or higher HIS, POL, or GEO course
Course Offered: Fall, Spring, Summer
Credits:

GEO 325 Globalization & Sustainability
This course examines spaces and places of globalization and sustainability, focusing on patterns of production, consumption, urbanization, and land use. Concentrating on the period since 1979, the content will address economic, social, cultural, and political change on a global scale. In addition this course will cover questions of environmental degradation, climate change, mass extinctions and other impacts of the Anthropocene era and how these effects can be mitigated through sustainable practices. Prerequisite(s): Any 200-level or higher HIS, POL, or GEO course
Course Offered: Fall, Spring, Summer
Credits:

GEO 330 Environmental Interactions
This course explores important environmental issues in sustainability facing society today. Topics to focus around understanding the changing spatial relationships between people and their environments, the causes and consequences of environmental degradation, strategies for building a more sustainable world, and the methods and approaches that scholars have used to understand human-environment interactions. Prerequisite(s): Any 200-Level Social Science Course
Course Offered: Fall, Spring, Summer
Credits:

GEO 390 Special Topics in Geography
This upper-level course offers advanced instruction in special content areas in the field of geography. Students will explore a particular topic, theme, or sub-discipline, e.g., quantitative methods, climate change, race and ethnicity, etc. Students should consult the department before registering for any Special Topics course. Prerequisite(s): Any 200-level or higher HIS, POL or GEO course.
Course Offered: Fall, Spring
Credits:

GERMAN (GER)

GER 111 German I (Elementary)
A beginning course in German emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Course Offered: Fall, Summer
Credits:

GER 112 German II (Elementary)
A continuation of German 111 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. Prerequisite(s): 2 or 3 years of high school German or GER 111.
Course Offered: Fall, Summer
Credits:

GER 213 German III (Intermediate)
A continuation of GER 112 for students who have had 3 or 4 years of high school German. This course emphasizes the development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. A literary and cultural reader will be introduced. Prerequisite(s): GER 112
Course Offered: Spring
Credits:

GER 214 German IV (Intermediate)
For those students who have taken GER 213 or four or more years of high school German. This course emphasizes structural review, intensified practice in oral expression with increased emphasis on reading and writing skills. Continued attention will be given to contemporary German culture. Selections from German authors will be read. Prerequisite(s): GER 213
Credits:

GER 301 German V (Advanced)
A course in German which introduces the student who has completed the four basic skills (speaking, listening, reading and writing) to the German language of everyday business. The course gives an insight into united Germany's place in the world market. The topics are general enough to be of interest to most intermediate and advanced students, but at the same time offer preparation for the business minded student. Prerequisite(s): GER 214
Credits:

GER 302 German VI (Advanced)
A continuation of German V Advanced. Prerequisite(s): GER 301
Credits:

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

GIS 101 The Digital Earth
This class is an introduction to the fundamentals of geospatial technology, the ways in which that technology can be used to understand human and biophysical phenomena, and the ways that technology affects contemporary life. This class will introduce geographic information systems (GIS), the Global Positioning System (GPS), remote sensing, and spatial analysis. This class will also address social and ethical issues raised by the use of those technologies. Hands-on exercises will be incorporated to give students a deeper understanding of geospatial technology and how it can be used to answer meaningful questions. Note: Students who take GIS 101 may not receive credit for GEO 110
Course Offered: Fall, Spring, Summer
Credits:

GIS 201 Mathematical Principles in Geography
This course demystifies the mathematics used in the manipulation of spatially related data. Students learn a step-by-step approach through the basics of arithmetic, algebra, geometry, trigonometry and calculus that underpin the management of spatially related data. Course topics include; overview of the most common symbols and operations for learners with no or very little knowledge of mathematics and an overview in concepts that builds a sufficient understanding basic math principles needed to excel in geography, GIS and spatial analysis. For a description of MP3 placement level please see the current College Catalog. Prerequisite(s): MP3 or MTH 116

Credits:

GIS 222 Geovisualization I
Geographic information systems (GIS) are computer systems designed for the creation, storage, retrieval, analysis, and visualization of spatial data. GIS is applied across fields as diverse as urban planning, environmental management, law enforcement, industrial location, and marketing, and for scientific research in many disciplines. This course is a hands-on course with a required lab period which will introduce students to foundational concepts and skills in working with spatial data, including finding and creating data, spatial analysis, and GIS-based map production. This course is a prerequisite for several upper-level GEO courses. Prerequisite(s): EGL 101, GEO 110 Corequisite(s): GIS 221L
Course Offered: Fall, Spring, Summer
Credits:

GIS 231 Geospatial Research Methods
This course exposes students to the process of doing geographic research. Basic epistemological and ontological approaches will be reviewed through the use of readings on research methodologies and selected readings from the geography literature. Class discussion will focus on the identification of research problems, construction of hypotheses, and development of research design. The course will cover a variety of important contemporary geographic theories and will complete exercises to give students hands-on experience in completing qualitative and quantitative geographic research. Prerequisite(s): EGL 101, MTH 110 and Any 200-Level or Higher GEO course.
Course Offered: Spring
Credits:

GIS 301 cience
This course will cover fundamentals of geographic information science (GIScience), the application of geographic information systems (GIS) technology to scientific inquiry involving geospatial data. GIScience intersects with fields as diverse as epidemiology, urban studies, environmental science, criminal justice, public policy, business management, marketing, data science, etc. This course offers hands-on application of techniques for the capture, storage, processing, analysis, and communication of geospatial data Prerequisite(s): EGL 101 with a grade of C or higher and (any 200 level or higher GEO course, or MTH 110) all with a grade of C or higher and Junior Level Status.
Credits:

GIS 302 Remote Sensing
This course, including its required lab component, will explore some of the ways in which remote sensing systems provide geospatial information that is relevant, accurate, timely, accessible, available in an appropriate format, and cost-effective. Recent developments in Earth observation such as imaging radar, LiDAR and hyperspectral sensors are increasing the wealth of information that can be generated from remotely sensed data sources. As a consequence numerous new GIS applications that rely on advanced remotely sensed data sources have emerged at local, regional and global scales. Course will cover topics including; remote sensing principles, image acquisition, image analysis and GIS/Remote Sensing Applications. Prerequisite(s): (MTH 110 or MTH 116 or MTH 117 or MTH129) and (Junior-Level status or permission of the department chair) Corequisite(s): GIS 302L
Course Offered: Fall, Spring
Credits:

GIS 303L cience Lab
This course is a stand-alone lab that covers fundamental techniques used in GIScience, the application of geographic information systems (GIS) in scientific inquiry using geospatial data. This course will focus on GIScience for the analysis of data on natural phenomena, and the synthesis of environmental and social data to assess hazard, risk, and vulnerability. Prerequisite(s): MTH 110 with a grade of C or higher and Junior-Level standing
Credit:

GIS 321 Geovisualization II
Maps can be powerful devices for communication, but also tools for exploration of relationships among social and physical processes manifesting in space. This course explores the history, science, and art of cartography. Students will use geographic information systems software to make reference and thematic maps. Students will apply principles of cartography, including the use of color, typography, and visual balance, to create maps which are informative, aesthetically pleasing, and ultimately convincing. Prerequisite(s): GIS 222
Course Offered: Fall, Spring, Summer
Credits:

GIS 322 Geovisualization III
This course explores selected techniques for deploying interactive, internet-based geovisualizations using both proprietary and open-source platforms. The focus of this course is client-side technologies that integrate a variety of geospatial data services using standard protocols and APIs. This is a hands-on course where students apply both standard and emerging practices for effective and attractive communication of geospatial information to a variety of audiences. Prerequisite(s): GIS 222 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

GIS 331 Spatial Analysis I
This course will cover statistical techniques for the analysis of spatial data, including spatial cluster detection, factor analysis, ANOVA, and multivariate regression. Special attention will be paid to spatial sampling and spatial autocorrelation. Students will complete computer exercises using statistical software. In addition to standard data visualization techniques (boxplots, histograms, scatterplots), students will learn how to create basic statistical maps for geovisualization. Prerequisite(s): MTH 110
Course Offered: Fall
Credits:

GIS 332 Spatial Analysis II
This upper-level course integrates geographic information systems (GIS) and spatial data analysis, with a focus on quantitative and qualitative methods, procedures for research design, and interpretation of findings. Topics include identification of spatial patterns, hypothesis testing, effective use of statistics, and data correlation. Prerequisite(s): MTH 110, GEO 221 or GIS 222 or permission of department chair.
Course Offered: Spring
Credits:

GIS 341 Geoprocessing I
This course introduces conceptual and practical aspects of programming for geographic applications. The main focus of this course is on developing a solid understanding of basic geoprocessing techniques including variables, looping, conditional statements, nesting, math, strings, and other concepts. Students in this course will develop a proficiency in applying these basic geoprocessing principles to manipulating spatial data sources within the Geographic Information Systems (GIS) environment. NOTE: This course are not substitutes for programming courses by the Computer Systems Department. Prerequisite(s): GIS 222 with a grade of C or higher
Course Offered: Spring
Credits:

GIS 342 Geodatabase Management
GIS database management systems play an important role in domains that involve large and complex data with spatial references. This course is designed to give students an overview of GIS applications, an understanding of spatial and relational database concepts, and the practical experience of using GIS to solve real world problems. NOTE: This courses are not substitutes for programming courses by the Computer Systems Department. Prerequisite(s): GIS 222 with a grade of C or higher
Course Offered: Fall
Credits:

GIS 351 and Public Health
This course covers the uses of geographic information systems (GIS) in public health. Possible topics include access to health services, the spatial clustering of health events, analysis of environmental hazards, the effective visualization and communication of information derived from geospatial data, and the evidence-based formulation of public policy based on the analysis of geospatial data. Skills developed in this class can enhance existing professional capabilities, and provide a stronger foundation for research performed during graduate study. Prerequisite(s): MTH 110 with a grade of C or higher and Junior-Level status
Credits:

GIS 352 and Municipal Government
This course covers the uses of geographic information systems (GIS) in municipal government. Topics covered include the acquisition of municipal geospatial data from diverse sources, the processing of structured and unstructured data into usable GIS formats, basic analysis of geospatial data to answer frequently-asked questions, and the publication of effective

visualizations of geospatial data. Students will develop fundamental skills used by GIS technicians working for municipal government, and those skills can be used to enhance existing professional capabilities, or provide a foundation for deeper study of GIS technology. Prerequisite(s): MTH 110 with a grade of C or higher and Junior-Level status
Credits:

GIS 391 Practicum
This is an applied learning course where students will learn GIS skills and perform GIS tasks in coordination with one or more community partners. Under the direct guidance of a faculty member, students will work together to complete defined project based assignments. Students will gain entry-level GIS experience, develop soft skills useful in all lines of work, and build professional relationships. Prerequisite(s): GIS 222 with a grade of C or higher and instructor approval
Credits:

GIS 431 Spatial Analysis III
The course will tackle the problem of analyzing spatial data with the R programming language. Different types of spatial data will be covered, such as point patterns, lattice data and data coming from irregular measurements of continuous processes (geostatistics). In addition, different worked examples will be presented showing how to proceed with the analysis of a wide range of spatial data sets. The topics of the course will contain an introduction to various R packages for the analysis of spatial data. This includes data import/export, data management and visualization, and how to fit a broad range of models for spatial data. The worked examples will focus on particular real data sets from Epidemiology, Environmental Sciences, Ecology, Economics and others. Prerequisite(s): GIS 331 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

GIS 432 Location Modeling and Analysis
This course covers issues and approaches in location analysis. Topics include location theory and models; representation issues; use of geographic information systems (GIS) for data preparation, analysis and display; evaluation of service areas; land use allocation; accessibility and location conflict; and implications for planning and public policy. Prerequisite(s): (GIS 301 or GIS 222) and GIS 331 all with a grade of C or higher
Course Offered: Spring
Credits:

GIS 441 Geoprocessing II
This course is intended to facilitate the student's aptitude in utilizing geographic data, geoprocessing and modeling, as well as increase student's understanding of conceptual issues related to geospatial research and analysis. The topics covered in this course are geospatial automation, creation of raster and vector data; geospatial analytic models, and spatial statistics. This course also covers Python scripting for geoprocessing as flexible approach for the development of spatial models. Course materials will be presented through lectures, discussions of readings, and demonstrations. NOTE: This course is not a substitute for programming courses by the Computer Systems Department. Prerequisite(s): GIS 341 with a grade of C or higher
Course Offered: Spring
Credits:

GIS 491 Senior Seminar in
Students integrate their knowledge of human and physical geography, as well as geographic techniques, to propose solutions to real-world problems. Students gain experience in working in small groups and in written and oral presentation of project results, and will be evaluated with respect to the skills acquired in their degree program. Topics may include, but are not limited to, issues such as sustainable development in rural communities, global and regional food and energy distribution, quantifying and analyzing global or regional indicators of environmental and/or societal trends. Prerequisite(s): Senior status and any 300 level GEO course.
Course Offered: Fall, Spring
Credits:

GIS 492 Internship in
This internship course will provide students the opportunity to gain hands on experience and knowledge with using geospatial technologies. This internship consists of a structured on and/or off-campus experience in a supervised setting that is related to the student's major and career interests. Practical experience is combined with scholarly research under the guidance of geography faculty and the entity providing the internship opportunity. At the end of the internship the student should have more of the necessary skills to help translate their chosen degree into a job, as well as a better understanding of how this degree relates to society. Prerequisite(s): Approval by Program Director or Student's Dept. Chair
Course Offered: Fall, Spring, Summer
Credits:

COMPUTING GRAPHICS (GPH)

GPH 103 Technical Drafting
This is a traditional manual drafting course including orthographic projection, dimensioning, auxiliary projection and pictorial representation. Emphasis will be placed on drafting techniques including lettering, line quality, accuracy and appearance.
Credit:

GPH 104 Introduction to Computer Graphics
This is a laboratory course to provide basic understanding and skills in the College's computer graphics CAD software. Students will learn how to run Computer Aided Drafting (CAD) software on PC's to produce mechanical drawings. They will be taught commands and concepts, and develop the skills required. Some of the topics covered include: setup, drawing, erasing, saving, printing, lines, geometric construction, object snap, text, editing and basic dimensioning.
Credit:

GERONTOLOGY (GRO)

GRO 100 Introduction to Gerontology
This course provides introductory topics in gerontology, including physical, mental, and social aspects associated with aging. It shows the interactions of various types of aging and describes the pathological developments that affect many older people. The course focuses on diversity in the older population. Topics include differing behaviors, traditions, and attitudes among aging. There will be an emphasis on how society is changed when the aging portion of the population increases rapidly.
Credits:

GRO 420 Long-Term Care Administration
This course presents principles of nursing home management and assisted living services which examines administrative and staffing functions relating to clients, community, public policy, programming and financing. It provides a solid foundation in the operational functioning of long-term care facilities in the United States. The health care environment and the health care system are examined to determine how they impact long-term care administration. Both the long-term private and public sectors of health care organization are overviewed. Multiple long-term health care delivery systems are explored as to what they can offer the elderly and special needs populations. Prerequisite(s): HPW 435
Credits:

HISTORY (HIS)

HIS 114 Western Civilization I
A brief survey from ancient Greece and Rome up to 1789, followed by extensive treatment of the ascendancy of early modern Western civilization, together with its social, economic, and political revolutions, from 1500 through the Napoleonic era. NOTE: Students completing HIS 114 and HIS 115 may not receive credit for HIS 126.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HIS 115 Western Civilization II
Traces the spread of Western civilization and the development of the modern world by examining the impact of the forces of romanticism, nationalism, industrialism, and intellectual creativity. NOTE: Students completing HIS 114 and HIS 115 may not receive credit for HIS 126.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HIS 117 World Civilization I
A survey of major non-Western civilizations and their interaction with one another, as well as with the European West from antiquity through the Early

Modern Period. The course will explore ancient polytheistic traditions, the foundations of major world religions (Hinduism, Buddhism, Islam), and the rise of Christianity as a global faith. It will also address non-Western social, political, and economic systems in East Asia, South Asia, the Muslim World, Sub-Saharan Africa, and pre-Columbian America. Note: Students completing HIS 117 and HIS 118 may not receive credit for HIS 126.
Course Offered: Fall, Spring, Summer
Credits:

HIS 118 World Civilization II
A survey of the developing world and its interaction with the West since 1700, the course will explore the chaotic effects of the non-Western world's interaction with European imperial powers, the United States, and Soviet Union, focusing on social, economic, cultural, and political change in East Asia, South Asia, the Middle East, Sub-Saharan Africa, and Latin America. The major themes of the course will center on imperialism, nationalism, modernization, the World Wars, and the Cold War. Note: Students completing HIS 117 and HIS 118 may not receive credit for HIS 126.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HIS 121 U.S. History to Reconstruction
A discussion of the development of the United States from its English origins through Reconstruction, this course shows how a new civilization arose out of revolution, independence, new governmental institutions, and equalitarianism, and illustrating the results of the westward movement, and the causes and consequences of the Civil War. Note: Students completing this course may not receive credit for HIS 125.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HIS 122 U.S. History Since Reconstruction
A historical evaluation of American society, assessing Reconstruction, immigration, the nature of imperialism, progressivism, World War I and II, the Cold War, and contemporary American life. Note: Students completing this course may not receive credit for HIS 125.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HIS 127 Sports in American History
This course examines the rise and evolution of sports through an analysis of the narrative of American history from its origins to the present. It provides an exploration of sports history through the historical periodization of American history surveys—from the indigenous Native American tribes of colonial America, to the formation of the Revolutionary and early National eras, to industrialization and reform of the late 19th century, to the emergence of modern and postmodern America, and to the globalizing 21st century. This course gives students a broad understanding of the interplay of race, class, gender, ethnicity and religion in the American experience and of American sports through the use of secondary and primary sources, both written and visual, including documentary and fictive representational texts.
Course Offered: Fall, Spring
Credits:

HIS 200 Introduction to Historical Methods
The purpose of this course is to provide an introduction to historical methods, including how to research historical events, evaluate sources, properly use citations, produce bibliographies, and write about history. The course also focuses on the teaching of history, including effective pedagogical methodologies, the debate over "political correctness," the use of primary sources, employing technology and visual media in the classroom, and how to address issues such as plagiarism. The course may also include an optional historiography component (at the discretion of the instructor), which will focus on a particular historical period and/or geographic region, with the aim of exposing students to breadth and width of historical approaches. Prerequisite(s): EGL 102
Course Offered: Fall, Spring
Credits:

HIS 210 America and the World
This course examines the changing role of the United States in global affairs and its consequences for American society from 1860 to the present. During this period, the US went from an isolated nation to a world power. This class explores such topics as late 19th-century imperialism, American involvement in World War I and II, isolationism and global depression, national security policy and strategy during the Cold War and post-Cold War eras, nuclear proliferation, the War on Terrorism and the balance of power in the 21st century. In addition, this course focuses on world historical themes such as industrialization, population growth, suburbanization and urbanization, and the exploitation of natural resources, and in the process, interrogates within a national and international context the idea of American exceptionalism, the origins and impact of US hegemony, and the use of national histories and ideologies. Prerequisite(s): Any 100 level or higher HIS course.
Course Offered: Spring
Credits:

HIS 212 Modern World
Analyzes the impact of technology on the major political movements and governmental systems of the modern world since 1900. The course will examine the effects of technology on war, culture, ideology and the future.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HIS 213 Peoples and Cultures of Asia
A study of the peoples, cultures, religions, customs and philosophies of India, China, Japan, and southeast Asia, and discussion of the social and political effects of Mongol, Muslim, and Occidental contacts with the Orient.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HIS 214 East Asia and the World
This course examines modern East Asian history and culture as well as the multifaceted interactions between the region and the world in the global age. Focusing on the historical transformation of China, Japan, and Korea since 1200, this course investigates different aspects of political, economic, social, cultural, and intellectual revolution and transformation. The main topics include the following: cultural encounters between the East and West, imperialism (within the region and imposed from abroad), modernity and political transformations, Japanese territorial aggression and the Pacific War, postwar societal and economic change, the growth of the metropolis, Asian diasporas, and the unique qualities of East Asian modernities. Prerequisite(s): EGL 101
Course Offered: Spring
Credits:

HIS 215 The World of Islam
An examination of the birth and development of Islam from its beginning to the present. Special emphasis will be placed on the inter-connection of Islam with Judaism and Christianity and the common basis of monotheism. Topics to be discussed include the Ottoman and Mogul Empires, trade and commerce, urbanization, intellectual movements and class formation in the Islamic world.
Course Offered: Fall, Winter, Spring
Credits:

HIS 216 History of Central Asia: From Genghis to Borat
A study of the history, peoples, cultures, religions, customs, and contemporary politics of Central Asia (Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, and Turkmenistan), as well as the relationship between the region and its neighbors China, Russia, Turkey, and Iran.
Course Offered: Fall, Spring, Summer
Credits:

HIS 217 From Constantine to Columbus: Western Civilization in the Middle Ages
This course will examine the development of the major cultural, social, and political movements and institutions of Western Civilization in the period before Columbus. Through both lecture and discussion formats, students will examine the preservation of Greek and Roman learning; Christian civilization and its relation with Islamic culture; the rise of cities, international trade and national capitalism; European learning and the emergence of the university; the rise of the nation-state and the origins of secularism. By the end of the course, students will be able to identify the roots and explain the development of cultural, social, and political institutions that are unique to the Western world.
Course Offered: Spring
Credits:

HIS 219 Topics in History
A treatment of diverse topics, chosen by the Department of History, Economics, and Politics for their long-term impact and current historical importance.

Course Offered: Fall, Spring
Credits:

HIS 222 Women in U.S. History
In what ways is the history of America a gendered history? Emphasizing the diversity of American women, the course situates the ways women have both shaped and been shaped by American society within the broader context of US history since 1865. Topics for investigation include the way different groups of women have experienced American sectionalism, the industrial revolution, urbanization, immigration, war, economic depression, cultural transformations and political change. We will be looking at both unity and diversity in American society, including the conflicts between women and a society based on patriarchy.
Course Offered: Spring
Credits:

HIS 233 Comparative Religions and Cultures
A survey of religions of the East and the region of the Mediterranean, with discussion of their impact on the lives of individuals, and on cultures and other societies through the interrelationship of value systems.
Course Offered: Summer
Credits:

HIS 240 History of Public Health Care and Medicine
An examination of the historical development of health and medical care in societies, both Western and non-Western, from ancient times to contemporary America. An emphasis on scientific and technological advancement, care of the ill, treatment of disease, and training of health care practitioners. Discussion of the values of each historical period and the relationships between social values, ethics, and prescribed health care.
Course Offered: Fall, Summer
Credits:

HIS 243 Science and the West: From Newton to Present
This course traces the development of western society from the 16th century to present, focusing specifically on how scientific and technological developments have shaped modern western society and culture. The course proceeds chronologically from the scientific revolution of the 16th century to the present atomic age.
Course Offered: Summer
Credits:

HIS 270 Genocide in the Twentieth Century
The course explores the history of ethnic, religious, and other forms of genocide during the twentieth century. The topics covered will include the Armenian massacres of 1915-1923, the Jewish Holocaust (Shoah), and the Roma Porajmos, as well more recent examples of genocide, including events in Cambodia, Bosnia, and Rwanda. Students will also critically assess other claims of genocide in world history, focusing on related issues such as ethnic cleansing, forced population transfers, etc. Prerequisite(s): Any 100-level or higher HIS or POL course
Course Offered: Spring
Credits:

HIS 280 Caribbean History
This course explores the Caribbean Basin and places it in the historical context of the larger Atlantic World. The course begins with the arrival of Columbus in the Caribbean Islands and the conquest of the region by Spain. Subsequently, the course will explore the development of the sugar industry, the introduction of African slaves, and the arrival of other European powers in the region, including the French, English and Dutch. Additionally, this course will trace the development of Caribbean nations during the 19th century and their subsequent struggles for economic and political survival. The primary focus of the course will be on the larger islands of Cuba, Hispaniola (Haiti and the Dominican Republic), Jamaica, Cuba, and Puerto Rico, with a brief overview of the Lesser Antilles. Prerequisite(s): EGL 101
Course Offered: Fall
Credits:

HIS 281 Modern Latin America
This course covers the history of Latin America from the early 1800s until the early 2000s, beginning with the immediate causes and antecedents of the Independence Wars. Subsequent topics include: political and social conflicts in the post-independence period; the rise of the United States as an important economic and political player in the 19th century; industrialization and modernization of Latin America including participation of the region in the war effort during World War II. The course concludes with the political repercussions of the Cold War in the region, and its connection to the neoliberal economic policies established in the 1990s and early 2000s. Special attention will be paid to gender, class, race, and ethnicity, and their influence in the sociopolitical developments of Latin America. Prerequisite(s): EGL 101
Course Offered: Fall, Summer
Credits:

HIS 302 Civil War and Reconstruction
This course examines the primary themes of the Civil War and Reconstruction era through secondary and primary texts within a discussion format. Students are introduced to the origins of the sectional conflict during the antebellum period, the relevance of slavery to the conflict, the formation of southern nationalism and secession, the social, political and economic dimensions of the war effort, emancipation, Reconstruction and Redemption, and the legacy of the war. Prerequisite(s): HIS 121.
Course Offered: Fall, Summer
Credits:

HIS 305 Culture and Technology in England
This course is a multidisciplinary examination of the ways in which technology affected everyday life during the Industrial Revolution in England. Covering the years 1750 to 1880, it examines the changes taking place in technology during the period; how these changes ultimately affected the workplace, the home, and the community and how novelists of the period felt about these changes. Note: Students completing this course may not receive credit for HUM 305 or SOC 305. Prerequisite(s): EGL 102 and One social science course or HIS 114 and HIS 115.
Course Offered: Fall, Summer
Credits:

HIS 306 Transformation of America
A detailed study of the technological, economic, social, political, ideological and cultural transition of America from a rural, agrarian republic to a complex, industrialized, urban nation in the period from 1820 - 1920. This interdisciplinary course uses primary and secondary material to examine the effect of technology and urbanization on American life. A multi-cultural and cross-gender perspective will provide focus. Note: Students completing this course may not receive credit for EGL 306. Prerequisite(s): EGL 101
Course Offered: Summer
Credits:

HIS 307 Germany in the Modern Age
Examines the scientific, technological, political, and cultural development of modern Germany since the Industrial Revolution. Special emphasis to be placed on the interaction of technological developments and their impact on culture, society, and politics from 1815 to the present. Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Fall, Summer
Credits:

HIS 310 Technology and Society Russia-1917-Present
This course examines the connections between industrialization, culture, society, and politics in the Soviet Union and post-Soviet Russia. Topics of discussion include the development of Russian communism, collectivization, the Cold War, ethnicity and religion, and post-Soviet politics and culture. Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Fall
Credits:

HIS 311 China Since 1840
This course is a survey of the major political, social, intellectual, and cultural developments in China from the First Opium War to the present. Using primary texts (historical documents) and other scholarly resources, this course investigates different aspects of China's various "revolutions" (political, social, cultural, and intellectual). The main topics include the encounter between East and West, the transition from an empire to a nation-state, the New Culture Movement, as well as the making of a new vernacular language, the growth of the metropolis, and the various facets of Chinese modernity. Prerequisite(s): Any 100-level or higher HIS course
Course Offered: Fall
Credits:

HIS 312 Latin American Popular Culture in the 20th Century
This course will explore mass mediated popular culture developed in Latin America within the last century. Cultural industries (i.e. music, television, etc.) are a significant export to the international market from countries like Mexico, Brazil, and Argentina. The class will discuss the different definitions of popular culture and analyze the impact of mass media on such definitions. The class will also examine a variety of cultural productions, including music (i.e. tango, salsa, and reggaeton), cinema, comic books, and telenovelas (Latin American soap operas). Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Spring
Credits:

HIS 314 History of Modern Mexico
This course will examine Mexican history from the Porfiriato period (1876-1910) until the 2000 electoral defeat of the PRI (Partido Revolucionario Institucional). We will begin by studying how the aggressive modernization campaign of dictator Porfirio Diaz created the deep inequality that eventually led to the Mexican Revolution of 1910. The Revolution was (and is) a crucial moment in Mexican history. This course will analyze its main players and the social, political, and ideological legacies of the conflict. Students will investigate the post-revolutionary period and the one party authoritarian state that dominated the political and social life of the country for over half a century. Prerequisite(s): Any 200-level HIS, POL, or GEO course
Course Offered: Spring
Credits:

HIS 315 Imperialism: A Modern History
The rise and fall of empires is fundamental to world history. Beginning with the First Opium War and concluding with East Timor's independence from Portugal, this course explores how Europe's maritime empires (Britain, France, Spain, Netherlands, etc.) and continental imperial states (Russia, Austria, and Turkey) acquired, maintained, and ultimately lost their vast colonial possessions in the Americas, Europe, Africa, Asia, and Oceania. Using cross-disciplinary approaches, the connections between imperialism and commercial, technological, and industrial advancement will be explored through analysis of various forms of imperialism, including political, economic, and cultural, as well as its discourses and practices. Related issues such as power, hegemony, capitalism, consumerism, and decolonization will also be examined. The course content may focus on a particular area of the globe (e.g., East Asia, the Middle East, or Latin America) or a particular theme associated with imperialism (e.g., gender, migration, identity, etc.). Prerequisite(s): Any 100-level or higher HIS course
Course Offered: Fall
Credits:

HIS 317 Irish History
The study of Irish history with a view toward understanding the development of the Irish nation focused upon matters political, legal, religious, and military in nature. Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Spring
Credits:

HIS 318 Israel: A History of the Jewish State
This course provides a comprehensive history of the modern state of Israel. Beginning with Zionism and the settlement of Jews in Ottoman Palestine, we will explore the complex and troubled history of the country up to the present day. Special focus will be placed on the Palestinian issue, the Arab-Israeli conflict, terrorism and counterterrorism, and geopolitics in the Middle East. In addition to the history and politics, we will also explore culture, society, and economics in contemporary Israel. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Spring
Credits:

HIS 319 Special Topics in History
A treatment of diverse topics, chose by the department for their current historical import. The course will require extensive reading and writing. Depending on the topic, travel students should check with the department before registering for this course. Prerequisite(s): Any 100 level or higher HIS course.
Course Offered: Fall, Spring, Summer
Credits:

HIS 320 Europe Since the Industrial Revolution
This course examines European history from the period of the Industrial Revolution to the present. Special focus will be placed on how scientific and technological developments impacted politics, society, and culture in Europe and the West more generally. The histories of individual European nation-states will be discussed, as well as major revolutions, periods of intense social change, and the two world wars. Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Fall, Summer
Credits:

HIS 322 American History through Film
This history course explores the relationship between historical interpretation and representation through feature films and historical writing. Students analyze key themes, myths, and issues in the American experience by analyzing and contrasting cinematic constructions with written historical texts. The themes studied in this class include the frontier West and rugged individualism, the immigrant experience, the American Dream and assimilation cultural conflict and conquest, war and democratic freedom technological progress and morality, youth and rebellion, power and personality, race and equality, and social change, class and intolerance. Prerequisite(s): HIS 121 or HIS 122 or HIS 125 or Approval of department Chair.
Course Offered: Fall, Summer
Credits:

HIS 323 Contemporary America
Depicts America's responses to the Cold War, violence, and military aggression, the emergence of Third World countries, the economic and political impact of rising expectations, the problems of the city and the suburbs, and the quest for social justice. Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Fall, Summer
Credits:

HIS 324 Roots of Black Americans
This course examines the primary themes and topics in African-American History from 1600 to the present. It will analyze the roles of African-America's past by emphasizing the connections between social, political, and economic patterns, trends, and developments, and as such, will integrate and situate African-American History into the larger exploration of the history of the nation. The course will focus on the forced migration of Africans during the middle passage, the development of racial slavery, the origins and evolution of racism, the emergence of plantation society, the implications of the American revolution for slavery and equality, the formation of the abolitionist movement and the proslavery defense, antebellum slave culture and consciousness, the Civil War and emancipation, reconstruction the legalization of segregation, institutional resistance and African-American community, the new deal and political realignment, the civil rights movement and its fragmentation. Prerequisite(s): Any 100-level or higher course in HIS
Course Offered: Spring
Credits:

HIS 325 America and the Vietnam War
An examination of American involvement in the Vietnam conflict from its origins in the Cold War to its legacies today. It will adopt a multidisciplinary approach and use a variety of mediums, integrating history, literature, and film and utilizing lectures, guest speakers, and discussions. Particular attention will be given to cultural origins and effects of the War. Prerequisite(s): Any 100-level or higher course in HIS
Course Offered: Fall, Summer
Credits:

HIS 330 Oral History
What happens to our memories after we are gone? Oral history is one way to preserve memories. Oral histories are one of the most important tools in the historian's trade. Sometimes an oral history is the only record we have of an event or an entire people, which means the oral historian has a special responsibility. This is a hands-on course, which requires that students successfully complete an online Human Research Participants Training program and learn about theories of memory as they prepare for, conduct, and preserve an oral interview. Prerequisite(s): Junior Status
Course Offered: Fall
Credits:

HIS 331 History of New York State
This course will examine the development of New York State from its Native American, Dutch, and British colonial origins until today. The course provides an overview and in- depth discussion of the state's history and evolution as part of the United States, its founding ideas and institutions, and how it emerged as the Empire State we know today. In particular, the course will examine the following themes: political parties, ideology, and conflict; race, ethnicity and immigration; the economy, labor, and entrepreneurship; war and society. Prerequisite(s): HIS 121 or HIS 122 or HIS 125
Course Offered: Fall, Summer
Credits:

HIS 332 American Military History
American Military History is a multidimensional survey of the evolution of American Military organization, traditions methods from the colonial era to the onset of asymmetrical warfare in the Middle East. The course will present and analyze the key military events, leaders and strategists, including their influence on, and influence by, political considerations, global interests, public opinion as well as technological and economic factors. Prerequisite(s): HIS 121 or HIS 122 or HIS 125
Course Offered: Fall, Spring
Credits:

HIS 333 The 1960's in America
This course examines the people, events and issues of the era through a thematic approach within a larger chronological framework and focuses on domestic social, cultural and political developments. Because the 1960s contained so many seemingly disparate topics and issues, the class will emphasize the connections between and across a broad variety of subjects and disciplines. Topics include the seeds of change during the 1950's; the triumph and breakdown of postwar liberalism; insurgent political and social movements, including the civil rights movement, feminism, antiwar protest, and the New Left; the counterculture; the sexual revolution; drug culture; technology; music; and the legacy of the Sixties. Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Fall
Credits:

HIS 334 The History of New York City
This course examines the origins of New York City as a small Dutch settlement known as New Amsterdam through its incarnation as a mercantile British colony, its growth as a commercial and later industrial metropolis, its emergence as a center of capital and modernity, and its ascendancy along with its decline and subsequent resurgence as a center of global capitalism during the 20th and 21st centuries. The course focuses on the social history of New York City, though it explores cultural, political, technological and economic developments and issues that defined its evolution. As such, the course topics include the influences of ethnicity and race on the city, the definitions, contestations and uses of social spaces, the social lives and roles of upper, middle and lower classes, the lore and intrigue of the larger than life personalities and infamous incidents in shaping the City's history, and the legendary conflicts over urban planning, use and design. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Fall, Spring, Summer
Credits:

HIS 335 Gender and Technology in Historical Perspectives
The purpose of this course is to provide an overview of the connections between gender roles and technology from comparative and historical perspectives. Studying the past in this way sheds light on key global issues today. How does technology shape feminine and masculine identities in the developed world? What happens to preconceived notions of gender relations and gender identities when the developed world and developing world come into contact? This course focuses on the interaction between technology and gender in the age of globalization and is intended to be interdisciplinary and may begin with a dash of sociology or anthropology, dissecting gender roles in our world today. It will also examine the historical connections between gender roles and technology specifically in the United States. At the discretion of the instructor, topics to investigate may include the function of gender and technology in European exploration, European imperialism, and U.S. expansion. Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Summer
Credits:

HIS 340 History of Public Health Care and Medicine
The course compares how different societies conceptualize and manage the experiences of birth, illness, and death. Examining shifts in biomedical understandings of disease and transformations in public health practice over time will provide a deeper, historical perspective on current issues in American medicine. Prerequisite(s): Junior Status
Course Offered: Summer
Credits:

HIS 341 Terrorism and the Modern World
This course traces the global impact of terror and terrorism since the first use of the term in 1795. Much of the course focuses on the use of political violence by non-state actors and revolutionary organizations operating both at a domestic and international level. We will compare and contrast the various "waves" of terror which have gripped the globe since the late 1800s and analyze the similarities and differences between groups such as the IRA, the Ku Klux Klan, and al Qaeda. We will also explore state-based terror, specifically the use of fear, surveillance, and the secret police by various regimes in the 19th and 20th centuries. The role of media as an enabler of terrorism and terrorists will also be an important theme throughout the semester. Prerequisite(s): Any 100-level or higher HIS course or EGL 102.
Course Offered: Summer
Credits:

HIS 342 The History of Television
Despite the recent emergence of new communication technologies, television arguably remains the most powerful and important form of communication today--a medium that influences and shapes our views of ourselves and our outlooks on the world. Television helps to bind us together through shared cultural distortions of our social experiences and relations and yet divides us over its short- and- long-term effects, both national and global. This course explores American culture during the post World War II period through an analysis of the history of television from its origins in radio to its future in digital media. It examines television's role in both reflecting and constituting American society through a variety of analytical approaches. The course topics include the structure, economics and dynamics of the television industry, the role of television within American democracy, the variety of television genres, television as a site of gender and racial identity formation, television's role in everyday life, and the medium's technological and social impacts. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Summer
Credits:

HIS 343 Cinema and the City in East Asia
This is an interdisciplinary, seminar-style course that focuses on the history, culture, society, and everyday life in major urban centers in East Asia as depicted in film. This course draws on movies set in major cities, including Tokyo, Kyoto, Beijing, Shanghai, Hong Kong, Taipei, and Seoul. This course will address such topics as metropolis and modernity, women and gender, war and trauma, love and family relationships, modern and contemporary media, urban and rural contrasts, as well as perceptions of time, identity, and globalization. Prerequisite(s): Any 100-level or higher HIS course
Course Offered: Fall
Credits:

HIS 344 Sports History Since 1945
This course examines the rapid growth of the appeal and role of sports in American life since 1945, especially the ways the sports industry in the United States has shaped class, racial, gender, and national identities. Through the examination of a diversity of professional and college sports, this course explores the impact of corporate sponsorship and influence, drug use, the presence of women and African American players, new technologies and other effects as the function of larger changes in American society. Students will explore the role of sports in both encouraging good citizenship and morality and in condoning cheating, violent behavior and financial greed. Prerequisite(s): (Any 200-level course from the following dept: GEO, HIS, POL, PSY, SOC, ANT, ECO) or Junior level status
Course Offered: Spring
Credits:

HIS 360 Madness in the Modern Age
What is insanity? How do societies define pathology? How have categories such as gender, race, class, and sexuality shaped views of mental health? Answering these questions highlights why psychiatry is one of the most complex fields of medicine today. This course will explore the answers to these questions by examining the history of madness. By focusing on the

evolving ways historians have written on the subject of madness, students will learn about issues of interpretation in the production of knowledge. Topics to be covered include madness in antiquity, the asylum movement, early efforts to identify mental illnesses as biochemical disorders, the origins of psychoanalysis, and the development of the Diagnostic and Statistical Manual (DSM). Prerequisite(s): Any 100-level or higher HIS course.
Course Offered: Fall
Credits:

HIS 365 Public History
Why do so many Americans claim to hate history as a subject, yet spend their weekends visiting historic sites, watching historical films, performing genealogical research, or otherwise engaging with the past? This course will explore this question by introducing students to the field of public history. We will study the many ways that history is put to work in the world outside of the classroom. Topics to be covered include oral history, museum studies, walking tours, documentary films, websites, and social media. Prerequisite(s): Any 100- level or higher history course.
Course Offered: Fall
Credits:

HORTICULTURE (HOR)

HOR 100 Introduction to Plant Science
Success in advanced horticulture study requires an understanding of biological processes that operate at the molecular, cellular and organismal levels along with an appreciation for concepts of evolution and ecology. Topics addressed from the perspective of horticulture via lecture and laboratory participation include cell structure and metabolic activities such as respiration and photosynthesis. Students will be introduced to plant life cycles, basic chemistry, plant structure and physiology. Principles of genetics such as probability and Mendelian theory are also explored. Note: For students in the BS program this course serves as a prerequisite for BIO 192 Botany. Needs lab statement. Corequisite(s): HOR 100L
Course Offered: Fall
Credits:

HOR 103 Herbaceous Plants I
Lecture and field study of the nomenclature, identification, ornamental attributes, cultural requirements and horticultural uses of annuals, summer display plants treated as annuals, spring and summer flowering bulbous plants used in gardens. Corequisite(s): HOR 103L (2,2)
Course Offered: Fall
Credits:

HOR 105 Landscape Gardening
Classroom studies in landscape appreciation. The elements and principles of art for creative design with application in lettering, freehand, and perspective drawing. Field application in garden improvement and operation.
Course Offered: Fall
Credit:

HOR 106 Nursery Management
An introductory nursery course in the techniques and practices used in the commercial production of herbaceous perennials, ground covers, deciduous shrubs and trees, conifers, and broadleaved evergreens. Greenhouse and nursery procedures and practices.
Course Offered: Fall
Credit:

HOR 110 Horticulture I
Instruction, orientation and field experience in the various phases of horticulture. Each week the explanation and demonstration of a new subject precedes the assignment to duties/ A rounded experience is the objective. Tools, techniques, and standards of workmanship are taught. Corequisite(s): HOR 110L
Course Offered: Fall
Credits:

HOR 111 Horticulture II-Growth and Development of Cultivated Plants
The performance of landscape plants is influenced by myriad internal and external factors that may limit growth and survival. By understanding the scientific basis for these variables informed professionals can customize growth conditions to promote optimal yield. This course surveys the physiological processes that mitigate plant growth, senescence, dormancy, flowering and propagation. Lab exercises offer an interactive opportunity to investigate phenomena such as dormancy and photoperiod through experimentation, data collection and interpretation. The development of practical horticultural skills is also stressed. Prerequisite(s): HOR 110 Corequisite(s): HOR111L
Course Offered: Spring
Credits:

HOR 112 Soils: The Foundation of Life
Soils serve as the foundation for production in natural ecosystems and human systems. This exploration of soils addresses their geologic formation and properties (physical, chemical and biological). Special attention is given to the focused manipulation of soils to achieve optimum plant performance in landscape situations. Through classroom lecture and investigative laboratory exercises students will develop an appreciation for soil as a dynamic living system with broad implications for agriculture and general society. Corequisite(s): HOR 112L
Course Offered: Fall, Spring
Credits:

HOR 115 Home Landscaping and Maintenance
A survey course designed for the homeowner who is interested in landscaping a home and learning how to maintain plant material. Topics covered include basic design principles, foundation plantings, and the use of flowers in the design; as well as the planting, pruning, fertilizing, and care of plant material used in the design.
Course Offered: Summer
Credits:

HOR 116 Residential Horticulture and Landscape Design
A survey course designed as an elective for non-horticulture majors who are interested in landscaping their homes and learning how to maintain plant materials. Topics covered include basic design principles, foundation plantings, and the use of flowers in the design; as well as the planting, pruning and care of plant material used in the design.
Course Offered: Summer
Credits:

HOR 119 Insects and Diseases of Lawns and Gardens
The nature of insect and disease organisms will be studied. Pest control regulations, insecticides, fungicides, herbicides and equipment are discussed, including identification of common insects and disease of lawns, garden flowers, trees, and shrubs; also weeds and their control. Fruit and vegetable pests are also covered.
Course Offered: Spring
Credits:

HOR 127 Horticultural Seminar
This course provides an overview of the industry, and major areas of development; it will provide an opportunity for students to hear from representatives of the industry. Students will be provided with the basis for an assessment of future career opportunities as well as the opportunity to evaluate their individual needs for continuing education.
Course Offered: Fall
Credit:

HOR 129 Landscape Drafting
The introduction to landscape drafting; including the use of drafting equipment, drawing of landscape symbols, lettering techniques, and perspective drawing.
Course Offered: Fall
Credit:

HOR 131 Landscape Drafting I
This course introduces students to essential drafting techniques and design fundamentals. The student develops graphic skills in landscape drafting and layout by utilizing drafting instruments to produce landscape plans. Students visualize space by learning plan view, orthographic projection, section/elevation design and are introduced to perspective design techniques. Emphasis is placed upon representation, definition, and expression of landscape concepts. Through lectures, workshops and in-class exercises, students explore techniques in black-and-white media. The goal is to learn how to develop drawing skills so that students can present proposed garden designs to clients. Each student is required to produce and present a final set of drawings suitable for presentation to a client or

inclusion in a portfolio. This course has a laboratory component (HOR131L).
Corequisite(s): HOR 131L
Course Offered: Fall
Credits:

HOR 132 Horticulture Practice I
Application of classroom theory to practical situations in the field. Students are assigned to areas in the greenhouse, gardens, nursery, and plant collections to learn and practice the art and skills of gardening. Students are given supervision in the field by faculty and staff from the Horticulture Department.
Course Offered: Summer
Credit:

HOR 133 Landscape Drafting II
This course continues the development of graphic skills introduced in Landscape Drafting I. Students discover how to visualize space by learning perspective design, orthographic projection and section elevation design.
Prerequisite(s): HOR 131 Corequisite(s): HOR 133L
Course Offered: Spring
Credits:

HOR 157 Introductory Floriculture
This course provides an introduction to floriculture and includes basic floral design, preparation, and care and identification of indoor flowering and foliage plants.
Course Offered: Fall
Credit:

HOR 171 Landscape Techniques
This course has two distinct components. During the first half of the course students are introduced to the studio techniques of landscape design including drawing techniques such as perspective design, orthographic projection, section/elevation design, and rendering techniques. In the second half of the course, students are taught the field skills required to install, maintain and improve gardens and landscapes. These techniques are practiced during the laboratory section. Note: Students completing this course cannot receive credit for HOR 133. Prerequisite(s): HOR 131
Corequisite(s): HOR 171L
Course Offered: Spring
Credits:

HOR 201 Arboriculture
This course introduces the theory and application of caring for ornamental trees. Students learn essential techniques including climbing, pruning, bracing, cabling, bark and cavity repair and fertilization. Demonstration techniques, pruning practices and tree climbing skills are also taught.
Prerequisite(s): BIO 192 Corequisite(s): HOR 201L
Course Offered: Fall
Credits:

HOR 203 Greenhouse Management I
A study of greenhouse structures used for commercial production of cut flower and pot plants crops. Various construction and maintenance techniques will be discussed, as well as greenhouse ventilation and cooling equipment. Practical application of greenhouse equipment will be discussed and applied to the production of crops. Corequisite(s): HOR 203L
Course Offered: Spring
Credits:

HOR 204 Herbaceous Plants II
Lecture and field study of the nomenclature, identification, ornamental attributes, cultural requirements and horticultural uses of hardy perennial plants used in gardens including ferns, ornamental grasses, wild flowers, and herbs. Naturalistic woodland and rock gardens are introduced as well as the principles to design perennial borders. Corequisite(s): HOR 204L
Course Offered: Spring
Credits:

HOR 207 Landscape Plans I
The course covers the theory and principles of applying landscape design skills for solving landscape problems. Students learn the design process from creating preliminary sketches to final presentation drawings including, plans, section elevations, freehand and perspective sketches.
Prerequisite(s): HOR 133 Corequisite(s): HOR 270L
Course Offered: Fall
Credits:

HOR 208 Nursery Production
This course explores commercial nursery stock production topics dealing with plant growth patterns and plant responses in relation to soils, water, fertility, planting techniques, spacing requirements and pruning. Additional topics covered include plant production cycles and rotations, and treatment for economy production. Emphasis will be placed on the commercial propagation of woody plants by sexual and asexual means.
Course Offered: Spring
Credit:

HOR 209 Planting Plans I
The course emphasizes the various types of plans the landscape designer must know how to read and draw. Sight analysis, grading plans and planting designs will be covered in detail as they pertain to residential site projects. Additionally students will be shown how to incorporate illustrative visual media to accompany developed plans.
Course Offered: Spring
Credit:

HOR 210 Horticulture Materials and the Environment
This course is intended to focus on various horticultural materials and practices that have an impact on the public and the environment. Discussion and classification of horticultural materials such as fertilizers, growth regulators, pesticides, etc., as well as their regulatory and safety measures will be explored throughout the course. Finally, alternative management practices which reduce the use of horticultural materials and cultural methods will be examined. The current computer software available in the library on various topics will also be utilized during the semester.
Course Offered: Spring
Credits:

HOR 211 Woody Plants I
The Woody Plants courses give a picture primarily of the woody plants grown in nurseries for landscape purposes, and secondly of those found in arboretums, woodlands, and fields of Northeastern United States. Emphasis is on identification, culture, uses, flowers, and fruits, and ecological relationships. Several of the evergreens, broad and narrow leaf, as well as some of the deciduous trees and shrubs will be covered in this first study.
Corequisite(s): 211L
Course Offered: Fall
Credits:

HOR 212 Woody Plants II
A continuation of Woody Plants I covering additional evergreens, broad and narrow leaf, as well as deciduous plants, trees, shrubs, vines and ground covers. Corequisite(s): 212L
Course Offered: Spring
Credits:

HOR 213 Arboriculture II
Advanced theory, practice and field studies of the arboriculture industry, including care and pruning of fruit plants, diagnosis of tree ills, shade tree evaluation, and power equipment. Business practices and organization including management, record keeping, estimating, customer relations, ethics and standards. Prefaced by an overview of the arborist industry.
Course Offered: Fall
Credit:

HOR 214 Horticulture and Turfgrass Equipment
A study of the types of powered equipment used by the industry. Small engines and power sources are studied. Emphasis is placed on selection maintenance and operation of this equipment.
Course Offered: Fall
Credit:

HOR 216 Greenhouse Management II
The study of florist crops, modern technical applications, and cultural requirements, as used in the production of cut flowers and pot plants in the floriculture industry.
Course Offered: Spring
Credit:

HOR 218 Indoor Plants
A study of various plants that are suitable for indoor culture. Emphasis will be placed on identification, propagation, cultural requirements, ecological and aesthetic values. Corequisite(s): HOR 218L
Course Offered: Fall

Credits:

HOR 219 Landscape Construction
This course examines techniques and material selection for designing and building steps, walks, walls, fences and other landscape features and structures. Basic skills in landscape surveying will also be emphasized.
Corequisite(s): HOR 219L
Course Offered: Fall
Credits:

HOR 220 Landscape Plans II
The theory and principles of landscape design are applied to selected landscape problems. Projects comprise preliminary sketches and final presentations in plan, elevation and perspective forms. Students prepare contract documents: plans, specifications and estimates in relationship to comprehensive landscape planning. Prerequisite(s): HOR 207 Corequisite(s): HOR 220L
Course Offered: Spring
Credits:

HOR 223 Floral Design I- Basics
This course is intended for majors and non-majors who seek to develop basic skills of floral design. Students will be given lectures on the selection, availability and use of various materials used in floristry. Additionally, exercises are designed to focus on developing artistic techniques for creating floral works that have personal and commercial value. The structure and mechanics of floral pieces as well as principles, patterns and elements of design are stressed. Topics include traditional arrangements, special occasion arrangements, holiday arrangements as well as wedding and sympathy work. Students are expected to learn and identify the major flowers used in the trade. They will become familiar with the seasonality and availability of floral crops. A separate materials fee applies to cover cost of flowers and supplies used within coursework. Corequisite(s): HOR 223L
Course Offered: Fall, Spring
Credits:

HOR 226 Floral Design II – Advanced
This course allows students with basic floral design knowledge and skills to continue their growth in the field. Through lectures and extensive lab exercises students explore the availability, proper selection and usage of diverse floristry materials. Projects focus on creating designs that have personal aesthetic appeal and functional value for specific purposes such as parties, weddings, funerals, Romantic/English Garden themes, European styles and tropical arrangements. Emphasis is placed on construction at an advanced level both mechanically and artistically. Students work individually and on group projects. Proficiency with florist business skills such as retail orders, cost analysis, client relationships, management of personnel and delivery services is also stressed. Prerequisite(s): HOR 223 with a grade of D or higher Corequisite(s): HOR 226L
Course Offered: Fall, Spring
Credits:

HOR 227 Computer Landscape Graphic Design
The integrated graphics environment of the Macintosh computer combined with contemporary printing technology permits creation of sophisticated landscape graphics. Intended for the landscape design professional who needs an alternative method to present landscape plans or planting plans. This course covers the Macintosh hardware and software available to the landscape designer in order to maximize them to obtain professional results. Prerequisite(s): HOR 131 and HOR 133
Course Offered: Spring
Credit:

HOR 228 Current Horticultural Topics
Topics of current horticultural interest will be selected by the Horticulture Department and covered in depth. The topics to be covered will be announced in the course bulletin each semester the course is offered.
Course Offered: Fall, Spring, Summer
Credits:

HOR 235 Tropical Plants in Costa Rica
By exploring one of the most beautiful and bio-diverse eco- systems of the world students will enrich their course study by having the unique opportunity to combine their understanding of tropical plants, gain the knowledge of their importance, and their role in sustaining the surrounding ecology. In addition, by being immersed in another culture and being engaged in cross- cultural comparisons, students will gain a better understanding of the connection between the physical environment and social environment. Prerequisite(s): Advisement and permission of department chair.
Course Offered: Summer
Credits:

HOR 236 Drainage and Irrigation
The efficiencies of various drainage and irrigation concepts are discussed as they pertain to terrain, soils, climate, and plants being grown. Water sources, availability and storage are taught along with pressure requirements and means of conveyance. When to irrigate, how to irrigate and rates of application are discussed as they relate to soils and terrain. Prerequisite(s): Department approval or HOR 129.
Course Offered: Fall
Credit:

HOR 238 Turfgrass Culture
A study of fine turfgrasses: soil, propagation, maintenance, growth requirements, and identification characteristics. Numerous materials, equipment, operations, usages, programs, and work procedures for proper and efficient management of specialized turfgrass areas, including golf courses and institutional and residential properties are studied. Prerequisite(s): HOR 112 Corequisite(s): HOR 238L
Course Offered: Fall
Credits:

HOR 241 IPM for Landscape Pests
Discussion of alternative pest control programs with emphasis on their safety and environmental quality. Such programs will include: mechanical or physical removal of the pest, biological control such as introduction of beneficial organisms (both micro and macro organisms), and chemical control. Chemical control will be discussed in conjunction with other methods as a last resort.
Course Offered: Spring
Credits:

HOR 248 Woody Plant Diagnostic Technology
This course will cover the techniques and procedures required for proper identification of woody plant problems. The student will be required to draw upon the cumulative educational experiences of the first three semesters in identifying insect disease, site and physiological problems affecting woody plants. The use of keys and integrated control measures will be stressed. Prerequisite(s): HOR 112, 211, 201 Corequisite(s): HOR 248L
Course Offered: Fall, Spring
Credits:

HOR 250 Plant Propagation
A study of the fundamental techniques and the theory and principles involved in the production of horticultural plants by seeds, cuttings, layering, and grafting. Corequisite(s): HOR 250L
Course Offered: Fall, Spring
Credits:

HOR 252 Ecology
The study of the relationships of organisms to their environment and to each other. Emphasis is on plant relationships. Field trips will be taken to various ecological plant communities.
Course Offered: Fall, Summer
Credit:

HOR 255 Interior Landscaping
The course will concentrate on the design, installation and maintenance of interior plantings in both commercial and residential settings. Topics include principles of design, preparation of plans, interior horticultural practices, and cost estimating. Prerequisite(s): HOR 218 Corequisite(s): HOR 255L
Course Offered: Fall, Spring
Credits:

HOR 265 Horticulture: Special Project (A)
This independent study course offers students experience in research and its application to the horticulture industry. Under the direction of a faculty member, students select a topic of interest within their area of specialization. The number of credits will be determined by the complexity of the program agreed upon by the student and the Department Chairperson.
Course Offered: Fall, Winter, Spring, Summer
Credit:

HOR 266 Horticulture: Special Project (B)
This independent study course offers students experience in research and its application to the horticulture industry. Under the direction of a faculty member, students select a topic of interest within their area of specialization. The number of credits will be determined by the complexity of the program agreed upon by the student and the Department Chairperson.
Course Offered: Fall, Winter, Spring, Summer
Credit:

HOR 267 Horticulture: Special Project (C)
This independent study course offers students experience in research and its application to the horticulture industry. Under the direction of a faculty member, students select a topic of interest within their area of specialization. The number of credits will be determined by the complexity of the program agreed upon by the student and the Department Chairperson.
Course Offered: Fall, Winter, Spring, Summer
Credit:

HOR 268 Horticulture: Special Project (D)
This independent study course offers students experience in research and its application to the horticulture industry. Under the direction of a faculty member, students select a topic of interest within their area of specialization. The number of credits will be determined by the complexity of the program agreed upon by the student and the Department Chairperson.
Course Offered: Fall, Winter, Spring, Summer
Credit:

HOR 269 Horticulture: Special Project (E)
This independent study course offers students experience in research and its application to the horticulture industry. Under the direction of a faculty member, students select a topic of interest within their area of specialization. The number of credits will be determined by the complexity of the program agreed upon by the student and the Department Chairperson.
Course Offered: Fall, Winter, Spring, Summer
Credit:

HOR 271 Landscape Engineering Tech
This course will study landscape structures and landscape features with an emphasis on engineering principles and hands on applications. Topics will include: concrete construction, brick, bluestone and modular patios, wall construction, retaining wall engineering, pavings, walks, and drives, fence and gate construction, decorative pools, fountains, drainage structures, landscape lighting, pergolas arbors, gazebos. Labs will consist of engineering layout and construction of patios, decks, fences, etc. Prerequisite(s): HOR 171 Corequisite(s): HOT 271L
Course Offered: Fall
Credits:

HOR 275 Italian Gardens: Art and Nature
This course is held in conjunction with Florence University of the Arts during a three week summer semester in Italy. Participants have the opportunity to study and experience the rich history of Italian gardens, particularly those created during the Renaissance and Baroque ages, in and around Florence. Students become garden detectives and peel away the layers of garden additions, deletions, and restorations in order to understand and experience landscapes as they were first conceived and constructed in the 15th, 16th, and 17th centuries. The contemporary layout, artifacts, and plants within each garden are compared with historic accounts and illustrations depicting the original layout. The patrons, architects, and artists who created and contributed to each garden and the design theories they employed will be discussed "in situ" and through museum visitation.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HOR 290 Internship in Urban Horticulture & Design
An internship within the field of horticulture and landscape design provides students with valuable professional work experience in an appropriate industry setting. Feedback reporting maximizes the potential for reflection, personal and professional growth through discussion with faculty advisors and peer cohorts. This intensive applied learning opportunity supports and enhances classroom activities. Prerequisite(s): Completion of 50 credits with a GPA of 3.0 and/or permission of the Department chair.
Course Offered: Fall, Winter, Spring, Summer
Credits:

HOR 310 Perennial Plant Management
This course is a practical field study addressing the horticultural management of herbaceous perennials plants grown within garden settings. As the growing season progresses, students will experience the growth cycle changes that occur to hardy, herbaceous, perennial plants. Students will learn the maintenance requirements that plant growth dictates and advancing senescence necessitates. Prerequisite(s): HOR 204 Corequisite(s): HOR 310L
Course Offered: Fall, Summer
Credits:

HOR 311 Woody Plants III: Advanced Topics
This course supplements topics addressed in the core woody plant curriculum and expands in new directions. Contemporary topics will be discussed such as native vs. non-native plants, invasive plants and alternatives, xeriscaping and sustainable plant selection. It is hoped that students will hone their ability to select appropriate woody plant material for challenging landscape situations and become aware of contemporary issues in horticulture. Guest speakers, outdoor laboratory exercises and field trips will be organized to complement classroom instruction. Prerequisite(s): HOR 211 and HOR 212 Corequisite(s): HOR 311L
Course Offered: Spring
Credits:

HOR 312 Selecting and Designing with Native Plants
The appropriate selection and use of native plants (herbaceous and woody species) balances aesthetic demands with environmental concerns and the needs of local flora and fauna. This course will first explore the meaning of "native" and the scientific basis for utilizing species indigenous to the New York City metropolitan area. We will then address plant selection in the context of specialized ecological communities and the design of landscapes with native plant material. Classroom instruction will be supplemented with visits by experts and trips to sites that illustrate course concepts. Prerequisite(s): HOR 110
Course Offered: Spring
Credits:

HOR 315 Plants and Society
Plants and their cultivation have been an integral part of human history and will continue to be in the future. Through an in depth look at crops, including ornamental, medicinal and agricultural species, the importance of plants will be examined. Students will learn the major crops of the world, the basic science behind plant breeding, agriculture and plant based pharmaceuticals as well as the importance and limitations of emerging technologies such as genetically modified plants. Prerequisite(s): HOR 111 and BIO 192
Course Offered: Spring
Credits:

HOR 320W Public Garden Management (Writing Intensive)
Students will be introduced to the range of operations that occur within botanic gardens, arboreta, and other public garden institutions, and will develop skills required to become effective managers of these living plant collections. Students will also form communication channels with public garden professions. Course requirements include a research project tailored to the student's career objectives. Following this course it is recommended students pursue a summer public garden internship. This is a writing-intensive course. Note: Students cannot get credit for HOR 320 and 320W; HOR 320W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Ornamental Horticulture Department Prerequisite(s): HOR 110 or 111 and EGL 101 with a grade of C or higher
Course Offered: Fall
Credits:

HOR 325 The Business of Horticulture
The horticulture and landscape industry presents unique business challenges. In this course students will apply horticultural theory to general principles of management, merchandising, advertising and sales as they explore settings within the green industry. Familiarity with these business aspects will allow students who complete the course to better exploit existing opportunities and launch new ventures. Traditional classroom instruction may be supplemented by site visits to horticulture enterprises and lectures delivered by accomplished industry professionals, including program alumni. Prerequisite(s): BUS 111
Course Offered: Spring

Credits:

HOR 328 Principles of Plant Pathology
While often unnoticed, plant diseases can cause significant losses in plant production and in the landscape. In order to reduce these losses, it is necessary to have an understanding of plant pathology. This course explores the types of plant pathogens that horticulturists will likely encounter and how they interact with plants. The process of disease diagnosis and the principles of disease management will also be covered. Laboratory activities will provide the opportunity for students to identify common plant pathogens, diagnose plant diseases, and gain a better understanding of plant/pathogen interactions. Note: Students who have taken BIO 353/354 will not get credit for HOR 328. Prerequisite(s): HOR 111 or BIO 131 Corequisite: HOR 328L
Credits:

HOR 330 Weed Science and Management
Discussion of the origin and history of weed science and weed control. Life cycle, growth and development, weed interference and competition with plants will also be explored. The course will also emphasize physical, cultural, biological and chemical control of weeds. Herbicides and their selectivity, performance and methods of application will also be discussed. Prerequisite(s): HOR 111 or HOR 110 Corequisite(s): HOR 330L
Course Offered: Spring
Credits:

HOR 335 Premaculture
This course is an introduction to permaculture, the practice of designing systems modeled from ecological relationships that respect the land while serving its inhabitants. Topics to be addressed in this course include permaculture theory, systems-thinking, site assessment and analysis -- patterns of sun/shade, drainage, vegetation -- and innovative application techniques. Students apply these topics to a real design project and recommend appropriate permaculture applications such as perennial food production, soil regeneration and integrated water management. Prerequisite(s): HOR 110 and Junior level or permission of Department Chair
Course Offered: Spring
Credits:

HOR 340 The Sustainable Garden
Healthy sustainable landscapes provide benefits to human functioning, health and well being. But just what is a "healthy landscape?" What are the major tenets of "Sustainability?" What does it mean to "Go Green?" In the Sustainable Garden course we will define, investigate and promote sustainable garden design, land development and management practices. We will investigate how to transform sites with and without buildings utilizing integrated sustainable principles. The course will provide students with tools to address increasingly urgent global concerns such as climate change, loss of biodiversity, and resource depletion. It will have value for those who design, construct, operate and maintain landscapes. Prerequisite(s): HOR 131 Corequisite(s): HOR 340L
Course Offered: Fall
Credits:

HOR 345 Urban Planting Design
This course will address plant selection in the context of the design of landscapes in various settings: suburban and urban residential settings; commercial and adaptive reuse settings. We will address design principles and the use of plants for many situations such as foundation plantings, themed gardens, and challenging landscape settings. We will explore contemporary landscape design issues pertaining to native plants, plant communities and landscape restoration, and discuss the proper cultural and maintenance techniques for improving soils, and planting, fertilizing, irrigating, pruning and care of plant materials used in each design setting. Prerequisite(s): HOR 131 and Junior level or permission of department chair.
Course Offered: Spring
Credits:

HOR 350 The Art History of Garden Design and Landscape Architecture
Gardens and cultivated landscapes are works of art whose development offers a historical snapshot of the societies and historical movements that shaped them. Studying the evolution of gardens, landscapes and urban spaces in Europe, Asia and North America allows us to interpret the history, art and cultures of these regions. This historical survey charts the designed landscape from pre-history to the present with an emphasis on the historical perspective, analytical skills and specialized vocabulary necessary to understand and describe gardens, landscapes and the artistic movements they reflect. Note: Students cannot get credit for HOR 350 and 350W; HOR 350W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Ornamental Horticulture Department Prerequisite(s): EGL 101 with a grade of C or higher
Course Offered: Fall
Credits:

HOR 360 Landscape Surveying Skills
This elective course is intended for Landscape Development and General Horticulture students who wish to develop skills in the use of basic surveying instruments such as tape, level and transit. These skills are used to record existing location of structures and ground form. Students will learn to use these methods for installation of new structures and alteration of landform. Conventional methods for recording notes and standard methods in mathematical procedures will be covered. Prerequisite(s): HOR 171 Corequisite(s): HOR 360L
Course Offered: Fall
Credits:

HOR 366 Special Topics in Horticulture
Topics of current interest in ornamental horticulture will be presented and covered in depth. Course material will vary semester to semester and reflect pressing issues and topics facing the field. Subject material will be announced prior to registration for the semester. Prerequisite(s): HOR 112 and HOR 111
Course Offered: Fall, Winter, Spring, Summer
Credits:

HOR 370 Landscape Professional Practices
This is a course about the student's future as a horticulturist, landscape designer, contractor, a business professional and a citizen. Students will learn the skills required to start and manage a professional practice in their chosen field. The basics of business structure, insurance, contracts, and business investment will be addressed. Students will produce a cohesive business plan that incorporates defining their marketplace, developing a communication strategy, and cash-flow planning. They will also learn how to put together a portfolio and make effective use of technology to leverage the efficiency of their existing or proposed practice. Prerequisite(s): HOR 207
Course Offered: Spring
Credits:

HOR 371 Landscape CAD I
This course is an introduction to computer aided design/ drafting. This course includes all the functions of AutoCad plus specific tools and solutions for professionals in the land development industry. This course will focus solely on two-dimensional aspects of AutoCad. Each student will acquire CAD experience from using the program at his or her own workstation. We will perform exercises to develop skills from file set-up to creating 2D drawings to plotting. Our goal in the class is to become comfortable, efficient and competent computer drafters. Each student is required to produce a landscape site plan. Prerequisite(s): HOR 131 Corequisite(s): HOR 371L
Course Offered: Spring
Credits:

HOR 372 Site Engineering I
Landscape construction projects involve modification of the Earth's surface. This course teaches how to design, read and engineer landform. Students will be given an introduction to grading and surveying landscape contours. They will develop knowledge of grading around buildings and roads as well as grading for drainage. Prerequisite(s): HOR 131 Corequisite(s): HOR 372L
Course Offered: Spring
Credits:

HOR 410 Plant Production Technology
This course is intended to study the commercial greenhouse and nursery production of cut flowers, flowering potted plants, and nursery stock. The physiological and flowering responses of plants to light, temperature, nutrients, and gases will be addressed. Plant identification, propagation, production, scheduling, finishing, and marketing for the economic production of greenhouse and nursery crops will be studied. Prerequisite(s): HOR 250 or Department chair approval.
Course Offered: Spring
Credits:

HOR 464 Capstone Prep for Urban Design
This course is designed to insure student success for the landscape development capstone project. Students are challenged to synthesize course theory and skills and begin applying them to individualized design research. Faculty directs the development of individual projects by guiding students to understand and achieve the defined course objectives, accept and integrate the critical commentary of advisory panels, and present their progress through periodic formal reviews. Prerequisite(s): Senior Level Status
Course Offered: Fall
Credit:

HOR 465 Practicum Prep for General Horticulture
This course is designed to ensure student success for the horticulture practicum project. Students are challenged to synthesize course theory and skills and begin applying them to individualized horticulture research. Faculty directs the development of individual projects by guiding students to understand and achieve the defined course objectives, accept and integrate the critical commentary of advisory panels, and present their progress through periodic formal reviews. Prerequisite(s): Senior Level Status.
Course Offered: Fall
Credit:

HOR 471 Landscape CAD II
This course is an advanced course in computer aided design/drafting. This course will focus on providing additional time developing skills introduced in Landscape CAD I, and introduce advanced three- dimensional aspects of AutoCad. Each student will acquire CAD experience from using the program at his or her own workstation. Each student is required to produce a comprehensive set of landscape construction plans. Prerequisite(s): HOR 371 Corequisite(s): HOR 471L
Course Offered: Fall
Credits:

HOR 472 Site Engineering II
Landscape plans require engineered drainage design, engineered irrigation design and lighting design. The course covers advanced grading design processes, storm water management principles and techniques using the hydrologic cycle, and designing advanced lighting systems to create beautiful night landscapes. Irrigation design will cover various types of irrigation for the landscape. Prerequisite(s): HOR 372 Corequisite(s): HOR 472L
Course Offered: Fall
Credits:

HOR 474 Design Capstone Project
This course is the culmination of the Landscape Development design sequence. This capstone course integrates landscape design and site engineering design philosophies and methodologies into a comprehensive studio project. The intent of the course is to help the student to synthesize skills and knowledge learned in other courses to apply in real-life situations. This multidisciplinary project incorporates landscape design and site planning analysis, site engineering, construction, energy and sustainability, cost estimating and plant selection. Faculty directs the development of individually determined projects in response to defined objectives, critical commentary of advisory panels and periodic formal reviews. Students present their final project to the full faculty at the end of the semester. Prerequisite(s): HOR 220, 371, 372 and 464 or Department approval.
Course Offered: Spring
Credits:

HOR 475 Horticulture Practicum
The Horticulture Practicum represents a culmination of the four-year general horticulture curriculum. Students engage in a focused project or a broad survey of an appropriate industry setting approved and supervised by a faculty mentor and, if applicable, an industry representative. Throughout the Practicum students will be challenged to synthesize course theory and skills, and apply them in a practical manner. Participants will reflect and report on their experiences to their supervisors and peers in both oral and written formats. Note: Students enrolled in HOR 475 should have senior level status and substantial completion of the program, including HOR 465. Prerequisite(s): Department Chair approval and HOR 465
Course Offered: Spring
Credits:

HEALTH PROMOTION AND WELLNESS (HPW)

HPW 101 Perspectives on Health and Wellness
This course examines major contemporary health and wellness issues. It incorporates theoretical and practical applications in health/wellness related components of fitness, balanced nutrition, stress management, substance abuse, and prevention of disease. Emphasis will be placed on the behavioral development health/wellness enhancement strategies at various life stages. Various health-related questionnaires will be completed, analyzed, and compared to standards. Recent topics and trends of concern toward individual health, wellness, and chronic disease will be discussed.
Course Offered: Fall, Spring, Summer
Credits:

HPW 105 Medical Terminology
This course is the study of medical terminology. The focus is on prefixes, suffixes, word roots and their combining forms by an introduction to medical word building and the general structure of the body and its various body systems. Students will learn word construction, spelling, usage, comprehension, and phonetic 'sounds like' pronunciations as well as some common medical abbreviations. This course is just right for Health Studies students who are considering a career in dental hygiene, nursing, or medical technology.
Credits:

HPW 200 Lifespan Health and Wellness
This course considers public health topics from a life course perspective. It will review leading causes of death and other significant health and development topics across the lifespan and explore the individual, social, and environmental factors that determine health status. Students will learn to identify health inequities across the lifespan and, using the life course approach, explore the factors that lead to them. For the health topics discussed, students will learn about health interventions, including, but not limited to, education, policy and environmental changes, for childhood, adulthood, and the aged. Prerequisite(s): HPW 101
Course Offered: Fall
Credits:

HPW 225 Fitness Health & Coaching
In this course, students will learn the details of health coaching and be able to apply instruction techniques and theories directly to contemporary issues. Students will examine immediate and long-term physiological responses and adaptations to exercise. Specific detail will be paid to the role of health coaching and conflict management. Study of musculoskeletal, neuromuscular, cardiovascular, and respiratory systems will enhance the relationship between exercise and health. Core coaching values will address eating/physical activity habits to modify or control body weight. Students will explore specific aspects of training for sports performance and discuss various methodology for coaching and motivating individuals and athletes. Prerequisite(s): HPW 200
Course Offered: Fall
Credits:

HPW 300 Evaluation of Health Promotion
This course involves the investigation of the social, epidemiological, behavioral, educational, and administrative factors related to planning health programs and the procedures and methods for health program evaluation. It introduces students to concepts required for development of successful health/wellness promotion programs for a variety of patient/client populations. Concepts such as the impact of socioeconomic status on health/wellness, cultural diversity as related to health/wellness, methods of creating change, and teaching strategies and theory, including teaching the adult learner, are covered. Students discuss current literature related to these topics and develop a promotion and wellness intervention project based on an area of their choice. Prerequisite(s): HPW 200
Course Offered: Spring
Credits:

HPW 325 Mental Health Wellness
This course will explore mental illness from psychological, neurobiological, historical and cultural perspectives. Conditions to be examined include autism, schizophrenia, depression, post-traumatic stress disorder, multiple personality disorder, eating disorders, attention deficit disorder, and Tourette syndrome. Students will consider the impact of racism, class, and gender on the construction of, explanations for, and interventions developed in mental illnesses. All syndromes will be viewed in the context of an increasing public health concern with mental health and mental illness.

Attention will be paid to the neurobiological and psychiatric mechanisms associated with these disorders. Prerequisite(s): HPW 200 and Junior level status
Course Offered: Spring
Credits:

HPW 330 Concepts in Public Health
This course is designed to introduce the basic tenets, applications, and foci of public health, including integrating public health with other health professions. It will provide a history of public health with an emphasis on the practical application of public health theories and principles in public health program delivery. It will integrate various interactive learning strategies to both individual and community health outcomes. Prerequisite(s): HPW 200 and Junior level status
Course Offered: Spring
Credits:

HPW 400 Community Health
In this course students will learn the benefits of establishing health promotion programs in public and community settings. Students are provided the knowledge and tools required to assess community needs and the steps involved to plan and implement wellness/ fitness programs. Students integrate the various theories of behavior change in their planning assessments for the rural and suburban supporting communities. As part of the course, students will be assigned community service at select local sites and be required to present the experience to the class. Prerequisite(s): HPW 300
Course Offered: Fall
Credits:

HPW 405 Exercise Science
This course provides a survey of scientific principles, methodologies, and research as applied to exercise and physical fitness. Emphasis is placed on physiological responses and adaptations to exercise. Topics include basic elements of kinesiology, biomechanics, motor learning, and the physical fitness industry. Laboratory sessions will identify major muscle groups and examine physiological response to exercise. Specific sport exercise requirements/demands will be examined for training and during the athletic event. The course HPW 405L is a part of the grade for this course. Prerequisite(s): HPW 300 and Junior level status Corequisite: HPW 405L
Course Offered: Spring
Credits:

HPW 410 Seminar in Health Promotion
This course focuses on major issues in Health & Wellness and the role of the health promotion specialist. Students are provided a wide range of exposure to current controversies in Health and Wellness to aid in developing scientific thought, critical thinking and decision-making skills in order to provide safe, competent and compassionate care to individuals in multiple healthcare settings. Through the presentation of health related topics, this seminar provides a culminating experience for the Health Promotion & Wellness program. Prerequisite(s): HPW 300
Course Offered: Fall
Credits:

HPW 420 Addictive Behaviors
This course expands on the counseling techniques for coaching healthy individuals learned in HPW 225. It combines mental health counseling models and techniques (from HPW 325) and applies them to various stages of addictive behaviors. It is an advancement of of intervention evidence-based counseling practices used to deal with the leading types of addiction in the United States. Prerequisite(s): HPW 325
Course Offered: Fall
Credits:

HPW 425 Sport & Exercise Physiology
This course provides a theoretical basis for understanding the body's physiological responses to exercise. Exercise and athletic physiology is an evaluation of the acute responses and chronic adaptations of the body to the stresses of exercise. Students will investigate how the support systems of the body function and how energy metabolism ensures that sufficient energy is provided to exercise. Students will apply exercise physiology principles to coaching, teaching, and other physical training practices. Students will observe measurable physiological responses to exercise through required laboratory exercises. Prerequisite(s): NTR 365 and Junior level status
Course Offered: Fall
Credits:

HPW 430 Research Methods in Health Science
This course provides a thorough and comprehensive overview of the scientific research process utilized in social and health sciences. It provides training in the process of publishing peer reviewed research as well as practical experience on the complete development of a research project. Topics to be covered include the underlying theory of research, data management/analysis, and presentation to small and large media groups. Prerequisite(s): HPW 300 and Junior level status
Course Offered: Spring
Credits:

HPW 435 Health Care Administration
This course is designed to provide students with an understanding of the administration, organization and delivery of healthcare in the United States. It gives an overview of the business of health using technology, the economy, society and politics as driving forces of change. Students study the organizational structures, types of governance, and management issues of the American healthcare system. Further, current healthcare reform issues will be discussed. Prerequisite(s): HPW 300 and Junior level status
Course Offered: Spring
Credits:

HPW 440 Holistic & Integrative Health
This course is an introduction to the concepts, theoretical basis, evidence-based analysis, challenges, and issues in integrative health and complementary and alternative medical practices. Integrative, alternative, and complementary medicine covers a broad range of health philosophies, approaches, and therapies involving the use of holistic or culturally-specific health services and practices in the treatment of illness and disease and embraces an expanded concept of health and illness. Prerequisite(s): HPW 300 and Junior level status
Course Offered: Spring
Credits:

HPW 450 Health & Wellness Internship
The Health Promotion and Wellness internship course is a professional development orientated course that builds skills and abilities related to job-seeking, career, and field experiences. The focus is on the development of professional skills including portfolios, resumes, interviewing skills, and relevant certifications. The internship is individualized based on the career interests of the student and the specific needs of the organization. Internship proposals must be presented and approved by the department prior to registration for the course. Prerequisite(s): HPW 410, Junior level status and Approval of department chair.
Course Offered: Spring
Credits:

HPW 470 Healthy America
This course provides students with current health information in areas such as psychosocial health, substance abuse, injuries, death, sexuality, sexually transmitted diseases, fitness, nutrition, stress management and environmental issues. Environmental health is examined from a health practitioner perspective, with a focus on urban versus rural American living situations. This course also investigates solutions to American health inequities, with strategies for improvement at the local, state, and federal levels. Prerequisite(s): HPW 305 and Junior level status
Course Offered: Spring
Credits:

HEALTH STUDIES (HST)

HST 101 Current Issues in Health
This introductory, multidisciplinary course will provide the student with a broad background of information on current issues in health care. This course is designed to facilitate and enhance the professional growth of future health care providers. Topics will include common and emerging health problems, an examination of the health care delivery system, effective wellness behaviors and common ethical issues occurring in health care today.
Course Offered: Fall, Spring, Summer
Credits:

HST 103 Currents Topics in Gerontology
This three credit elective course will provide an overview on a number of topics related to aging in today's society. Topics will include current theories on aging, the physiology of aging, psycho-social aspects of aging, health issues, end of life decision making, sexuality and spirituality in aging and social policies affecting the elderly in America today. Essential concepts related to the senior citizen will be examined from multiple view points, including that of the client, the family, the health care provider and the health care system.
Course Offered: Fall, Summer
Credits:

HST 301 Health Care Organization
This is a survey course introducing the student to the concepts related to the organization of health care in the United States. Health care will be studied from a historical, political, economic and consumer perspective. Focus will include exploring the commonly used models of health care delivery and organization in the United States and selected other countries. Health Care in this country has undergone tremendous change and expansion since the turn of the last century. As we begin the next century many health care issues remain controversial and a top priority in the minds of many Americans. Access to adequate preventive and episodic health care, organ transplantation and gene therapy are just a few of the interesting topics that will be touched upon. NOTE: Students who take NUR300 cannot receive credit for HST301. NOTE: Students who take HST301 cannot receive credit for NUR300. Prerequisite(s): HST 101 or Permission of the Nursing Department.
Course Offered: Fall, Spring, Summer
Credits:

HUMANITIES (HUM)

HUM 317 Special Topics in the Humanities
This course enables students to explore intensely a major theme or period in the humanities. The subject for a particular semester will be announced prior to registration. Topics may include Historical and Contemporary Perspectives on China, Propaganda in Marketing and Advertising, among others. Short papers involving secondary sources will be required. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall
Credits:

HUM 332 Intercultural Communication
This course is designed to develop an understanding of how specific interpersonal techniques can facilitate effective intercultural communication encounters. Students will be exposed to the ways in which cultural differences affect intercultural communications. Obstacles to effective intercultural communication will be examined and techniques to overcome these will be explored and practiced.
Credits:

INDUSTRIAL TECHNOLOGY (IND)

IND 306 Project and Contract Management
This course covers the processes encountered in choosing, planning, controlling and negotiating of projects and contracts in technologically-based firms. Topics include projects and contracts: feasibility; risk analysis; selection; portfolio optimization; cost estimation and controls; capital budgeting; performance relating to negotiation, adjustments, and benchmark standards; and awareness of an appreciation for ethical practices. Note: Students completing this course cannot receive credit for BUS 306. Prerequisite(s): BUS 109
Course Offered: Fall, Spring, Summer
Credits:

IND 308 Occupational Safety
This course introduces the fundamentals of occupational safety and examines potential accidents, which may occur in the modern work environment that employs complex materials, processes and technologies. We will review the history and safety legislation of the regulatory agency OSHA. Acquiring and analyzing hazard information, organizing and setting up occupational safety programs, accident causes, and their control and accident record keeping will be addressed.
Course Offered: Fall, Winter, Spring, Summer
Credits:

IND 309 Security and Fire Protection Systems
Assessing a facility's need for and recommending as well as managing the design, procurement, installation, and operation of access intrusion detection, closed circuit television (CCTV), security lighting, fire alarms, and fire suppression systems; establishing policies, procedures, and practices for systems operations and maintenance, monitoring and evaluating systems performances; researching and assessing technical developments in the security and fire protection fields.
Course Offered: Fall, Spring
Credits:

IND 310 Industrial Hygiene
This course introduces students to the fundamentals of industrial hygiene as well as to a recognition of health hazards in the facility environment. This course includes analysis of solvents, particulates, industrial dermatoses, industrial noises, ionizing and noniodizing radiation, temperature extremes, biological hazards, and indoor air quality issues. A study of methods with which to evaluate exposures to hazardous substances; a detailed analysis of control programs; and an examination of environmental protection acts and amendments are also included.
Course Offered: Fall, Winter, Spring, Summer
Credits:

IND 315 Facilities Planning
This course is designed to introduce a comprehensive overview of the concepts and techniques to generate facility plans. The course includes the determination of the requirements for people, equipment, space, and material in the facility along with the evaluation, selection, preparation, presentation, implementation and maintenance of the facility plans. An overview of the components of a building structure, its envelope and related items are also discussed.
Course Offered: Spring
Credits:

IND 316 Customer Relations and Quality
This course covers the basics of customer relations and quality in industry. The course includes discussion of quality management principles and standards as well as feedback techniques to measure and assure customer satisfaction. The American Customer Satisfaction Index, J.D. Power and Associates Reports, Malcolm Baldrige National Quality Award, and International Organization for Standardization (ISO) Automotive Quality System QS-9000 registration criteria will also be discussed. Note: Students completing this course cannot receive credit BUS 316. Prerequisite(s): BUS 300
Course Offered: Fall, Spring, Summer
Credits:

IND 317 Automotive Financing and Leasing
This course is designed to familiarize the student with the basic economic problems and principles that exist when a vehicle or other equipment is purchased or leased. Problems are centered around the cost of capital, capital budgeting and investment analysis. Also discussed are repayment schedules including amortized loans, refinancing and variable rate loans. Prerequisite(s): MTH 110
Course Offered: Fall, Spring, Summer
Credits:

IND 320 Fleet Management
This course is designed to provide students with a practical discussion and examination of the fleet management function, as well as how it relates to an organization. Included in the course are automotive specific computer applications such as service establishment management software. Also, the course will include discussions on business plans, fleet utilization and replacement, human resources, parts management, safety requirements and data services. This course will consist of presentations, case studies, and a review of management literature.
Course Offered: Fall, Spring
Credits:

IND 400 Quality Techniques
This covers quality tools and techniques used in problem solving and decision making. Topics include: Pareto charts; cause and effects diagram; check sheets; histograms; scatter diagrams; quality function deployment; statistical process control; continuous improvement; Goldratt's theory of constraints; benchmarking; just-in time manufacturing; and implementing total quality. A written assignment will be required that integrates quality topics with problem solving and decision making tools and techniques.

Note: Students completing this course may not receive credit for BUS 400
Prerequisite(s): BUS 240 and MTH 110
Course Offered: Fall, Spring, Summer
Credits:

IND 402 Facility Maintenance Management
This objective of this course is to present a comprehensive overview of the management, administration and control of a facilities maintenance department, including an overview of business and financial issues work order systems; prioritizing, planning and scheduling of maintenance, construction, custodial and grounds keeping work; the contract cycle and components. Prerequisite(s): BUS 300
Course Offered: Spring
Credits:

IND 405 HVAC Systems
This course covers design aspects of heating, ventilation and air conditioning systems, hydronic systems for commercial and residential applications. Design and selection of heating and cooling system components, boilers, air handling units, refrigeration systems, hydronic system components, terminal equipment, fans, pumps, compressed air properties and indoor air quality are also covered. Students are required to prepare term projects on heating and cooling load calculations for commercial and residential buildings. Prerequisite(s): MET 212, MET 230 and MET 314
Course Offered: Fall, Spring, Summer
Credits:

IND 406 Energy Management
This course covers a comprehensive study of various forms of energy generated from fossil fuels, alternative and renewable energy sources and their management. This course also covers life cycle cost of each type of energy system, energy conservation programs, smart building, load management, miscellaneous methods to increase the energy efficiency of a building, utility rate structures, reduction of energy demand and rebates. In addition, energy conservation will be covered with respect to its effect on indoor air quality and other environmental issues. Prerequisite(s): MET 212, MET 230 and MET 314
Course Offered: Fall
Credits:

IND 408 Automotive Business Management
This is a theory course developed to give the student an understanding of employment practices and opportunities in the automotive industry. Topics include: management principles and structures, tasks and duties of a service manager including interview techniques, performance evaluations, and financial operations of a service facility. The course will provide the student with an understanding of owner communications, shop capacity management, leadership effectiveness, organizational behavior, and promotional strategies. Course will include related problem solving activities, and final project. Prerequisite(s): Junior level status and BUS 300
Course Offered: Fall, Summer
Credits:

IND 410 Senior Project
Independent study of an Industrial Technology-related area of interest to both the student and a faculty member who shall act as Project Advisor. The project selected will utilize skills and knowledge acquired in previous Industrial Technology and related courses. Note: Students completing this course may not receive credit for BUS 410. Prerequisite(s): BUS 409 or IND 409
Course Offered: Fall, Spring, Summer
Credit:

ITALIAN (ITA)

ITA 121 Italian I (Elementary)
A beginning course in Italian emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Course Offered: Fall, Winter, Spring, Summer
Credits:

ITA 122 Italian II (Elementary)
A continuation of Italian 121 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. Prerequisite(s): ITA 121
Course Offered: Fall, Winter, Spring, Summer
Credits:

ITA 125 Italian for Business
This course will provide the development of oral proficiency used in daily communication within the business world, preparing the students both in technical vocabulary and situational usage. An introduction to specialized vocabulary in business and economics, as well as practice in writing business correspondence, will be included. Readings in management, marketing, advertising, etc. will be covered. Prerequisite(s): 2 or 3 years of High School Italian or ITA 121
Course Offered: Fall, Summer
Credits:

ITA 223 Italian III (Intermediate)
A continuation of ITA 122 for students who have had 3 or 4 years of high school Italian. This intermediate course further emphasizes the development of the four language skills: listening, speaking, reading, and writing with stress on communicative competence and cultural awareness. A literary and cultural reader will be introduced. Prerequisite(s): ITA 122
Course Offered: Fall, Summer
Credits:

ITA 224 Italian IV (Intermediate)
For those students who have taken ITA 223 or four or more years of high school Italian. This course emphasizes structural review, intensified practice in oral expression with increased emphasis on reading and writing skills. Continued attention will be given to contemporary Italian culture. Selections from Italian authors will be read. Prerequisite(s): ITA 223
Course Offered: Fall, Summer
Credits:

ITA 301 Italian V (Advanced)
An advanced conversation/composition course with intensive practice in oral and written Italian. Prepared discussions and writing assignments on selected cultural, historical and literary topics. Prerequisite(s): ITA 224
Course Offered: Fall
Credits:

ITA 302 Italian VI (Advanced)
A continuation of Italian V Advance with intensive practice in oral and written Italian. Prepared discussions and writing assignments on selected cultural, historical and literary topics. Prerequisite(s): ITA 301
Course Offered: Summer
Credits:

INTERACTION DESIGN (IXD)

IXD 210 Typography for Interaction
This course will allow students to build technical and practical skills for understanding and effectively utilizing typography in a range of special applications including digital, environmental and immersive application. The course investigates typographic terminology, structures, and methods for creative successful interactive experiences. Students will develop a unified method for orchestrating typography into their visual vocabulary to create cohesive solutions that successfully communicate. Experimentation will be encouraged. Prerequisite(s): VIS 116, VIS 122 all with a grade of C+ or higher
Course Offered: Fall
Credits:

IXD 212 Interaction Design I - Foundation
This course will introduce the basics of Interaction Design and the concepts and techniques necessary to develop and implement immersive, innovative experiences that inform and delight. Students will learn the rigorous process for the design of interactive solutions through research, planning, testing and iteration. Assignments will require the conception, planning and development of systems for various applications using lo-fidelity sketching techniques. Social Media, Usability and Usability testing, and Information Architecture will be covered. Class assignments will favor process and meaning over technology, limiting the use of digital tools to research and information gathering. Prerequisite(s): VIS 116, VIS 122 all with a grade of C + or higher.

Course Offered: Spring
Credits:

IXD 310 Interaction Design II-User Interaction
User Interaction will expand on the concepts and tools introduced in IXD-212 User Interaction I – Foundation with an emphasis on the concepts and principles of User Interaction design: effectiveness, efficiency and satisfaction. Usability, heuristics, user and task analysis, information architecture and graphical user interface design will be added to the student's design vocabulary. The formal use of the computer and digital tools will be introduced and emphasized. Prerequisite(s): IXD 212 with a grade of C+ or higher.
Course Offered: Fall
Credits:

IXD 312 Research Strategies
In this course students will learn research methods commonly used in design research. They will model interaction by conducting qualitative and quantitative research of users behaviors, attitudes and expectations through online and in person user analysis, task analysis, observational studies, customer interviews, usability testing, and other processes and methodologies that facilitate research and discovery. Students will be expected to utilize storytelling techniques to solve design problems, establish personas, develop presentation skills, and support design solutions. Class assignments will favor process and meaning over technology. Prerequisite(s): PSY 101
Course Offered: Fall
Credits:

IXD 320 Interaction Design III – User Experience
This advanced interaction design course builds on skills covered in previous IXD courses and emphasizes user-centered design and research methods and practices used in experience modeling. Students will work in teams to study users in various settings and contexts utilizing interpretive methods of analysis to discover and create solutions for problems that emerge. Projects will emphasize research and usability testing of the needs, wants, and limitations of the end users of a product, service or process at each stage of the design process ensuring effective, efficient and satisfactory experiences. Prerequisite(s): IXD 310 with a grade of C+ or higher Corequisite(s): IXD 322
Course Offered: Spring
Credits:

IXD 322 Prototyping Tools
This course will provide students with an advanced and intensive exploration of prototyping tools. It is taken concurrently with IXD-320 Interaction Design III: User Experience. Various methods of prototyping will be used to understand, analyze, explore, and evaluate systems through the development process. Students will employ these methods to translate a concept into sketches through multiple iterations. Prototypes will be constructed using paper, pen, post-it, scissors, and non-graphical hand drawn and digital wireframes. Students will also learn to develop these concepts using various digital prototyping tools to create hi-fidelity prototypes that demonstrate an application in digital form. Prerequisite(s): IXD 310, BCS 240 with a grade of C+ or higher Corequisite(s): IXD 320
Course Offered: Spring
Credits:

IXD 330 Design for Social Change
In this course students will apply the skills they have learned in the IXD program to work collaboratively in identifying a social need and solving it through user-centered design. The class will work with a real world client to identify a project that addresses a social need, engages people and inspires positive change. Students will be expected to conduct design research including observational studies, customer interviews, usability testing, and other forms of research in establishing and addressing the social need. Prerequisite(s): SOC 122, IXD 212 with a grade of C+ or higher
Course Offered: Spring
Credits:

IXD 410 Interaction Design IV – Advanced Interaction Design
In this course students will work collaboratively to execute projects that include advanced application of the skills developed during the previous semesters. Students will be expected to utilize the applicable conceptual, design, prototyping, storytelling and research skills in combination with typographic and visual design to complete advanced interaction design applications. Class assignments will focus on creating finished, portfolio-ready projects using the Interaction Design Association's definitions of interaction design categories including: Connecting: Facilitating communication between people and communities. Disrupting: Re-imagining completely an existing product or service by creating new behaviors, usages or markets. Empowering: Helping people to do things they otherwise couldn't do. Engaging: Capturing attention, creating delight and delivering meaning. Expressing: Enabling self-expression and/or creativity. Optimizing: Making daily activities more efficient. Prerequisite(s): IXD 320, IXD 322 both with a grade of C+ or higher
Course Offered: Fall
Credits:

IXD 412 Special Topics Studio
This course offers instruction in special content areas within the field of interaction design. Areas of exploration may include topics such as: Content Strategy and Research, Advanced User Experience, Advanced Technologies, Interaction Design in Advertising, Design Thinking, Psychology of Design, Systems Design and the Cultural Significance of Social Media. Depending upon the topic and the instructor(s) discipline the class may be divided into 2 -3 modules with students focusing on a different topic or aspect of a topic in each module. The class will encourage total immersion in the subject(s) presented. Students will rely on the skills developed in past classes to complete rigorous and intensive research and prototyping in the creation of design artifacts. Prerequisite(s): IXD 320, IXD 322 both with a grade of C+ or higher
Course Offered: Fall
Credits:

IXD 414 Design and Play Mechanics
Design and Play will explore the intersection of game theory and game mechanics to design interfaces, experiences and objects that encourage playful interactions and behavioral change in traditionally non-game contexts such as business and education. Concepts such as Gamification for education and business and identification of interaction models will be investigated. Interaction design as it relates to increasing user engagement by adding "fun" components will be explored in-depth. Prerequisite(s): IXD 320, IXD 322 both with a grade of C+ or higher
Course Offered: Spring
Credits:

MECHANICAL ENGINEERING TECHNOLOGY (MET)

MET 104 Computer Aided Drafting and Design
This course introduces computer aided drafting and design (CADD) in 2D drafting and 3D solid modeling. Students will learn traditional drafting techniques, such as orthographic projection, dimensioning, and tolerancing, and apply their drafting skill though 2D CAD software. Students will also learn 3D solid modeling based on parametric constraints, dimensions and features such as extrude, revolve, sweep, loft, hole, fillet and shell. In addition, the course teaches students how to create assemblies and 2D engineering drawings from the existing 3D solids. Laboratory exercises will be assigned to the students for hands-on experience with the related topics. This course is equivalent to the combination of GPH103, GPH104, and MET211. Corequisite(s): MET 104L
Credits:

MET 105L Technical Drawing and CAD
This is a laboratory course designed to provide students with hands-on experience in technical drawing and computer aided design (CAD). Students will apply traditional drafting techniques, such as ortho-graphic projection, dimensioning, and tolerancing, though 2D CAD software. Note: Student who have received credits for MET104 cannot receive credit for this course.
Course Offered: Fall, Spring
Credit:

MET 109 Computer Programming and Applications
This is an introductory course in a computer programming language. Programs are specifically written to be used in the areas of statics, strength of materials, machine design, heat transfer, and fluid mechanics. Applications of the theoretical concepts are covered in the required laboratory. Corequisite(s): MET 109L
Course Offered: Fall, Spring
Credits:

MET 117 Manufacturing Process
The main purpose of this course is to introduce the mechanical engineering technology student to the principles and operation of mechanical equipment such as lathes, drill press, milling machines and measuring requirements and measuring instruments. Several manufacturing processes such as welding, powder metallurgy, sheet metal forming, extrusion, etc. are also covered. Individual laboratory projects will be assigned to each student to reinforce the topics covered in the theory. NOTE: Students completing this course may not receive credit for AET 218T. Corequisite(s): MET 117L
Course Offered: Fall, Spring
Credits:

MET 127 Advanced Manufacturing Processes
This course is a continuation of MET 117. Topics emphasize the theory and operation of manual and numerically controlled milling machines and machining centers. Additional topics covered are the gear shaper, indexing head, point-to-point drilling and milling, and three axis measurement. Laboratory projects will be assigned to reinforce the topics covered in theory. Prerequisite(s): MET 117 Corequisite(s): MET 127L
Course Offered: Fall, Spring
Credits:

MET 150 Solid Modeling
This course introduces advanced topics in computer graphics. Students will learn 3D solid modeling based on parametric constraints, dimensions, and features such as extrude, revolve, sweep, loft, hole, fillet, and shell. The course also teaches students how to create assemblies and 2D technical drawings from 3D models. In the required laboratory course MET 150L, exercises will be assigned to the students for hands-on experience with related topics. Note: Student who have received credits for MET104 cannot receive credit for this course. Prerequisite(s): MET 105L Corequisite(s): MET 150L
Course Offered: Fall, Spring
Credits:

MET 201 Statics
This is a basic course in statics. The main objective of this course is to provide student with a basic understanding of the principles of statics. Topics such as resultant of a force, equilibrium of forces, moments, couples, analysis of simple trusses, centroids, center of gravity, moments of inertia and friction are covered in this course. Applications of the theoretical concepts are covered in the required laboratory. Prerequisite(s): MTH 130 and PHY 135 Corequisite(s): MET 201L
Course Offered: Fall, Spring, Summer
Credits:

MET 205 Material Science
This is a theory and laboratory course designed to give students a basic understanding of crystal structures, effects of cold work and annealing on metal structures and properties, phase diagrams, heat treatment of steel, corrosion of materials, failure analysis of ferrous and non-ferrous alloys, ceramics, plastics and composite materials. Laboratory experiments are associated with the topics covered in the theory. Prerequisite(s): EGL 101 Minimum Grade: C Corequisite(s): MET 205L (2,2)
Credits:

MET 205W Material Science (Writing Intensive)
This is a theory and laboratory course designed to give students a basic understanding of crystal structures, effects of cold work and annealing on metal structures and properties, phase diagrams, heat treatment of steel, corrosion of materials, failure analysis of ferrous and non- ferrous alloys, ceramics, plastics and composite materials. Laboratory experiments are associated with the topics covered in the theory. Students will write technical reports throughout the semester as well as final presentations to help them communicate effectively in specific writing related to their fields. This is a writing-intensive course. Prerequisite(s): EGL 101 with a grade of C or higher Corequisite(s): MET 205L Note: Students cannot get credit for MET 205 and 205W; MET 205W can be used to fulfill the writing intensive requirement, which is offered at the discretion of the Mechanical Engineering Technology Department.
Course Offered: Fall, Spring, Summer
Credits:

MET 206 Strength of Materials
This is a basic course in strength of materials. The main objective of this course is to introduce the concepts of normal and shear stress and the corresponding strains under normal, torsional and bending loadings. This course also covers shear and moment diagrams, deformations, modes of failure, and thermal and combined stresses. Laboratory demonstration of experiments and testing equipment are emphasized. Prerequisite(s): MET 201 or CON 106 with a grade of C or higher Corequisite(s): MET 206L
Course Offered: Fall, Spring, Summer
Credits:

MET 207 Tool Design
This course covers the fundamentals of tool design, with main focus on the principles of jigs and fixtures design. Topics covered include: General tool design, economics of tool design, materials used for tooling, work holding principles, jig design, fixture design, die design and operation, power presses, metal cutting, forming and drawing. Students will be using Computer Aided Design (CAD) software packages in designing different jigs and fixtures. Applications of the theoretical concepts and hands-on 3D CAD modeling are covered in the required laboratory. Prerequisite(s): MET104, MET127 Corequisite(s): MET 207L
Course Offered: Fall, Spring
Credits:

MET 211 Advanced Computer Graphics
This is a laboratory course which introduces advanced topics in computer graphics including advanced dimensioning and tolerancing, 3-D wire frame, surface of revolution, solids, in computer graphics. Laboratory exercises will be assigned to the students for hands-on experience with the related topics. Prerequisite(s): GPH 103 and GPH 104
Credit:

MET 212 Applied Fluid Mechanics
The objective of this course is to represent the basic principles of fluid mechanics and the application of those principles to practical, applied problems. Primary emphasis is on the topics of fluid statics, flow of fluids in piping systems, flow measurement, and forces developed by fluids in motion. The course is directed to anyone in a technical field where the ability to apply the principles of fluid mechanics is desirable. Prerequisite(s): MTH 130, PHY 136
Course Offered: Fall, Spring, Summer
Credits:

MET 215 Special Topics in Engineering
This course will cover various applications of basic principles of statics, strength of materials, electrical principles, introduction to basic principles of electromechanical control systems and introduction to Robotics and automation systems. Students will work on independent projects related to various engineering concepts by utilizing various CAD software. This course can be used as a Technical Elective for Mechanical Engineering Technology and Manufacturing Engineering Technology B.S. Degree programs.
Credits:

MET 230 Electrical Principles
This hands-on and theory course introduces electrical principles to Mechanical and Manufacturing Engineering Technology and Facility Management Technology students. Emphasis will be on power systems that utilize alternating current. Course topics include resistive and R-L-C series and parallel circuits, instrumentation, single and three-phase circuits that contain motors, transformers, starters and low voltage controls, and an overview of electronic applications to mechanical systems. Electrical logic (ladder) diagrams will be stressed throughout the semester. Laboratory assignments will reinforce the topics covered by theory through relevant experiments performed by the student and will include the writing of laboratory reports. Prerequisite(s): MTH 130 and PHY 136 Corequisite(s): MET 230L
Course Offered: Fall, Spring
Credits:

MET 251 Numerical Control
In this course, the fundamental skills and knowledge of the IBM System/360 APT Numerical Control programming language are developed. Students will be required to write and run APT programs on the Department's numerical control system. Students will also process programs to produce EIA-NC code suitable for machine control. Prerequisite(s): MET 104, MET 127 and MTH 129
Credits:

MET 252 Quality Control (Metrology)
This course covers different aspects of dimensional metrology principles, calibrations, and practices. Common measurement tools and methods

used in the industry will be introduced. Topics covered include: Gage Blocks, Fixed Gages, Height Gages, Plug Gages, Dial Gages, Angle Measurements, Pneumatic Gages, Surface Metrology, Optical Metrology, Load Cells Calibration, Introduction to GD&T, and Gage R&R Analysis. Laboratory exercises covered include: Gage Blocks Stacking and Calibration, Dial Gages & Plug Gages in Inspection, Micrometer Calibration, Transducers & Load Cell Calibration, Surface Roughness measurements and analysis, Angle measurements using Sign Bar, Gear Inspection, Air Gage Inspection, Inspection of Flatness, Straightness, Perpendicularity. Prerequisite(s): MET 104, MET 127 Corequisite(s): MET 252L
Course Offered: Fall, Spring
Credits:

MET 302 Dynamics
This course covers rectilinear motion of particles (position, velocity, and acceleration), such as uniform rectilinear motion, uniformly accelerated rectilinear motion, and introduction to motion of several particles. In addition, an introduction to curvilinear motion of particles, as well as kinetics of particles: Newton's second law of motion, principles of work and energy and applications, impulse and momentum theory, and applications of the above topics to engineering problems will be covered in this course. Prerequisite(s): MET 201 and MTH 236
Course Offered: Fall, Spring
Credits:

MET 304 Computer Integrated Manufacturing (CIM)
In this course, the concepts of Computer Integrated Manufacturing (CIM) as applied to the areas of Computer Aided Design (CAD), Design Office Automation, Computer Aided Engineering (CAE), Management Materials Tracking with Bar Code Technology and Network Communication will be studied. Students will gain hands-on experience using the colleges computer system and software. Laboratory projects will cover real world concepts. Prerequisite(s): MET 104
Credits:

MET 305 Tooling for Composites
This is a theory and laboratory course covering an introduction to advanced composite materials and design of production tools and parts. Some included topics are: mold designs, open mold process, resin transfer molding, vacuum infusion process, compression molding, filament winding, and inspection and repair. Design assignments will be given to students which require utilizing the computer laboratories to use the 3-dimensional (3D) parametric design software packages. Prerequisite(s): MET 207 Corequisite(s): MET 305L
Course Offered: Spring
Credits:

MET 307 Electromechanical Control Sys
This course covers the fundamentals and physical principles of electro-pneumatic and hydraulic control circuits. Pneumatic and hydraulic components such as directional control valves, flow control valves, and pressure control valves will be covered. The course also covers programmable logic controller (PLC) using Allen-Bradley MicroLogix controller. Students will be designing and troubleshooting PLC controlled hydraulic and electro-pneumatic circuits in the laboratory. Automation Studio software will be used in designing and simulation of control circuits. Prerequisite: MET 230 Corequisite: MET 307L
Course Offered: Fall, Spring, Summer
Credits:

MET 308 Machine and Product Design
This course introduces students to the fundamentals of machine component design. Subjects covered include safety factors, theories of failure, shaft design, roller bearings, gear design, spring design, pressure vessels, and fasteners. The laboratory section includes analysis of stresses (principal stresses and maximum shear stresses), applications of plane stress (combined loadings, pressure vessels, and beams), design of shafts and shaft components, and design of springs. Prerequisite(s): MET 206 Corequisite(s): MET 308L
Course Offered: Fall, Spring, Summer
Credits:

MET 314 Applied Thermodynamics
This course lays the groundwork for the student's future studies in the area of thermal design, encompassing the fields of power, heating, air conditioning and refrigeration. Topics covered include basics such as the first and second laws of thermodynamics, equations of state for gases and vapors, and psychometrics. Building on this foundation, thermodynamic processes and cycles will be introduced, including the Carnot, and Vapor Compression refrigeration cycles. Thermal equipment such as boilers, turbines, evaporators, condensers, compressors and heat exchangers will be analyzed. Prerequisite(s): PHY 136 and MTH 130
Course Offered: Fall, Spring, Summer
Credits:

MET 351 Computer Aided Manufacturing (CAM)
This course provides the student with experience in computer graphics NC programming techniques. Students will generate 2-D and 3-D parts on CAM software and analyze the tool paths required for various types of machining operations. Programs will be processed to produce EIA-NC code which will then be loaded into a CNC machine to manufacture a part. Students will also create 2-D and 3-D files on CAD software and learn how to export the CAD files to CAM software. Prerequisite(s): MET 127
Course Offered: Fall, Spring
Credits:

MET 400 Computer Aided Engineering
This course will introduce the technology students to the important subject of engineering design and finite element analysis. The course material builds on the students' previous experience in computer graphics and strength of materials and introduces them to the modern concepts of concurrent engineering and design for manufacturability. The students will learn how to import their graphic drawings from the Computer Aided Design (CAD) to the Computer Aided Engineering (CAE) software and apply the loads and appropriate boundary condition. The application of CAE in linear stress and deformation analysis of mechanical systems and fluid mechanics will be the essential part of this course. Computer simulations will be performed during the required laboratory section using the CAD and finite element simulation software. Prerequisite(s): MET 150, MET 212 and MET 308 Corequisite(s): MET 400L
Course Offered: Fall, Spring
Credits:

MET 406 Electronic Packaging Applications
This is a theory and laboratory course covering an introduction to electronic packaging application with the printed circuit board design of analog and digital schematics. Also included in the course is application of thermal, radio frequency, electromagnetic, shock and vibration effects. Laboratory will reinforce the topics covered in theory through projects using the College's computer graphics equipment. Prerequisite(s): MET 207 Corequisite(s): MET 406L
Course Offered: Fall, Spring
Credits:

MET 409 Statistical Quality Control
Students will be introduced to techniques for determining the quality of mass manufactured products by means of statistical analysis. State of-the-art computers and software will be used to generate and analyze process control charts and histograms, plus continuous variables, and attribute control charts. Tests for special causes and capability analysis of a process will be addressed. Prediction of the probable percentage defective in a monitored process as well as the producer's and customer's risk will be emphasized. Students will learn to define the Acceptance Quality Level (AQL) and the military sampling plans (MIL Standard). Applications of the theoretical concepts are covered in the required laboratory. Prerequisite(s): MET 109, MET 252, MTH 110 Corequisite(s): MET 409L
Course Offered: Spring
Credits:

MET 410W Senior Project-Writing Intensive
This is a capstone course required for Manufacturing and Mechanical Engineering Technology BS programs. This course is offered as an independent investigation of a technical problem by the student under the supervision of a faculty member. The selected project topic utilizes skills and knowledge acquired earlier in the Mechanical Engineering Technology or Manufacturing Engineering Technology programs to solve a wide range of engineering problems. At the completion of the project, an oral presentation and a written report are required. This is a writing-intensive course. Note: Students cannot get credit for MET410 and 410W; MET 410W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Mechanical Engineering Technology Department. Prerequisite(s): Senior Status and Approval of Department Chair and EGL 101 with a grade of C or better.
Course Offered: Fall, Spring, Summer
Credits:

MET 411 Applied Heat Transfer
This course will provide students with a basic understanding of problems of heat transfer. The fundamental laws of conduction, convection, and radiation are studied using analytical and graphical methods. Graphical and empirical solutions and applications to industrial problems will also be covered plus special topics in heat exchangers, heat pipes, and industrial furnaces. Prerequisite(s): MET 212, MTH 236 or MTH 151
Course Offered: Fall, Spring, Summer
Credits:

MET 415 Robotics
Students will be introduced to robotics from both a theoretical and practical aspect. Different types of robots and their applications in industry will be covered. Financial management and return on investment of the robotics applications will be discussed. Additional topics included are motion transmission and control of robot mechanisms, robot programming, the use of robots in an integrated manufacturing cell, and practical uses of the robot vision system. Hands-on experience on actual working robots and the application of the theory will be provided in the laboratory. Prerequisite: MET 307 Corequisite(s): MET 415L
Course Offered: Fall, Spring, Summer
Credits:

MET 417 Modern Manufacturing Systems
This course is designed to enrich the student's practical knowledge with hands-on experience of full-scale modern manufacturing systems and actual industrial machining centers. This course is composed of theory and laboratory parts; the laboratory part of the course will be held in the Institute for Manufacturing Research (IMR) of the college which offers the state of the art manufacturing systems and techniques. The students will work in teams to design 3-D mechanical parts for manufacturability and practice the concepts of concurrent engineering and teamwork. Prerequisite(s): MET 351
Credits:

MODERN LANGUAGES (MLG)

MLG 100 Introduction to World Languages
This course will introduce students to the wide variety of languages across the globe. What are language “families”? How are they similar? How are they different? How and why do languages change over time? How do different languages express thought and emotion through words and sentence structure? The relationship of a particular language to history, geography, politics and society will be emphasized throughout this course, with the help of a user-friendly companion website.
Course Offered: Fall, Summer
Credits:

MLG 201 Italian Food, Culture, and History
This course analyzes the history of Italian food and its connections to historic events and cultural changes that took place in the most representative Italian cities and regions from the Middle Ages through the present. The Italian cities and historical periods analyzed are selected to provide a broad historical and social perspective that aim to be both a history of Italian food and a history of Italy through its food. Prerequisite(s): EGL 102
Course Offered: Fall
Credits:

MLG 300 International Cinema
Selected international films will be viewed, analyzed, and discussed in terms of their historical, social, political, and economic context as well as for their aesthetic value. Readings, lectures, and class discussions are organized to teach coherency in reading filmic works. Prerequisite(s): EGL 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

MLG 301 Italian Cinema (In English)
Representative Italian films, from the post-war and Neorealism to the present, will be viewed, analyzed and discussed. Films are selected to provide a broad historical and social perspective as seen through the artistic vision of individual directors. The course will be conducted in English and all films have English subtitles. Prerequisite(s): EGL 102
Course Offered: Fall, Spring, Summer
Credits:

MLG 302 Spanish and Latin American Cinema
In this course, representative Spanish and Latin American movies that cover periods from Romanticism to contemporary times will be analyzed, viewed and discussed. Films will be chosen to discuss social, philosophical, political and identity problems as well as its interpretation according to the artistic vision and directors' achievements and goals. Theory and history of film genres of Spain and Latin America cinema will be studied. The course will be conducted in English and all movies have English subtitles. Prerequisite(s): EGL 102
Course Offered: Summer
Credits:

MLG 303 French Cinema (In English)
Representative French films from the lyrical traditional cinema to the New Wave of the sixties and to the new humanism of the present, will be viewed, analyzed and discussed. Films are selected to provide a broad historical, ideological and social perspective as seen through the eyes of individual directors. The course will be conducted in English and all films have English subtitles. Prerequisite(s): EGL 102
Course Offered: Fall
Credits:

MLG 304 French Culture and Civilization
An examination of contemporary France and its political, economic and social development. French cultural life and institutions in France will also be considered. This course may not be used to satisfy the foreign language proficiency requirement. Prerequisite(s): EGL 102
Course Offered: Fall, Spring, Summer
Credits:

MLG 305 Hispanic and Latin American Culture and Civilization
Civilization course: Provides a general perspective on the formation of the Latin American Culture through the centuries, with special emphasis on Spanish America. In parallel form, historical and cultural evolution of the New World and the Iberian Peninsula will be studied, from their beginnings up to the present. Among other aspects, the course will give special attention to the rich multicultural heritage which has been maintained in Latin America through the centuries, as well as its achievements in Art and Literature. Prerequisite(s): EGL 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

MLG 306 Italian Culture and Civilization
An examination of contemporary Italy and its political, economic and social development. Italian cultural life and institutions in Italy will also be considered. This course may not be used to satisfy the foreign language proficiency requirements. Prerequisite(s): EGL 102
Course Offered: Fall, Spring, Summer
Credits:

MLG 307 French and Francophone Fiction and Film
This course will explore the relationship between literary works and their film adaptations in France and all over the French-speaking world. Selections will be read from novels, short stories, and poems, and major literary movements will be discussed. Students will analyze how literary images and themes are translated onto the big screen. Topics include the French heritage novel, the North African Arab/ French experience, the West African and Caribbean Negritude Movements, and French-Canadian literature and film. All readings and films in English translation. Prerequisite(s): EGL 102
Course Offered: Fall, Summer
Credits:

MLG 308 Arabic Culture and Civilization
This course examines Arabic culture and civilization through an analysis of historical, educational, social and climatic factors. The course will focus on issues arising out of intra-cultural and intercultural communication with today's economic and socio-political currents focusing on American and Arab relations. Prerequisite(s): EGL 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

MLG 309 Arabic Cinema
This course examines a diverse body of motion pictures produced in the Arab world. Through films, critical readings and in class discussion, students will acquire and develop an understanding of Arabic culture and a great

appreciation for the art history of Arab Cinema from across the 22 Arab nations. Prerequisite(s): EGL 102
Course Offered: Fall, Spring, Summer
Credits:

MLG 310 Latin American Women Writers
This course focuses on the works of major Latin-American women writers from the 17th to the 20th century. We will analyze poems, short stories and novels and how women have been portrayed in literature. The theoretical approach to this class will be based on contemporary feminist critics. We will study the works of the first 17th century Mexican feminist writer, The Nun, Sor Juana Ines De La Cruz, as well as the works of Elena Poniatowska, Julia Alvarez and Laura Ezquivel among others. Note: Students completing this course may not receive credit for SPA 310. Prerequisite(s): EGL 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

MLG 311 Italian American Experiences
"Italian American Experiences" is an introduction to the experiences of people that created a unique and distinctive ethnic culture. The course begins with fundamental Italian heritage and examines the role of immigration and assimilation in a new world as Italian culture combined with the American experience to form the Italian-American culture. Italian-American studies offer students an opportunity to survey development in history, literature, media, art, and sociology. It also provides students with an in-depth exploration of the role ethnicity plays in what it means to be an Italian-American. Prerequisite(s): EGL 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

MLG 312 Contemporary Latin American Short Stories
An introduction to different literary movements reflected in Latin American Short Stories in translation during the 20th Century. The emphasis will be the lyrical basis of the realistic, surrealistic and supernatural elements in the stories of Latin American Writers. Modern women writers' esthetics and poetic sensitivity as well as humor and sarcasm will be included in both the observation of individual psychology and tales of the absurd. Summarizing, and using Anderson Imbert's three basic definitions, the focus of this course will be: a) reality (realism); b) the supernatural (literature of the fantastic); c) the strange (magic realism). Note: Students completing this course cannot receive credit for SPA 312. Prerequisite(s): EGL 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

MLG 313 Science, Literature, and Film in the Hispanic World
This course takes an integrated vision of reality in which the sciences and technologies, together with the humanities, take active part in the sociocultural system. This course synthesizes two supposedly antagonistic systems: the humanities and the sciences, and creates a communication between humanists and scientists. The course traces how the Hispanic world represented scientific activities in history and examines the interplay between sciences and humanities through Hispanic literature and film. Prerequisite(s): EGL 102
Course Offered: Fall
Credits:

MLG 314 Hispanic Fiction to Film
Fiction like film is a narrative storytelling art form. In this class students will study the adaption of written, fictional works and their correspondent films. Students will also study the narrative devices, techniques and formal properties used to tell a story that are particular to film but not found in literature, such as camera angle, camera distance, editing, cross-cutting, montage, framing, and camera movement. This course will take a critical approach to examining the narrative language utilized by fiction and film with the objective of developing a more critical eye for interpreting both mediums. Prerequisite(s): EGL 102
Course Offered: Fall
Credits:

MLG 315 Art, Culture and Civilization of Spain
Study of Spain, a multicultural and multilingual nation, not as a homogeneous entity but rather as a heterogeneous tapestry of various culture and languages. The corpus of cultural texts studied will be derived from the realms of literature, film, architecture, music and the visual arts. They will be analyzed within their socio- historical context as well as their aesthetic value. Note: Students completing this course cannot receive credit for SPA 315. Prerequisite(s): EGL 102
Course Offered: Fall, Spring, Summer
Credits:

MLG 316 French Fables and Folktales
This course will examine the literary tradition of the fable, the folktale, the fairy tale, the myth, and the legend in France throughout the centuries. Starting with the period of King Clovis I in the late 400s A.D. and ending with 20th century folklore, we will delve into the nature of these short stories, asking a variety of questions. Who is the intended audience? Are there different versions of the same tale, and why? What are the differences between oral tradition and written tradition? How are these French stories represented in other nations' literature, art and film? Finally, we will briefly chart the rich tradition of Cajun and Creole folklore of present-day South Louisiana, as well as that of French Canada and Haiti. Prerequisite(s): EGL 102
Course Offered: Summer
Credits:

MLG 317 The Arab-American Experience
This course will examine the assimilation of Arab immigrants within the United States and their unique contribution in creating a rich multicultural society. The course will allow students to learn about the Arab-American community through history, literature and sociology by using creative media tools such as art, music, films and documentaries. In addition, the course will examine political and social stereotypes of Arab-Americans as portrayed in current events. Prerequisite(s): EGL 102
Course Offered: Fall, Spring, Summer
Credits:

MLG 318 Italy: From Text to Film
This course will introduce the student to key topics within Italian culture as explored through Italian cinema and literature. Students will analyze narrative devices that tell a story, from the use of various styles of prose in written works to camera angles, editing techniques, and music in film. Through in-class readings of textual and cinematic expressions, including their theoretical background, students will learn to articulate both literary and cinematic criticism. Prerequisite(s): EGL 102
Course Offered: Summer
Credits:

MLG 320 Latino Writers in the U.S.
The development of Latino literature and culture in the United States, with emphasis on the 20th century. Major writings of Mexican, Cuban, Dominican Republican, Puerto Rican and other Latinos will be analyzed in relation to each group's particular experience and its relation to main stream society. Particular attention given to how gender, race, ethnicity, and class interaction affects the formation of the diverse cultural experience of the U.S. Latino. This course will be taught in English. Prerequisite(s): EGL 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

MLG 321 Chinese Culture and Civilization
This course covers the development of Chinese civilization from Neolithic times to the present. It examines both the evolution and the continuities of this ancient culture, including aspects of philosophy, religion and ritual, social life, literature, and art. Prerequisite(s): EGL 102
Course Offered: Fall, Spring
Credits:

MLG 322 The Latin American Novel
This course focuses on the major works of Latin American writers and their contribution to the literary world. Relevant novels from the 18th to the 20th century literary movements will be analyzed, including topics such as Colonialism, Romanticism, Magic Realism will be analyzed. Several Nobel Prize winners like Gabriel Garcia Marquez, Mario Vargas Llosa and Miguel Angel Asturias will be included, as well as renowned women writers Laura Restrepo, Elena Garro, and Elena Poniatowska among others will be studied. Prerequisite(s): EGL 102
Course Offered: Fall
Credits:

MEDICAL LABORATORY SCIENCE (MLS)

MLS 105 Medical Laboratory Techniques
This course introduces the professional and technical responsibilities of medical laboratory professionals. Topics include phlebotomy, medical

terminology, and professional topics such as legal and ethical issues, communication, hospital and laboratory organization, and regulation of educational programs, laboratory facilities, and licensure and certification of laboratory professionals. In the laboratory, phlebotomy techniques are practiced and the routine testing performed in the main areas of laboratory science (Microbiology, Hematology/Coagulation, Immunohematology, Immunology/Serology, Chemistry, and Urinalysis) are explored. Corequisite: MLS 105L
Course Offered: Fall
Credits:

MLS 227 Immunology and Serology
The theory component of this course includes the study of the body's immune system, the clinical testing methods used to evaluate immune system function, and the disease processes that are diagnosed through the use of serological methods. The chemical properties and physiological behavior of antigens, immunoglobulins, and complement are considered in detail along with the cellular interactions necessary for proper function of the immune system. The laboratory component of the course focuses on the performance and interpretation of serological diagnostic procedures for a variety of immune disorders and infectious diseases. Prerequisite(s): MLS 105, BIO 130, CHM 152 all with a grade of C or higher. Corequisite: MLS 227L
Course Offered: Fall
Credits:

MLS 236 Histological Techniques
This course introduces the basic histological techniques involved in the processing of histology specimens in the anatomic pathology laboratory. The techniques involved in fixation, processing/embedding, microtomy, and staining of laboratory specimens are included. The course is designed as an online theory section accompanied by a ten day full time clinical internship at an off campus affiliated pathology laboratory. Students are responsible for their own transportation to the clinical location. Prerequisite(s): MLS 105 and BIO 130 and (BIO 166 or BIO 171) all with a grade of C or higher.
Course Offered: Fall, Winter, Spring, Summer
Credit:

MLS 320 Hematology I
The theory component of this course focuses on hematopoiesis and the formed elements of blood under normal and abnormal conditions. The development and function of erythrocytes and leukocytes, the pathophysiology of hematology-related disorders, and the laboratory investigation that confirms the presence of benign and malignant disorders will be discussed. The theory and practice of the complete blood count as a diagnostic tool will be emphasized. In the laboratory setting, principles of automation and technical skills in routine hematology procedures will be developed. Peripheral smears will be reviewed to study the morphology of the cellular components in the blood. Students will apply quality practices, and use both manual and automated technologies. Quality control and patient results will be interpreted, and abnormal results will be correlated with hematological disorders. Venipuncture will be utilized to obtain specimens for study. Prerequisite(s): MLS 105, BIO 130 both with a grade of C or higher Corequisite(s): MLS 320L
Course Offered: Fall
Credits:

MLS 325W Lab Management & Information
This course presents the principles and practices of quality management in the clinical laboratory, including laboratory administration, supervision, financial and human resource management, safety and problem solving. Regulatory agencies responsible for monitoring laboratory practices will be discussed. Topics will include quality assurance and quality control, implementation of new test methods, equipment evaluation and selection proficiency testing, laboratory inspection procedures, selection, validation and utilization of laboratory information services specific to clinical and research laboratories. Each student will be required to submit a research topic related to clinical laboratory management and informatics. This is a writing intensive course. Note: Students cannot get credit for MLS 325 and 325W; MLS 325W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Medical Laboratory Technology Department Prerequisite(s): MTH 110 and EGL 101 both with a grade of C or higher
Course Offered: Fall, Spring
Credits:

MLS 330 Immunohematology I
Blood banking theory and practice are integrated in this course which provides the foundation for a two course sequence. Topics covered include blood group genetics, blood group characteristics, antigen-antibody reactions and routine pre-transfusion testing. Identification of unexpected antibodies, compatibility and related problem solving strategies are introduced. Perinatal issues and automation in transfusion practices are covered. The required laboratory component of this course emphasizes the development and proficiency of technologist level technical skills that are required for practice in a transfusion medicine facility. Note: the laboratory course, MLS 330L is a part of your grade for this course. Prerequisite(s): MLS 227, with a grade of C or higher Corequisite(s): MLS 330L
Course Offered: Spring
Credits:

MLS 340 Clinical Chemistry I
This course covers the biochemical analysis of body fluids, with the main focus on serum/plasma constituents. There is an emphasis on the principles of method, analytical procedures, and correlation of data with both abnormal and normal physiological processes for a broad spectrum of available chemistry laboratory tests. The major topics covered in both the laboratory and lecture include carbohydrates, lipids, proteins, enzymes, cardiac function, hepatic function, non-protein nitrogenous components, renal function, electrolytes, and acid base equilibrium. Case studies will be used to correlate test results with patient diagnoses, leading to an understanding of the interrelationship between the various laboratory tests performed and the assessment of the patient in health and disease states. Chemical analyses are performed using manual techniques in the required laboratory portion of the course. Development of technical skills, interpretation and monitoring of quality control, as well as interpretation of patient results are emphasized during the laboratory. Prerequisite(s): BIO 166, CHM 152, CHM 153, and MTH 110 all with a grade of C or higher
Corequisite: MLS 340L
Course Offered: Spring
Credits:

MLS 350 Clinical Microbiology I
This course discusses the medically important yeasts and fungi, protozoa and metazoa. Identification of medically important arthropods will also be discussed. Discussion of the Rickettsiaceae and Anaplasmataceae will be included in this course. Antibiotic testing and treatment of these groups of organisms is included. The laboratory emphasis is on the identification of the protozoa, metazoa, arthropods, yeast and, fungi. Staining and culture techniques for identification of these organisms will be discussed and/or performed. In addition, the laboratory covers standard microbiology techniques related to safety in the clinical microbiology laboratory, basic light microscopy, and aseptic technique. Prerequisite(s): BIO 130 and MLS 105 both with a grade of C or higher Corequisite(s): MLS 350L
Course Offered: Spring
Credits:

MLS 351 Clinical Microbiology II
The principles of general microbiology including host/pathogen interactions, antibiotic action, and microbial growth are discussed. The role of the clinically important bacteria in infectious disease will be explored. The lecture emphasizes the Staphylococci, Streptococci, Neisseria, Enterobacteriaceae, Pseudomonas and other non-fermenters, Anaerobes, Haemophilus, HACEK organisms, Brucella, Bordetella, Francisella, Pasteurella, Corynebacterium, Listeria, Erysipelothrix, Bacillus, and the Aerobic Actinomycetes. The course emphasizes the identification of microorganisms through biochemical and serological procedures. Automation in the clinical microbiology lab will be discussed. The major groups covered in the laboratory include the Staphylococci, Streptococcus, Enterococcus, Enterobacteriaceae, Pseudomonas and other non-fermenting gram negative rods, Gram positive rods, Anaerobes, and Haemophilus. Each student will receive multiple unknown bacteria to identify. Gram stain and acid fast staining will be performed. Prerequisite(s): MLS 350 with a grade of C or higher Corequisite(s): MLS 351T
Course Offered: Fall
Credits:

MLS 420 Hematology II
This course is a continuation of Hematology I that covers advanced hematology principles and techniques, as well as new topics in the areas of coagulation and body fluids. Routine urinalysis, including renal physiology, in normal and abnormal states with a focus on physical, biochemical, and microscopic findings will be included, as will laboratory analysis of cerebrospinal, synovial, serous, seminal, amniotic, sweat, and fecal specimens. Primary and secondary hemostasis, fibrinolysis, and coagulation-related disorders will be presented, with a focus on the effects of anticoagulant therapy. The required laboratory portion of the

course allows for technical development of skills in body fluid analysis, urinalysis, and coagulation studies. A case study style theoretical approach will accompany the continued practice of hematology methods in the lab portion of this course, encouraging problem solving in the diagnosis of hematological disorders. Manual and automated technologies will be incorporated for the processing of patient specimens and quality control. Quality assurance and communication skills will also be emphasized. Prerequisite(s): MLS 320 with a grade of C or higher Corequisite(s): MLS 420L
Course Offered: Spring
Credits:

MLS 421 Molecular Pathology
This course will provide the student with an overview of the applications of DNA analysis in the diagnostic clinical laboratory. Specific examples of the use of molecular techniques will be included in the areas of oncology, hematology, infectious disease, histocompatibility, coagulation and identification. Specimen collection and handling will be discussed as well as the specific methodology used for each application. New applications will be introduced to the course as they are developed and implemented in clinical laboratory settings. Prerequisite(s): BIO 441 with a grade of C or higher
Course Offered: Spring
Credits:

MLS 425 Laboratory Research&Education
This course presents the principles and practices of applied research design, education, and training for clinical laboratory technologists. Research designs, sampling methodologies, collection and analysis of data in the research process will be discussed. Topics related to education include the domains and levels of learning, constructing behavioral objectives, learning outcomes, and clinical training strategies. Strategies for effective communication in the clinical laboratory workplace will also be discussed. Each student will be required to design an applied research study on a topic related to clinical laboratory science. Prerequisite(s): MLS 325 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

MLS 430 Immunohematology II
This course presents advanced immunohematology principles and techniques in preparation for practice in the clinical blood bank laboratory. Case study analysis will be used to formulate approaches to solving complex serologic problems. Topics to be addressed include blood group systems, antibody identification techniques, blood donor collection practices, compatibility and investigation of adverse transfusion reactions. Blood bank quality management, ethical and legal issues and alternative technologies in blood banking will be discussed. This course is the culmination of a two course sequence. Prerequisite: MLS 330, with a grade of C or higher.
Course Offered: Fall
Credits:

MLS 440 Clinical Chemistry II
In this course analytical techniques, instrumentation, and automation in the clinical chemistry laboratory will be introduced. Students will study quality assurance, quality control, and troubleshooting techniques. Laboratory-related mathematics will be covered (dilutions, preparing solutions, conversions). Lecture topics will also include vitamins, endocrinology (general, thyroid, adrenal, hypothalamus, and pituitary), therapeutic drug monitoring, and toxicology. Cumulative case studies will be utilized to review Clinical Chemistry topics. Prerequisite(s): MLS 340T with a grade of C or higher
Course Offered: Fall
Credits:

MLS 450 Clinical Microbiology III
This course will use a problem solving approach to build upon the theoretical and technical concepts introduced in Clinical Microbiology I and II. A body's system approach and case studies will be used to correlate laboratory and clinical information related to infectious diseases and their diagnosis. Laboratory operations specific to clinical microbiology will be covered including the role of the clinical microbiology laboratory in infection prevention and public health. Discussion of recovery and identification of the Mycobacteria, Spirochetes, Chlamydia, Mycoplasma and Ureaplasma will be included. Clinically important viruses and basic viral culture techniques will be discussed along with advanced concepts in antimicrobial testing and resistance detection. Emerging pathogens will be introduced. Prerequisite(s): MLS 350, MLS 351 both with a grade of C or higher
Course Offered: Spring
Credits:

MLS 460L Medical Laboratory Science Capstone
In this capstone course, students will reexamine all subject areas included in the medical laboratory science curriculum. Blood bank, Urinalysis and Body Fluids, Clinical Chemistry, Hematology, Immunology, Microbiology, and Laboratory Operations will be reviewed using an advanced case study approach that encourages critical thinking. Laboratory results will be analyzed, evaluated, and correlated with various disease processes and conditions. An emphasis on quality control and quality assurance will be included throughout the course. For the final capstone project students will create a unique case study that incorporates three or more areas of the medical laboratory. Final projects will be presented, followed by a supplemental assessment, developed by the student teacher to evaluate the gained knowledge/comprehension of the audience. Mock board exams will be completed throughout the semester. Prerequisite(s): MLS 430 and MLS 440 with a grade of C or higher. Corequisite(s): MLS 420 and MLS 450
Course Offered: Fall, Spring
Credit:

MLS 481 Adv Pract Immunohematology
Students practice advanced clinical skills in Immunohematology (Blood Bank) through a ten day clinical internship at an off campus affiliated clinical laboratory under the guidance of clinical laboratory personnel. The clinical coordinators at the affiliated sites will evaluate students for both technical proficiency and professional behavior demonstrated during the internship. Students are responsible for their own transportation to the clinical location. Prerequisite(s): Permission of department chairperson
Course Offered: Fall, Winter, Spring, Summer
Credit:

MLS 482 Advanced Practicum in Clinical Chemistry and Hematology
Students practice advanced clinical skills in Clinical Chemistry and Hematology through a ten day clinical internship at an off campus affiliated clinical laboratory under the guidance of clinical laboratory personnel. The clinical coordinators at the affiliated sites will evaluate students for both technical proficiency and professional behavior demonstrated during the internship. Students are responsible for their own transportation to the clinical location. Prerequisite(s): Permission of department chairperson
Course Offered: Fall, Winter, Spring, Summer
Credit:

MLS 483 Practicum in Molecular Pathology
Students practice clinical skills in Molecular Pathology through a ten day clinical internship at an off campus affiliated clinical laboratory under the guidance of clinical laboratory personnel. The clinical coordinators at the affiliated sites will evaluate students for both technical proficiency and professional behavior demonstrated during the internship. Students are responsible for their own transportation to the clinical location. Prerequisite(s): Permission of department chairperson
Course Offered: Fall, Winter, Spring, Summer
Credit:

MLS 484 Adv Prac Clinical Microbiology
Students practice advanced clinical skills in Microbiology through a ten day clinical internship at an off campus affiliated clinical laboratory under the guidance of clinical laboratory personnel. The clinical coordinators at the affiliated sites will evaluate students for both technical proficiency and professional behavior demonstrated during the internship. Students are responsible for their own transportation to the clinical location. Prerequisite(s): MLS 458 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credit:

MLS 491 Immunohematology Practicum
Students practice basic and advanced clinical skills in Immunohematology (Blood Bank) through a twenty-day clinical practicum at an off-campus affiliated clinical laboratory under the guidance of clinical laboratory personnel. The clinical coordinators at the affiliated sites will evaluate students for both technical proficiency and professional behavior demonstrated during the practicum experience. Students are responsible for their own transportation to the clinical location. Prerequisite(s): MLS 330 with a grade of C or higher.
Course Offered: Fall, Spring, Summer
Credits:

MLS 492 Clinical Chemistry & Serology Practicum
Students practice basic and advanced clinical skills in Clinical Chemistry and Serology through a twenty day clinical practicum at local affiliated clinical laboratories under the guidance of clinical laboratory personnel. The clinical coordinators at the affiliated sites will evaluate students for both technical proficiency and professional behavior demonstrated during the practicum experience. Students are responsible for their own transportation to the clinical location. Prerequisite(s): MLS 227 and MLS 340 all with a grade of C or higher.
Course Offered: Fall, Spring, Summer
Credits:

MLS 493 Hematology & Urinalysis Practicum
Students practice basic and advanced clinical skills in Hematology, Coagulation, and Urinalysis through a twenty day clinical practicum at local affiliated clinical laboratories under the guidance of clinical laboratory personnel. The clinical coordinators at the affiliated sites will evaluate students for both technical proficiency and professional behavior demonstrated during the practicum experience. Students are responsible for their own transportation to the clinical location. Prerequisite(s): MLS 320 and MLS 420 all with a grade of C or higher.
Course Offered: Fall, Spring, Summer
Credits:

MLS 494 Microbiology Practicum
By altering the clinical experience from two shorter length courses to one full length course, the students will benefit from more consecutive experience in the clinical laboratory. Previously, half the clinical experience was spent performing tasks at the MLT AS level, and the other half at the BS MT level, in two separate courses. With this change the students are expected to spend their entire clinical time being trained at the baccalaureate level, thereby strengthening their preparedness for entrance into practice. Prerequisite(s): MLS 350 and MLS 351 and MLS 450 all with a grade of C or higher.
Course Offered: Fall, Spring, Summer
Credits:

MATHEMATICS (MTH)

MTH 015 Elements of Algebra
This course fulfills the elementary algebra requirement for entrance into many programs at the College. Topics include numeric and algebraic operations, solutions of linear equations and inequalities, graphs and equations of lines, systems of linear equations, polynomial operations, factoring, and solution of quadratic equations. The minimum passing grade is C-. Grade will not be computed into GPA.
Course Offered: Fall, Spring, Summer
Credits:

MTH 102 Elementary Discrete Mathematical Models
An introduction to Discrete Mathematical Models that utilize topics including Matrix Algebra, Linear Programming, the Simplex Method, the Method of Least Squares, Markov Chains, Game Theory and Exponential Growth. Models include the Leontief Input-Output Model, the Transportation Problem, Finance Investment Strategies, Management Decisions and Campaign Strategies. The course makes use of computer software such as the spreadsheet software EXCEL and the TI-86 graphing calculator or equivalent. A graphing calculator is required. Prerequisite(s): MP2 or MTH 015
Course Offered: Fall, Spring, Summer
Credits:

MTH 103 Sets, Probability and Logic
This course uses set theory to develop the basic concepts of finite probability. The student is introduced to the tree and to the counting methods of devising sample spaces. The probability of mutually exclusive events, dependent and independent events are treated. Some applications to probability distributions of discrete variables are included. Finally, the basic topics in symbolic logic are covered. Prerequisite(s): MP2 or MTH 015
Course Offered: Fall, Spring, Summer
Credits:

MTH 107 Introduction to Mathematical Ideas
A survey of contemporary topics in mathematics designed to develop an appreciation of the power and significance of mathematics and its uses in modeling the world around us. Topics may include the mathematics of social choice, growth and symmetry, mathematical systems, Euclidean and non-Euclidean geometries, management science. Prerequisite(s): MP2 or MTH 015
Course Offered: Fall, Spring, Summer
Credits:

MTH 110 Statistics
Basic concepts of probability and statistical inference. Included are the binominal, normal, and chi-square distributions. Practical applications are examined. Computer assignments using Minitab form an integral part of the course. Prerequisite(s): MP2 or MTH 015
Course Offered: Fall, Winter, Spring, Summer
Credits:

MTH 116 College Algebra
This course is designed to provide students with a firm foundation in symbolic manipulation and algebraic reasoning. Both manipulative skills and conceptual understanding of algebraic principles are stressed. Topics include equivalent expressions and equations, linear functions, properties of exponents and logarithms, quadratic equations, power functions, exponential functions. Upon completion of this course students will be prepared for precalculus as well as for quantitative courses in the natural and social sciences. Prerequisite(s): MP2 or MTH 015
Course Offered: Fall, Winter, Spring, Summer
Credits:

MTH 117 Precalculus with Applications
This is a Precalculus course with applications from various disciplines including technology, science, and business. This course uses linear, power, polynomial, exponential, logarithmic, and trigonometric functions to model real world problems. The important characteristics and properties of these functions are investigated. The emphasis is on applications and problem solving. Note: Students completing this course may not receive credit for MTH 129. Prerequisite(s): MP3 or MTH 116
Course Offered: Fall, Summer
Credits:

MTH 129 Precalculus
In this course, the topics introduced in College Algebra course will be extended. The course will provide a comprehensive study of functions, which are the basis of calculus and other higher-level mathematics courses. The students will study the properties, graphs, and some applications of polynomial, rational, inverse, exponential, logarithmic, and trigonometric functions. Note: Students completing this course may not receive credit for MTH 117. Prerequisite(s): MP3 or MTH 116
Course Offered: Fall, Spring, Summer
Credits:

MTH 130 Calculus I with Applications
This is a calculus course for those not majoring in Mathematics. Topics include the derivative, differentiation of algebraic, trigonometric, exponential and logarithmic functions, applications of the derivative and the definite integral. Applications are taken from technology, science, and business. Problem solving is stressed. A graphing calculator is required. Note: Students completing this course will not receive credit for MTH 150. This course may be non-transferable to science programs, such as Engineering Science or Computer Science, at other institutions. Prerequisite(s): MP4 or MTH 117 or 129
Course Offered: Fall, Spring, Summer
Credits:

MTH 150 Calculus I
This is the first course of the calculus sequence. Topics include, differentiation of functions of one variable, introduction to integration, application of differentiation and integration. A graphing calculator is required. Note: Students completing this course may not receive credit for MTH 130. Prerequisite(s): MP4 or MTH 117 or 129
Course Offered: Fall, Spring, Summer
Credits:

MTH 151 Calculus II
A continuation of the calculus of one variable. Topics include, differentiation and integration of the transcendental functions, integration techniques, polar coordinates and infinite series. Prerequisite(s): MTH 130 or MTH 150
Course Offered: Fall, Spring, Summer
Credits:

MTH 236 Calculus II with Applications
A continuation of Calculus I with Applications. Topics include techniques of integration, applications of the definite integral, multivariable calculus, and an introduction to Differential Equations. Applications are taken from technology, science and business. Problem solving is emphasized. A graphing calculator is required. Prerequisite(s): MTH 130 or MTH 150
Course Offered: Fall, Spring, Summer
Credits:

MTH 245 Linear Algebra
A study of the basic properties of vectors and vector spaces; linear transformations and matrices; matrix representations of transformations; characteristic values and characteristic vectors of linear transformations; similarity of matrices, selected applications. Prerequisite(s): MTH 151 or MTH 236
Course Offered: Fall, Spring, Summer
Credits:

MTH 246 Introduction to Financial Mathematics
This is a course designed to introduce concepts in financial markets; present and future value calculations of money related to loans, annuities, and bonds. It also introduces simple but basic no-arbitrage derivations of the prices of the most financial contracts that are traded either on exchanges or over-the-counter (stocks, options and forward contracts) in a single and multi-period asset pricing setting. Students will analyze the valuation and hedging of European and American options and general contingent claims in the framework of the classical binomial model of the stock price. Prerequisite(s): MTH 151 or MTH 236
Course Offered: Fall, Spring
Credits:

MTH 250 Graph Theory and Combinatorics
An introductory to graph theory and combinatorial analysis. The emphasis is on problem solving and applications with some attention to theorems and proofs. Topics include Graph Models, Isomorphism, Planar Graphs, Circuits and Graph coloring, Trees, Minimal Spanning Trees, Arrangements and selections, Generating Functions and Inclusion/ Exclusion. Prerequisite(s): MTH 150 Corequisite(s): MTH 245
Course Offered: Fall, Spring, Summer
Credits:

MTH 252 Calculus III
This is the third course of the calculus sequence. It generalizes single variable calculus to multivariable calculus. Functions of several variables are described numerically, graphically and algebraically. Topics include: partial differentiation, multiple integration, vectors and vector fields and line integrals. Prerequisite(s): MTH 151
Course Offered: Fall, Spring, Summer
Credits:

MTH 253 Differential Equations
This is an introductory course in ordinary Differential Equations designed to develop an understanding of the qualitative behavior of solutions and its relation to the process being modeled. Use of appropriate computer packages forms an integral part of the course. Topics include: first order differential equations and systems, linear systems, applications including electrical circuits and vibrations, introduction to Laplace Transform. Prerequisite(s): MTH 252
Course Offered: Fall, Spring, Summer
Credits:

MTH 270 Introduction to Mathematical Computing
This course is an introduction to computational, experimental, and algorithmic methods using a computer algebra system. Course topics include computational algebra, functional programming, simulation, and visualization. Numerical calculus, analysis of mathematical models and dynamics, basic linear algebra, and other mathematical problem-solving methods will be discussed. At the completion of the course, students will be familiar with a computer algebra system and how to solve mathematical problems by computational methods. Prerequisite(s): MTH 151 with a grade of C or higher or permission of the Mathematics Department
Course Offered: Fall
Credits:

MTH 290 Methods of Proof in Advanced Mathematics
MTH 290 is intended to be a bridge course from lower-division mathematics courses to upper-division mathematics. Topics include Logic and Proofs, Set Theory, Relations, Functions (Onto, One-to-One, Sequences as Functions), Cardinality, Introduction to Algebraic Structures, and Introduction to Concepts of Analysis. The focus will be on writing clear and precise proofs. Prerequisite(s): MTH 151
Course Offered: Fall, Summer
Credits:

MTH 315W History of Mathematics (Writing Intensive)
An investigation of the development of mathematics from ancient times to the present. Students will study topics which may include ancient mathematics (in particular, the Pythagorean Theorem and quadratic equations), Greek mathematics (Aristotle, Euclid, Archimedes, Apollonius, Ptolemy and Diophantus), medieval mathematics (China, India, Islam, Europe, America, and Africa), early modern mathematics (logarithms, analytic geometry, probability and the beginning of calculus), and modern mathematics (analysis, probability, number theory, abstract algebra linear algebra, non- Euclidean geometries, set theory, and topology). Each topic will be examined in the context of and why it was further developed. A vital component of the course will be a study of the mathematicians who provided us with these tools which are an integral part of mathematical applications in today's world. This is a writing-intensive course. Note: Students cannot get credit for MTH 315 and 315W; MTH 315W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Applied Mathematics Department Prerequisite(s): EGL 101 with a grade of C or higher and MTH 151
Course Offered: Fall, Summer
Credits:

MTH 320 Geometric Structures
An axiomatic view of Euclidean and non-Euclidian geometry. The standard models of the various geometries will be constructed. Careful emphasis on proof construction and understanding. Applications of Euclidean and Hyperbolic geometries will be given. Prerequisite(s): MTH 151 or MTH 236
Course Offered: Fall, Summer
Credits:

MTH 322 Advanced Mathematical Analysis
Topics include: infinite series, first and second order differential equations and applications, homogeneous and forced response, Laplace transforms, Taylor series, matrices, Gauss-Elimination method. Prerequisite(s): MTH 236
Course Offered: Fall, Spring, Summer
Credits:

MTH 325 Mathematical Modeling in the Biological Sciences
The course will focus on mathematical models in biology, including topics such as the growth of populations, the interactions between different populations, the spread of epidemics, the Hardy-Weinberg law in genetics and drug levels in the bloodstream. The emphasis will be on determining the mathematical component of a phenomenon, creating an appropriate mathematical model, using the model to answer questions about the situation, and interpreting the effectiveness of the model. Technology will be used as an exploratory tool. Prerequisite(s): One semester of biology and MTH 151 or MTH 236
Course Offered: Fall, Summer
Credits:

MTH 326 Mathematical Modeling in Applied Sciences
This course will investigate various mathematical models in the applied sciences taken from real life phenomena. Basic notions of abstraction and how to work on real problems at different levels will be introduced in the course. The Models are explored using analytical, computational and graphical tools as appropriate. Models cover but are not limited to examples from Finance, Economics, Ecology, the Environment, Engineering, Biology and Behavioral Sciences. Prerequisite(s): MTH 151 or MTH 236
Course Offered: Summer
Credits:

MTH 330 Applied Abstract Algebra
Essential structures of modern algebra: sets, relations, groups, homomorphisms, and rings will be studied with a view toward their applicability. Applications may include error correcting codes, computational complexity, and counting problems. Prerequisite(s): MTH 245 and MTH 290
Course Offered: Fall, Summer
Credits:

MTH 331 Introduction to Topology
This course introduces the basic concepts and some fundamental results of Point Set Topology. Some of the topics covered are: Open sets and the notion of continuity on various fundamental spaces (the real line, Euclidean spaces, metric spaces, and general topological spaces); connectedness, compactness, countability, and separation; the Tychonoff theorem.
Prerequisite(s): MTH 252 and MTH 290
Course Offered: Fall, Spring
Credits:

MTH 341 Probability
This course provides a calculus-based introduction to probability theory and its applications. Topics include: probability spaces, conditional probability and independence, discrete and continuous random variables, mathematical expectations, moment generating functions, bivariate distributions, and central limit theorem. Note: Students who take MTH 341 may not receive credit for MTH 360. Prerequisite(s): MTH 151
Credits:

MTH 342 Statistical Inference
This course is an introduction to statistical inference. The overall objective of the course is the development of basic theory and methods for statistical inference. Topics include parameter estimation, interval estimation, hypothesis testing, regression analysis, and experimental design.
Prerequisite(s): MTH 341
Credits:

MTH 346 Continuous Time Finance
This course introduces Brownian motion, Stochastic Calculus, Ito's integral and Ito's formula which are used to derive the Black-Scholes formula in a continuous-time model rather than a limit of discrete-time models as covered in MTH 246. Pricing derivatives on financial securities using Black-Scholes formula will be covered. Prerequisite(s): MTH 246
Course Offered: Summer
Credits:

MTH 354 Principles of Real Analysis
Students will be introduced to the foundations of real analysis through a rigorous development of the real number system. This will be followed by a study of limits, continuity, and differentiability of real functions. The Riemann integral and the Fundamental Theorem of Calculus will be developed rigorously. Sequences and series of real functions will also be discussed. Prerequisite(s): MTH 252 and MTH 290
Course Offered: Fall, Summer
Credits:

MTH 355 Principles of Complex Analysis
This course will concentrate on the algebraic and analytic properties of complex numbers and functions of a single complex variables. The concepts of limits, continuity and differentiability will be extended to the complex domain. Line integrals and Cauchy's Integral Theorem will be presented. The expansion of analytic functions in Taylor and Laurent series will be derived and residue theory will be introduced. Prerequisite(s): MTH 252 and MTH 290
Course Offered: Fall, Summer
Credits:

MTH 356 Integrated Topics in Math and Physics
This is an integrated math-physics course with applications to topics in physics and the engineering technologies. It is meant to be interdisciplinary in nature and directed toward students in the Bachelor of Technology and Applied Mathematics programs. Topics to be covered include: Vector Algebra, Vector Calculus, Scalar and Vector Field Theory, Fourier Series, Fourier Integral, Fourier Transforms and Laplace Transforms. The focus will be on application and integration of mathematics methods to physics and engineering technologies. Note: Students completing this course may not receive credit for PHY 356. Prerequisite(s): MTH 236 or MTH 252 and PHY 136 or PHY 144
Course Offered: Summer
Credits:

MTH 360 Applied Probability and Statistics
A calculus-based course which studies applications of probability and statistical inference. Use of appropriate computer packages forms an integral part of the course. Topics are chosen from statistical parameters, continuous and discrete random variables, probability distributions, correlation and regression analysis, design of experiments and ANOVA.
Prerequisite(s): MTH 151 or MTH 236
Course Offered: Fall, Spring, Summer
Credits:

MTH 365 Vector Calculus
The course begins with a detailed development of vector algebra in two- and three- dimensions. Also covered will be differentiation and integration of scalar and vector valued functions of vectors. Vector fields will be discussed with particular attention to line and surface integrals. Important vector theorems such as Green's, Stokes' and the divergence theorem and their important applications will be presented. A discussion of the Fourier series and the Fourier integral will complete the course. Prerequisite(s): MTH 245 and MTH 252
Course Offered: Summer
Credits:

MTH 385 Applied Partial Differential Equations
This course is an introduction to partial differential equations. Topics include introduction to heat, wave, and Laplace equations, Fourier series, numerical methods, applications. Use of an appropriate computer packages is an integral part of the course. Prerequisite(s): MTH 253
Course Offered: Fall
Credits:

MTH 390 Methods in Operations Research
This course is intended to focus on understanding, formulating and solving deterministic models in operations research. Maximum and Minimum Linear Programming problems will be studied graphically and theoretically. The Simplex Method, Sensitivity Analysis and Duality will be covered and an in-depth analysis of the reasoning on which these topics are based will be given. Instruction in computer software techniques will be presented to solve Linear Programming problems, using the simplex method and sensitivity analysis. Transportation Problems, Integer Programming, or Markov Chains will be covered. In order to enhance quantitative reasoning, the course emphasizes the formulation of mathematical models commonly used by operation research analysts, as well as the theoretical and computer software solutions to these models. Prerequisite(s): MTH 130 or MTH 150
Course Offered: Fall, Spring, Summer
Credits:

MTH 400 Problem Solving Seminar
This is a seminar course where students will work on a variety of non-routine problems chosen by the instructor and present their solutions (or partial solutions). Students will also work on a major research project under the guidance of the instructor and will report their results. Cooperative work will be encouraged and much of the work will be of an "open ended" nature. Communications skills will be stressed. Prerequisite(s): MTH 252 or MTH 245 or MTH 250 or MTH 253
Course Offered: Summer
Credits:

MTH 405 Seminar in Applied Mathematics
This is a capstone course for Applied Mathematics students. Students will work on a major project taken from business, industry or government agency. Students will have to present their results both orally and in writing. The completed report must meet a standard that is acceptable to the business community. Students may work in teams or individually. They will report on their progress as part of the seminar. This course may be taken twice for academic credit. Prerequisite(s): MTH 354
Course Offered: Fall, Spring, Summer
Credits:

MTH 422 Numerical Methods
This is an introductory elective course for Applied Mathematics students. Topics include solutions of nonlinear equations, interpolation and approximation of functions, numerical differentiation and integration, iterative techniques in Linear Algebra and others. Solutions of problems using computer will be an integral part of this course. Prerequisite(s): MTH 151 and MTH 245
Course Offered: Fall, Summer
Credits:

MTH 445 Linear Algebra II
This course is a continuation of MTH245. Topics include further study of eigenvalues and eigenvectors; inner product spaces, orthogonality, least

squares problems, symmetric matrices, diagonalization, quadratic forms and the singular value decomposition. Applications to Markov chains, constrained optimization, differential equations, statistics, and image processing, among others, will be shown. Prerequisite(s): MTH 245
Course Offered: Fall, Spring, Summer
Credits:

MTH 446 Financial Engineering
This course will use advanced mathematical and computational techniques to solve real-world problems in quantitative finance. Topics will include optimal asset-liability matching, yield curve construction, option valuation, hedging and strategies, portfolio analysis, and risk management. Coursework will emphasize the integration of topics from calculus, linear algebra, and probability with financial theory and applications. Students will develop computational skills using application software such as Excel and MATLAB. Prerequisite(s): MTH 346
Credits:

MTH 460 Applied Probability and Statistics II
A continuation of MTH 360. Topics chosen from hypothesis testing; sampling distributions; analysis of variance and covariance; nonparametric techniques; probability distributions; multivariate techniques.
Prerequisite(s): MTH 360
Course Offered: Fall, Summer
Credits:

MTH 490 Topics in Applied Mathematics
Lectures in applied mathematics that may introduce topics not covered in the Applied Mathematics curriculum or may expand upon the content of existing courses. These topics vary from year to year, and the specific description of the content of each course will be publicized in advance by the department. Examples of such topics are computational linear algebra, applied optimization, dynamical modeling, financial mathematics, etc.
Prerequisite(s): MTH 245 and MTH 252
Course Offered: Fall, Spring, Summer
Credits:

MUSIC (MUS)

MUS 108 Survey of Western Music
This course will introduce students to music from Ancient Greek times to present. The course will also allow students to appreciate music in relation to the other arts, to other cultures, and to historical events.
Course Offered: Fall, Summer
Credits:

NUTRITION SCIENCE (NTR)

NTR 110 Introduction to Nutrition Science
This course stresses the practical application of nutritional science throughout life. It discusses nutritional changes that occur during various life stages such as pregnancy, infancy, adolescence, adulthood, and old age. Students explore the biological aspect of all major nutrients and relate them to chronic diseases. Basic chemistry principles are applied to major nutrient groups. Recommendations for adequate nutrient intake are presented and related to food consumption habits. This course evaluates nutritional supplement claims and discusses changes in athlete nutrient requirements in training and during competition. Note: Students who receive credit for NTR 110 may not receive credit for BIO 125.
Course Offered: Fall, Spring, Summer
Credits:

NTR 150 Quantity Food Production
This course provides experience in food preparation and science. It provides relevant information and training on standard commercial and institutional food preparation. Students will be capable of classifying and preparing sauces, thickening agents, and sauce families. They will examine production methods, finishing techniques, and food safety methods. This class includes lecture, demonstration, and lab opportunities to apply knowledge and skills in food preparation. The course will require integration of scientific principles and the use of problem-solving skills to address a specific project development objective from concept to finish. Prerequisite(s): NTR 110 or BIO 125 Corequisite(s): NTR 150L
Course Offered: Fall
Credits:

NTR 200 Food Science
Food Science integrates an interdisciplinary science approach to food and its components. Relationships between the chemical composition of food and sensory properties are delineated. In this course students evaluate the effects of processing, preparation, and storage on the quality, safety, and nutritive value of various food categories. Further, this course examines the application of technology to both improve and expand the food supply. Food science applies concepts from nutrition, health, biology, and chemistry to discriminate how the various ingredients in foods interact. Laboratory testing and food science techniques specific to the science of food are explored. The course, NTR 200L, is a part of the grade for this course.
Prerequisite(s): NTR 110 or BIO 125 Corequisite(s): NTR 200L
Course Offered: Spring
Credits:

NTR 300 Cultural Foods
farmThis course is designed to examine the fundamental truths that govern human behavior around food choices and food selection. Students will look at the symbolic value and meaning of food, and will scrutinize the relationship of food cultures to consumer behavior. Students will explore the historical development of and current food cultures in Europe, Asia, Africa, the Middle East, and the Americas. Further, this course will explore the impact of food and food choices/preparation on nutritional status and health. Prerequisite(s): NTR 110 or BIO 125 and Junior-Level status
Course Offered: Spring
Credits:

NTR 305 Weight Management & Obesity
This course will examine the genetic and social determinants of a person's body weight and composition. Factors such as eating patterns, exercise amounts, and employment caloric expenditure will be explored. Lectures will separate fact from popular diet fiction. Students will examine weight loss and maintenance through evaluation and examination of current research data and compare and contrast fad diets and practices. Instruction is included on using epidemiology as a tool to understand and help prevent disease caused by excess weight in the United States population.
Prerequisite(s): BIO 130 and Junior-Level status
Course Offered: Spring
Credits:

NTR 310 Food Service Management
This course explores the organization and administration of food service systems. It covers the functions and responsibilities related to the management of menus, facility efficiency and state regulations. The course will cover leadership strategies related to food production, planning, site design, marketing, human resource management and cost accounting as they relate to equipment, food, and labor. Discussion includes food sanitation and safety, with emphasis on supervision skills. Prerequisite(s): (NTR 110 or BIO 125) and Junior-Level status
Course Offered: Fall
Credits:

NTR 320 Medical Nutrition Therapy
This course explores current clinical nutrition practice in various disease states. Students develop knowledge and skill in dietary assessment and apply the appropriate medical nutrition therapies and dietary assessment methodologies while developing familiarity with medical terminology and practices. Students construct dietary intervention/modification protocols using food and dietary intake to meet dietary prescriptions and implement these protocols in diverse cultural groups. They use a biological science foundation to follow existing evidence-based guidelines and protocols to implement nutrition interventions and predict outcomes. Attention is placed on development of dietary practices to prevent and/or ameliorate diseases such as food allergy, obesity, heart disease, and cancer. Prerequisite(s): (BIO 125 or NTR 110) and (BIO 170 and BIO 171) and Junior-Level status. Corequisite(s): NTR 320L
Course Offered: Fall
Credits:

NTR 325 Nutrition Through Life Cycle
This course explores nutrition needs throughout various stages of the life cycle including pregnancy and lactation, infancy, adolescence, and aging. People require similar nutrients throughout their life, however the amount and ratio of specific nutrients varies according to their age. Students will evaluate the relationship among nutrition, physical growth, activity, and disease on the human body. Socioeconomic and cultural influences will be addressed at each stage of life. Students will further explore psychological/

behavioral influences on food and nutrition behavior through the life span. Prerequisite(s):BIO 170, BIO 171 and Junior-Level status
Course Offered: Spring
Credits:

NTR 330 Food Microbiology
This course is structured to give students an appreciation of the role of microorganisms in food processing, preservation and production. Topics covered relate various microorganisms to food spoilage and foodborne illness by genus and species. Microorganism differentiation in health promotion procedures is addressed at the local, state, and federal levels. Food microbiology unites the disciplines of microbiology and food technology. This course extrapolates industrial procedures, protocols and additives that aim to provide safer, longer lasting and affordable food for the world. Food microbiology covers classification and identification of microorganisms commonly associated with food and applies aspects of microorganism control to current common foodborne illness outbreaks in the United States. The laboratory course, NTR 360L, is a part of the grade for this course. Note: Students who have taken BIO 220 cannot receive credit for this course. Prerequisite(s): BIO 125 or NTR 110 and Junior-Level status Corequisite(s): NTR 330L
Course Offered: Fall
Credits:

NTR 335 Nutritional Biochemistry
Nutritional biochemistry addresses the functional and structural characteristics of energy producing molecules (carbohydrates, lipids, proteins, and ethanol). The course evaluates the formulative molecular structures and nutrients involved in the major metabolic pathways of humans. Comparisons are made between normal metabolism and that found in various nutrient deficiencies. It teaches the chemistry of rate limiting steps and nitrogenous bases involved in transcription and translation at a cellular level. Prerequisite(s): CHM 260 and Junior-Level status
Course Offered: Spring
Credits:

NTR 340 Nutrition Communication
This course takes previous nutrition knowledge and effectively develops skills to transfer that information to professional peers, clients, patients, employees, and the public. Efficient communication of complex and difficult nutrition and health information is practiced to improve interpersonal skills. Students will participate in verbal and written communication drills using techniques essential to communication for supporting positive behavior change. In this course students debate the development of methods for strong communication. Students compare and appreciate cultural differences in health/nutrition literacy. Prerequisite(s): EGL 101 and (NTR 110 or BIO 125) and Junior-Level status
Course Offered: Fall
Credits:

NTR 350 Energy and Exercise
This course uses a biochemical approach to the catabolic reactions involved in human metabolic energy production. Emphasis is placed on human fuel usage, storage, and its use for energy transduction. Specific topics include the pathways by which nutrients are stored, and oxidized to provide ATP; hormonal regulation of energy balance and substrate utilization, the potential impact of physical activity, diet and physiological determinants (e.g. sex/gender, ethnicity/race) on human health, pathophysiology of obesity, insulin resistance, and other disorders related to energy metabolism, etc. Through lectures, discussion, and the reading of literature, students will critique the terms, concepts and methods in energy metabolism/exercise science. Students will learn critical thinking and evaluation skills on nutritional elements of energy production and usage. Prerequisite(s): (NTR110 or BIO125) and BIO 170, BIO 171 and Junior-Level status
Course Offered: Spring
Credits:

NTR 360 Experimental Foods
This course provides an experimental approach to study of physical and chemical properties of foods through recipe development, modification, and evaluation; food safety and technology; biotechnology and sensory evaluation. The science behind creating healthier foods, such as no-fat ice cream and cooking with no-calorie sugar substitutes, will be addressed. Note: The laboratory course, NTR 360L, is a part of the grade for this course. Prerequisite(s): NTR 110 or BIO 125 and Junior-Level status Corequisite(s): NTR 360L
Course Offered: Spring
Credits:

NTR 365 Sports Nutrition
Course content will span basic physiology as it applies to nutrition and sport, nutrient utilization, body composition, and specific application of nutrition as well as dietary coaching for different sports in training/competition. This course will discuss optimal performance and endurance in various sports. Lectures will cover proper hydration, increased calorie and nutrient needs in athletics. The course also identifies appropriateness of supplements and ergogenic aids by understanding their methodologies with examination of scientific research validity. Prerequisite(s): NTR 110 or BIO 125 and Junior-Level status
Course Offered: Fall
Credits:

NTR 405 Supplements and Ergogenic Aids
This course addresses caffeine and other herbal stimulants as a means to weight management and improved athletic performance. Americans currently spend billions of dollars a year on weight-loss supplements in pill form with limited government supervision because natural supplements are not considered drugs. Course work includes in-depth examination of the science behind the supplement industry and their promotions for health and well-being. This multifaceted industry is delineated from product purchasing, additives, purification, production, marketing, distributing and quality control. Holistic and integrative sales approaches are examined against empirical research findings. Past major ergogenic aid trends and fads are examined for effectiveness and safety. Prerequisite(s): NTR 320
Course Offered: Spring
Credits:

NTR 410 Macronutrient Metabolism
This course offers an in-depth examination of the biochemistry involved in human nutrition and metabolism. Macronutrient nutrition focus is on the role of biological energy production, fuel usage and storage. Additionally, protein's role in immunity, cell repair, and cell maintenance is examined at a molecular level. Emphasis is placed on the interrelationships of nutrients to catabolic and anabolic metabolism within biochemistry and human physiology. This is especially true for discussion metabolic states involving obesity and physical exercise. The course will reflect upon, examine and discuss current research related to nutrition and claims about alterations in metabolism. Prerequisite(s): NTR 335
Course Offered: Fall
Credits:

NTR 411 Micronutrient Metabolism
This is an advanced course in the biochemistry and physiology of micronutrients. Students are expected to be familiar with introductory nutrition material as well as biochemistry, and have a basic familiarity with physiology. This course covers fat soluble nutrients, water soluble nutrients, and minerals. Topics include nutrient digestion, absorption, transport, storage, and function in biochemical activity. This course will evaluate mineral and vitamin interactions and discuss health implications of varying amounts of vitamins and minerals in the diet. Prerequisite(s): NTR 335 and NTR 410
Course Offered: Spring
Credits:

NTR 420 Community Nutrition
This course provides students with the tools for developing community nutrition interventions. Students will learn about utilizing behavioral theory, conducting needs assessments, writing program objectives, developing intervention strategies, evaluating program implementation and effectiveness, planning a budget, and writing grant proposals. Students pick projects based on personal interest and work as individuals and in small groups. Further course topics include public health initiatives to increase fruit and vegetable intake, obesity prevention, school lunch nutrition, and availability of healthy foods to "at risk" populations. Prerequisite(s): HPW 325 and Junior -Level status
Course Offered: Fall
Credits:

NTR 425 Nutrition Science Seminar
This course provides students with the opportunity to gain experience in organization of material, dissemination of library/original research, and communication skills in nutrition and dietetic sciences. The course examines current issues and controversies in food, nutrition, and dietetics.

Guest speakers will be scheduled to enrich student and faculty exposure to a variety of topics from their specific discipline, in their area of expertise.
Prerequisite(s): NTR 335 and Junior-Level status
Course Offered: Spring
Credits:

NTR 430 Clinical Nutrition Assessment
This course presents the principles and practice of scientifically based clinical nutrition. Topic discussions include: nutritional assessment, nutritional implications of the physical exam, laboratory studies, macronutrients, micronutrients, phytonutrients, enzymes, and other factors. Growth, development and maintenance are discussed with emphasis on nutritional interventions and redesigning nutritional care plans. Prerequisite(s): NTR 320 and Junior-Level status
Course Offered: Spring
Credits:

NTR 450 Research Methods in Nutrition Sciences
This course introduces the principles of research methodology as relevant to nutrition sciences. It examines the context of research in professional practice in the healthcare field, and will equip students with the basic research skills necessary for their continuing professional education. The course content considers concepts in both qualitative and quantitative research methodology, the critical appraisal of literature in science and healthcare, and includes basic statistical concepts and methods.
Prerequisite(s): NTR 320 and Junior-Level status
Course Offered: Spring
Credits:

NTR 460 Nutrition Field Experience
In this course students have the opportunity to gain hands-on experience in a professional setting. The course is oriented towards professional development that builds skills and abilities related to job-seeking, and career. Its focus is on development of professional tools including portfolios, resumes, interviewing skills, and relevant certifications. The field experience is individualized based on the career interests of the student and the specific needs of the organization. Field experience proposals must be presented and approved prior to registration for the course. Prerequisite(s): NTR 320, Junior-Level status and permission of the department
Course Offered: Fall, Spring, Summer
Credits:

NURSING (NUR)

NUR 094 NYS PN/RN Transition
This course is designed to validate prior learning, and update/enhance the student's knowledge. This course facilitates transition from the role of Practical Nurse to that of a student preparing for the role of Registered Nurse. Nursing process is used as the framework for critical thinking and problem solving. Students holding and/ or eligible to hold a current registration in a United States Jurisdiction may take this non-credit course. The amount of work required is equivalent to a course bearing 3 credits. For progression into the Registered Nurse program, the student must hold a current LPN registration in a US Jurisdiction and meet the specific requirements of the institution and/or to which s/he is applying.
Credits:

NUR 095 Clinical Skills Update
A mandatory 30 hour non-credit unit course for nursing students who have interrupted their nursing study. Instruction will be provided in the lab and clinic area. Non-credit units/offered Intersession and Summer. Course grade will not be computed in GPA.
Course Offered: Summer
Credit:

NUR 100 Health Assessment
This course will enable students to acquire skill in obtaining a health history and in performing physical examinations. Emphasis will be on identification of normal physical characteristics, common variations, and beginning skills in detecting deviations from normal. Students are given the opportunity to demonstrate beginning skills in the nursing laboratory, and apply these skills to the clinical setting to provide holistic care to individuals and families. Prerequisite(s): BIO 171 with a grade of B or higher Corequisite(s): NUR 100L and NUR 114T, NUR 114L, NUR 114H, NUR 114S
Course Offered: Fall, Spring
Credits:

NUR 114 Clinical and Theoretical Foundations of Baccalaureate Nursing Practice
This course provides an introduction to nursing and patient care concepts, emphasizing the knowledge, skills and attitudes needed to provide safe, high quality care to individuals, families and communities within a multicultural environment. The theoretical foundation for professional nursing behaviors, evidence-based practice, and patient-centered care are explored within the context of various health care environments, delivery systems, and inter-disciplinary teams. Concepts of caring, critical thinking, communication, and the role of the professional nurse as provider of care, manager of care, and member of a profession are integrated throughout the course as a framework for presentation of the essential components of generalist baccalaureate nursing practice. Students are given the opportunity to demonstrate beginning skills in the nursing and simulation laboratory, and apply these skills in the clinical setting to provide holistic care that promotes optimum wellbeing to individuals and families. To continue in the nursing program the student must maintain a grade of C+ (77) or higher. Prerequisite(s): BIO 170, 171 Corequisite(s): NUR 114H, 114L, 114S, NUR 100, 100L
Course Offered: Fall, Spring
Credits:

NUR 150 Medication Dosage Calculation
This course is designed to provide students with the requisite knowledge and skills to accurately calculate medication dosages. Fundamental formulas will be taught, as well as the theoretical and mathematical concepts related to the administration of oral and parenteral medications.
Credit:

NUR 215W Developing Nurses' Ways of Knowing (Writing Intensive)
This course presents an overview of nursing as a professional, scholarly discipline, which is an essential part of healthcare. Topics discussed include ways of knowing in nursing, specifically theoretical/empirical, ethical, personal, esthetic, intuitive, and sociopolitical knowing. There is also emphasis on developing ideas about related topics such as historical and social factors, reflective practice, nursing concepts, learning, nursing theory, skills acquisition, and evidence for practice that provide foundations for current professional nursing practice. This is a writing intensive course. To continue in the nursing program the student must maintain a grade of C+ (77) or higher in this course. Note: Students cannot get credit for NUR 215 and 215W; NUR 215W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Nursing Department
Prerequisite(s): EGL 101 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

NUR 216 The Art of Nursing
This course explores the artistry of professional nursing. The theories of caring, the importance of self-care, the mind-body connection, and the value of the nurse's presence in today's healthcare system will be explored. The concepts of self-care assessment and intervention will be practiced through reflection and dialogue within an environment of supportive peers and faculty. Other concepts including mindfulness, movement, and personal creativity will be discussed. The evidence supporting the use of therapeutic modalities such as humor, music, and touch will be evaluated for inclusion in a nursing plan of care. To continue in the nursing program the student must maintain a grade of C+ (77) or higher in this course.
Course Offered: Fall, Spring
Credits:

NUR 217 Care of Individuals Experiencing Acute Health Challenges
This course focuses on the experiences of individuals/families with acute health challenges within a multicultural society. The student will be introduced to concepts and skills common in the care of patients with acute health challenges. Emphasis is placed on the nursing process and clinical decision making. The student will examine essential concepts and issues related to acute health challenges from different viewpoints. Throughout this course the student continues to develop self-awareness, professionalism, and the knowledge, skills, and attitudes necessary to practice nursing in a caring, non-judgmental manner in an increasingly complex health care system. Opportunities for application of these concepts are provided in various health care settings. To continue in the nursing program, the student must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): NUR 100, NUR 114 with a grade of C+ or higher. Corequisite(s): NUR 217H
Course Offered: Fall, Spring

Credits:

NUR 240 Nursing Beyond Borders
This three credit elective course will provide an overview on a number of topics related to global health in today's world. Topics will include essential concepts related to providing compassionate care to clients from different cultures, health care access from a global perspective, prevention of disease and the maintenance of health. Any 100 level clinical course in dental hygiene, nursing, or medical laboratory technology or other related health professions.
Credits:

NUR 301 Caring for Populations in the Community Setting
This course focuses on the role of the nurse in the community working with individuals, families, groups and high risk populations in a variety of community settings. Caring for individuals across the lifespan including their families and the communities in which they live is emphasized recognizing physical, psychological, behavioral, social, and cultural needs. Evidence-based clinical concepts are incorporated as a basis for providing interventions for families and groups with multiple and complex health stressors within a population/public health framework. This course is for RN Completion Students. To continue in the nursing program the student must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): NUR 215 and NUR 216 with a grade of C+ or higher Corequisite(s): NUR 301H
Course Offered: Spring
Credits:

NUR 302 Pathophysiology
In this course students will examine normal body structure and function as well as concepts related to physiologic deviations that contribute to disease or that occur as a result of a disease, incorporating knowledge from the sciences as a foundation for provision of holistic, patient-centered care. Physiologic changes in body systems that lead to health problems across the lifespan will be addressed in the context of evidence-based research and clinical decision making. To continue in the program a student must maintain a grade of C+ (77 %) or better in this course. Prerequisite(s): NUR 217 with a grade of C+ or higher
Course Offered: Fall, Spring
Credits:

NUR 305 Health Promotion and Patient Education
This course combines the critical review of health promotion strategies and the framework for designing successful patient teaching tools. Students will be introduced to the major concepts of health promotion and the issues that impact upon health and wellness. In order to better understand the global impact of health upon our society, students will research various agencies that support health promotion and review their health care agendas. The second component of the course will be an introduction to the role of the nurse as an educator and the identification of barriers to learning will be explored. Methods to develop effective evidenced based teaching plans will also be covered. To continue in the nursing department you must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): NUR 215W and NUR 216 with a grade of C+ or higher.
Course Offered: Fall, Spring
Credits:

NUR 306 Care of Individual Chronic Health
This course focuses on the experiences of individuals/families with chronic health challenges within a multicultural society. The student will be introduced to concepts and skills common in the care of patients with chronic health challenges. Emphasis is placed on the nursing process and clinical decision making. The student will examine essential concepts and issues related to chronic health challenges from different viewpoints. Throughout this course the student continues to develop self-awareness, professionalism, and the knowledge, skills and attitudes necessary to practice nursing in a caring, non-judgmental manner in an increasingly complex health care system. Opportunities for application of these concepts are provided in various health care settings. To continue in the program a student must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): NUR 307 with a grade of C+ or higher. Corequisite(s): NUR 306H
Course Offered: Fall, Spring
Credits:

NUR 307 Nursing Care of Children and the Child Bearing Family
This course builds on the concepts of previous courses with emphasis on the application of the nursing process and the development of critical thinking skills in focusing on health during the childbearing years, ante partum, postpartum, and the health of infants and children through adolescence. Students will explore the concepts of health promotion, disease prevention, evidence based health practice, and alterations in health related to patients and families. Emphasis is on common health issues related to maternal newborn and pediatric specific content. Nursing management and planning will include concepts from culturally diverse settings. To continue in the nursing program the student must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): NUR 215W, NUR 216, and NUR 217 with a grade of C+ or higher. Corequisite(s): NUR 307H
Course Offered: Fall, Spring
Credits:

NUR 311 Clinical Pharmacology-Nursing
This course provides a foundation of basic pharmacology necessary for a nurse in general practice to establish a knowledge base that applies to patient centered care and education. Emphasis is placed on pharmacological concepts that build upon knowledge from the sciences to promote optimal well-being across the lifespan. Pharmacotherapeutic agents used to treat illness, and promote, maintain, and restore wellness are discussed in the context of evidence-based research, clinical judgment, and decision making. To continue in the program a student must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): BIO 170 and BIO 171 with a grade of C+ or higher and NUR 114 with a grade of C+ or higher, and Junior Status.
Course Offered: Fall, Spring
Credits:

NUR 401 Modes of Inquiry in Nursing
This course introduces the student to a comprehensive overview of the nursing research process. Research designs including qualitative, quantitative and mixed methods approaches will be examined. Concepts essential for understanding, interpreting, analyzing, and applying research to clinical nursing practice will be emphasized. Students will synthesize research evidence to enhance critical thinking and guide clinical decision-making. To continue in the nursing program the student must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): Any 300 level nursing course. Corequisite(s): MTH 110
Course Offered: Fall, Spring
Credits:

NUR 402 Community and Mental Health Nursing
This course focuses on both mental health and illness concepts and the role of the nurse in the community working with individuals, families, groups and high risk populations in a variety of community settings. Caring for individuals across the lifespan including their families and the communities in which they live is emphasized recognizing physical, psychological, behavioral, social, and cultural needs. Evidence-based nursing research concepts are incorporated as a basis for community/public health and mental health nursing practice. These concepts focus on individuals and groups with multiple and complex health stressors that exhibit maladaptive patterns and psychiatric disorders. Resources within the global community mental health system are identified. This course is for pre-licensure students. To continue in the nursing program, the student must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): NUR 306 Corequisite(s): NUR 402H
Course Offered: Fall, Spring
Credits:

NUR 404 Nurse as Advocate and Change Agent
This course will enable students to synthesize new knowledge and develop a personal perspective on their future professional career in nursing. The current health care environment demands a nursing workforce that is theoretically sound, clinically adept, and politically aware. Topics to be discussed and explored include patient advocacy, political awareness and influence, power and oppression, institutional policy/personal goals, risk management, utilization and audit, and quality assurance. Additional topics may be added in response to new or emerging trends in nursing and health care. To continue in the nursing program the student must maintain a grade of C+ (77) or higher in this course. Prerequisite(s): NUR 401
Course Offered: Fall, Spring
Credits:

NUR 405 Nursing Practicum: Special Topics
This course will allow the senior nursing student to integrate and apply knowledge from all previous courses. Under the direct supervision of an experienced registered nurse, the student will care for a variety of patients in a health care setting. Concepts including leadership, critical thinking, and

quality improvement will be applied in caring for patients, families, and communities to improve healthcare outcomes. Prerequisite(s): NUR 402 and 404 with a grade of C+ or higher Corequisite(s): NUR 405H
Course Offered: Fall, Spring
Credits:

NUR 406 Senior Leadership Practicum
This clinical preceptor course will provide a leadership experience for students enrolled in the Baccalaureate RN Completion track. Students will work with an experienced registered nurse functioning in a leadership role. Students will identify an area of interest in a health care setting and develop goals for their learning experience. The course will connect theoretical concepts to clinical practice allowing the learner to make the connection between the concept of nurse as change agent and nursing leadership. Prerequisite(s): NUR 404 with a grade of C+ or higher
Course Offered: Spring
Credits:

PROFESSIONAL COMMUNICATIONS (PCM)

PCM 305 Media in Communications
Students will apply the Microsoft Office skills which they have acquired to the creation of a number of real world professional communication documents and presentations. Students in the Professional Communications program must use Office applications effectively, carefully considering the purpose, function, audience, and venue of individual projects. This upper division course provides a range of assignments that reflect real world writing and speaking projects. Prerequisite(s): EGL 102 and junior level status
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 311 Introduction to Writing for Electronic Media
Introduction to Writing for Electronic Media will give students an overview of the issues concerning electronic media, including legal and ethical concerns. Students will learn how to write for electronic media in hands-on training in the school's computer labs using industry-standard programs. Prerequisite(s): EGL 102
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 313W Communications Theory (Writing Intensive)
This course is designed to provide an overview of the complete process of professional communication from clarification of the problem to the presentation to the final product. The elements of communication theory are covered, as well as the criteria by which to judge the adequacies of existing theories and the techniques for developing new ones. Students will have the opportunity to work with actual communications issues within industry and present their findings in a written, oral, or visual format. This is a writing-intensive course. Note: Students cannot earn credit for PCM 313 and 313W; PCM 313W can be used to fulfill the writing intensive requirement. Prerequisite(s): EGL 101 and EGL 102 with a grade of C or higher.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 315 Research Techniques
In this course students are introduced to information science, bibliographic practices, and research methods appropriate to finding, evaluating, and incorporating into documents both online and hard copy data and graphics. Students complete several research projects. Prerequisite(s): Upper division standing or permission of department chair.
Course Offered: Fall, Spring, Summer
Credits:

PCM 320 Communications in Business
In this course students learn to compose business documents including correspondence, directives, proposals, persuasive and informative memos, and researched, analytical reports. The course emphasizes electronic research as well as professional prose style, oral presentation, and page formatting. Prerequisite(s): Junior level status or permission of department chair.
Course Offered: Fall, Spring, Summer
Credits:

PCM 324 Report Writing and Technical Communications
A practicum in which students produce a variety of business oriented and technical documents. This course provides students with a survey of current practices and techniques appropriate to writing for forums, especially for technical journals, newspapers, and magazines. It is also designed to make students proficient at writing professional articles and reports such as new product information sheets, technical correspondence, periodic reports, summaries, process and technical descriptions, instructions and analysis, and to allow students to incorporate graphs, tables and other illustrative matter with textual content. Prerequisite(s): Upper division standing or permission of department chair.
Course Offered: Fall, Spring, Summer
Credits:

PCM 325 Writing in Health and Disease
Students will develop skill in articulating oral and written health information for multiple audiences. The course emphasizes how to interpret medical studies, how to think critically about ethical issues in the health sciences, and how to assess communication problems between medical professionals and the communities they serve. Nutritional guidelines and food politics also are explored in depth. Using appropriate research methods, students will practice several expository forms common in health professions, such as patient instructions and articles. Students also will write a personal essay and public service announcement. Prerequisite(s): EGL 102
Course Offered: Fall, Spring
Credits:

PCM 326 Sport Writing
In this course students will learn skills in the identification of legitimate angles for sport stories, how to report sport events, develop sport feature stories, and write sport opinion pieces, both for print publication and the web. Students will submit written articles, be required to write on deadline, and develop skills on interviewing. Students will deconstruct published stories and acquire an understanding of the process of assembling a well researched and expertly crafted sport story. Note: Students completing this course may not receive credit for SMT 326. Prerequisite(s): EGL 102
Credits:

PCM 328 Advanced Writing and Editing
In this course, students develop clean, concise, and precise prose style and master the use of professional symbols and techniques of editing in both hard copy and electronic formats. Students develop these skills in their own writing projects, those of fellow students, and those of other amateur and professional writers. This course includes the study of research, citation, and bibliographic formats for print and electronic sources. Prerequisite(s): Upper division standing or permission of department chair.
Course Offered: Fall, Spring, Summer
Credits:

PCM 329 Legal Writing and Analysis
PCM 329 is a course in which the student will learn the skills necessary to produce legal writing and analysis. Students will study current practices and contemporary models of legal writing, as well as legal research and the legal system. Students will compose various documents for discussion, review, and revision. A research project/appellate brief is required, which will include an oral presentation to the class. Prerequisite(s): EGL 102
Credits:

PCM 340 Special Topics in Professional Communications
Courses that range from 340-344 are special topics courses. Students will learn the skills necessary to write in a particular genre or type required in a particular professional setting. Students will study current practices and contemporary models and will compose several thoroughly researched documents in this genre for discussion, review and revision. Prerequisite(s): EGL 102 and junior level status.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 341 Special Topics in Professional Communications
Courses that range from 340-344 are special topics courses. Students will learn the skills necessary to write in a particular genre or type required in a particular professional setting. Students will study current practices and contemporary models and will compose several thoroughly researched documents in this genre for discussion, review and revision. Prerequisite(s): EGL 102 and junior level status.
Course Offered: Fall, Spring, Summer

Credits:

PCM 342 Special Topics in Professional Communications
Courses that range from 340-344 are special topics courses. Students will learn the skills necessary to write in a particular genre or type required in a particular professional setting. Students will study current practices and contemporary models and will compose several thoroughly researched documents in this genre for discussion, review and revision. Prerequisite(s): EGL 102 and junior level status.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 343 Special Topics in Professional Communications
Courses that range from 340-344 are special topics courses. Students will learn the skills necessary to write in a particular genre or type required in a particular professional setting. Students will study current practices and contemporary models and will compose several thoroughly researched documents in this genre for discussion, review and revision. Prerequisite(s): EGL 102 and junior level status.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 344 Special Topics in Professional Communications
Courses that range from 340-344 are special topics courses. Students will learn the skills necessary to write in a particular genre or type required in a particular professional setting. Students will study current practices and contemporary models and will compose several thoroughly researched documents in this genre for discussion, review and revision. Prerequisite(s): EGL 102 and junior level status.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 345 Special Topics:
Courses that range from 341-352 are special topics courses. Students will learn the skills necessary to write in a particular genre or type required in a particular career setting. Students will study current practices and contemporary models and will compose several thoroughly researched documents in this genre for discussion, review, and revision. An accompanying text may provide both general and detailed guidelines. A lengthy composition will be required at the end of the semester.
Prerequisite(s): EGL 102
Credits:

PCM 420 Advanced Technical Communications
Students learn advanced techniques in composing reports, technical papers, oral presentations, business communication, and press releases. Students evaluate classical and contemporary theories of rhetoric and apply them to their own writing as well as the writing of others. Prerequisite(s): Junior level status or permission of department chairperson.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 425 Documentation Procedures
Students learn to write instructions and explain processes in professional documents. They review style, editing, desktop publishing skills, and the overarching importance of attention to audience, purpose, and task.
Prerequisite(s): Permission of department chair or PCM 328 and VIS 242.
Course Offered: Fall, Spring
Credits:

PCM 426 Culture and Communication
The goal of this course is to introduce students to the various ways culture and communications are interrelated. Specifically, the course is designed to help students become more effective communicators in the multi-cultural world in which they live and work. To achieve this goal, students will study various theories about the relationship between culture and communication and apply these theories to solving real world problems that they may confront in communicating with people from other cultures.
Prerequisite(s): One Sociology course, and 300 Level PCM Course or EGL 216 or EGL 102, or Permission of the Chair.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PCM 428 Grant Writing
This course is an intensive study designed to provide a complete overview of the grant writing process. Students will learn to research funding sources, write proposals, and negotiate with funding sources. Required assignments include searching for funding agencies, using various courses, and working in groups to complete a sample grant proposal. Students will locate funding sources and complete a grant proposal. Prerequisite(s): EGL 101 and 102
Credits:

PCM 450 Professional Communications Internship I
This course is an internship in a business, civic, educational, government, or not-for-profit organization. Students participate by using their communication skills in real world situations. Prerequisite(s): Junior-Level status and permission of department chair.
Course Offered: Fall, Spring, Summer
Credits:

PCM 460 Internship II
Students will work in another off-campus organization. They will complete 90 hours of work on site, confer with their on-site supervisor and campus academic supervisor at regular intervals, and complete a portfolio illustrating responsibilities they completed in their on site location.
Prerequisite(s): PCM 450
Course Offered: Fall, Spring, Summer
Credits:

PHYSICAL EDUCATION (PED)

PED 100 Introduction to Badminton
This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the various shots needed, i.e. the forehand and backhand drive, clear smash and drop shot. It will also concentrate on the history, rules and etiquette of badminton.
Credit:

PED 115 Introduction to Self Defense
This course is designed to teach students the history of Self Defense. The basic skills needed in defending oneself against attack will be taught. Some forms of Karate and Judo will be included.
Course Offered: Fall, Summer
Credit:

PED 119 Introduction to Tennis
This course is designed to teach a beginning Tennis player the fundamental skills of the game; stressing the forehand and backhand serve and volley strokes. It will also cover history, scoring, rules, terminology, etiquette and strategy.
Course Offered: Fall, Summer
Credit:

PED 121 Introduction to Weight Training and Fitness
This course will provide students with the opportunity to develop weight training skills and techniques. This course is designed for students who are interested in physical fitness and will require weight training workouts during class time. We will discuss training safety and learn how to set up a personalized training program for another student.
Course Offered: Fall, Summer
Credit:

PED 125 Introduction to Racquetball
This class is designed to teach the basic skills, fundamentals, rules, strategies, and techniques required to play the game of racquetball. This introductory course will allow students the opportunity for skills acquisition to incorporate the game of racquetball as a lifetime activity.
Course Offered: Fall, Summer
Credit:

PED 131 Introduction to Golf
This course is designed to introduce students to the concepts, rules, etiquette, and skills involved in the sport of golf. This introductory course will allow students the opportunity for skills acquisition to incorporate golf as a lifetime activity.
Course Offered: Fall, Summer
Credit:

PED 135 Introduction to Volleyball
This course is designed to allow students to develop basic skills, learn the rules of the game, and utilize basic offensive and defensive systems of the game of volleyball.

Course Offered: Fall, Winter, Summer
Credit:

PED 140 Introduction to Basketball
This course is designed to teach the student the fundamental skills necessary to play the game of Basketball correctly. It will concentrate on the history, rules and etiquette of basketball, as well as the skills required to play the game both offensively and defensively.
Credit:

PED 203 Introduction to First Aid, AED and CPR Training
This course is designed to help students understand the principles of cardiopulmonary resuscitation and the effectiveness of the trained first responder. Students will become proficient in performing CPR on adults, children and infants. Students will also learn to perform various methods of Airway and Pulmonary Resuscitation and AED. The American Red Cross or the American Heart Association certification will be awarded upon the completion of the course. The course will also involve first aid when caring for accidents or sudden illness. Students will learn how to administer first aid and conduct immediate rescue and care of an emergency victim. All students will receive a Standard First Aid Card.
Course Offered: Fall, Summer
Credits:

PED 270 Theory and Techniques of Coaching
Topics will include a history of interscholastic athletics in NYS, as well as the objectives, rules, regulations, and policies of athletics. Performance skills, technical information and organization, and management practices will also be among the topics covered. The special training and conditioning of the athletes in specific sports, the filling of equipment needs, specific safety precautions, and officiating methods will also be examined. The student may spend time with a certified coach that would encompass practical experience in the specific sport and/or may spend time observing other approved, certified coaches.
Course Offered: Fall, Summer
Credits:

PED 275 Principles, Philosophy and Organization of Athletics in Education
This course covers basic philosophy and principles as integral parts of physical and general education. The student will learn about the state, local, and national regulations related to athletics. In addition, legal considerations and the function and organization of leagues and athletic associations in NYS will be addressed. Personal standards for the responsibilities of the coach as an educational leader, as well as his or her role in public relations and general safety procedures will be covered. The student will also understand the general principles of school budgets, records that must be kept, the purchasing function, and the use of facilities.
Course Offered: Fall, Summer
Credits:

PED 280 Health Sciences Applied to Coaching
This course is a series of interactive exercises designed to study Health Sciences as they apply to coaching sports. Through these activities, exercises and health application to coaching topics, participants will gain information, organize it for professional and personal use, and apply it to their particular programs. This course will also help define selected principles of biology, anatomy, physiology and kinesiology related to coaching, risk minimization, mixed competition, NYSED selection and classification of athletes, and age and maturity of athletes.
Course Offered: Fall, Summer
Credits:

PED 285 Rules of the Game and NCAA Compliance
This course will prepare students for involvement in the areas of recreation, interscholastic and collegiate sports as well as NCAA compliance. A review of the rules of non-major sports will be emphasized, as there is an increase in participation in those sports by scholastic and college athletes. This course will also help students develop careers in the interscholastic sport administration.
Course Offered: Summer
Credits:

PED NC1 NCAA Physical Education Credit
The Sports Management and Physical Education Departments offer one credit if Physical Education given to any student that participates, in accordance with department guidelines on an NCAA approved athletic team offered at Farmingdale State College. There will be a maximum of two credits issued per student athlete during their stay at FSC.
Credit:

PED NC2 NCAA Physical Education Credit
The Sports Management and Physical Education Departments offer one credit of Physical Education given to any student that participates, in accordance with department guidelines, on an NCAA approved athletic team offered at Farmingdale State College. There will be a maximum of two credits issued per student athlete during their stay at FSC.
Credit:

PHILOSOPHY (PHI)

PHI 103 Philosophy, Law and the Modern Citizen
An introduction to concepts in philosophy, law, and citizenship and their interrelationship. Ancient and modern thinkers in each field are discussed. Emphasis is on the application of theory to everyday life through citizen apprenticeship.
Course Offered: Fall, Summer
Credits:

PHI 105 Philosophy: Classical and Medieval
An examination of philosophical issues based on the writings of classical and medieval authors. Major topics include theory of knowledge, logic, and religion. Prerequisite(s): EGL 101
Course Offered: Fall, Spring, Summer
Credits:

PHI 106 Philosophy: Modern and Contemporary
An examination of philosophical issues based on the writings of modern and contemporary authors. Major topics include metaphysics, ethics, and politics. Prerequisite(s): EGL 101
Course Offered: Fall, Spring, Summer
Credits:

PHI 110 Philosophy, Politics & Society
This course is an introduction to social and political philosophy. Students will encounter concepts as practical tools for modern citizenship and guides to understanding and critiquing the worlds in which they live. The aim of this course is a more reflective political life, a sophisticated awareness of social and cultural issues, and an understanding of and appreciation for social and political concepts. Prerequisite(s): EGL 101
Course Offered: Fall
Credits:

PHI 205 Ethics
An examination of ethical theories including relativism, determinism, and the concept of duty, and the application of these theories to contemporary problems. The place of ethics in relation to other branches of philosophy and the role of religion in shaping ethical theory are also discussed.
Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

PHI 207 Business Ethics
An examination of ethical issues that arise in business and how these issues can be resolved. Various principles of ethical theory are analyzed and applied to particular business situations. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

PHI 211 Logic
Logic is an introductory course in reasoning offered by the English/ Humanities Department. Topics to be considered include: logic and its essential role in the expression of ideas; the definition of logic: kinds of logic, e.g., informal, formal, symbolic; the role of logic in relation to the other fields of philosophy, and to the fields of the social and natural sciences. Other topics: valid categorical syllogisms, syntactic and semantic concepts of proof, reasoning with classes, Venn diagrams, reasoning with propositions, propositional logic, paradox analysis and heuristics- how to think of new ideas and how to solve problems. Prerequisite(s): EGL 101
Course Offered: Fall, Summer
Credits:

PHI 220 Special Topics in Philosophy
This course allows students to explore intensively a major philosophical period, author or theme. The subject for each semester will be determined prior to registration. Possible topics include: Bioethics, Philosophy of Religion; Philosophy of Africa. Short papers involving secondary research will be required. Prerequisite(s): EGL 102 with a grade of C or higher
Course Offered: Fall, Spring, Summer
Credits:

PHI 230 Philosophy Through Film
This course introduces students to the history of philosophy through cinema. Philosophical texts will be paired with films that explore philosophical questions or themes. This course also considers how film provides a creative and enjoyable public medium for the discussion of philosophical theories and ideas. Prerequisite(s): EGL 101 and EGL 102 all with a grade of C or higher
Course Offered: Fall
Credits:

PHI 307 Philosophy of Science and Technology
A philosophical overview of developments in science and technology, showing their impact on general culture. Some highlights include the early separation of religion and philosophy, the role of mathematics in culture, the beginnings of modern science in the works of Galileo, Descartes, Leibniz and Newton, and contemporary revolutions in science and technology. Prerequisite(s): One semester of science and EGL 102 with a grade of C or higher
Course Offered: Fall, Summer
Credits:

PHYSICS AND PHYSICAL SCIENCE (PHY)

PHY 110 Physical Science: Physical Geology
A survey course in physical geology, examining the various minerals and rock types and the physical processes occurring on and below the surface of the earth.
Course Offered: Fall, Summer
Credits:

PHY 111 Physical Science: Historical Geology
A study in the origin and evolution of the earth through geological time and the methods used by geologist in determining the geological history of the earth.
Course Offered: Summer
Credits:

PHY 112 Physical Science Survey
A broad descriptive course in Physical Science. Topics to be covered will be from the areas of Philosophy of Science, Astronomy, Physics, Meteorology, Chemistry, Technology, and the Environment.
Course Offered: Fall, Summer
Credits:

PHY 113 Physical Science: Physics
A descriptive course that presents the ideas of Classical and Modern Physics qualitatively and conceptually. The emphasis will be on the relevance of Physics to the students' own experience. Topics covered will be Mechanics, Properties of Matter, Heat, Sound, Electricity and Magnetism, Light, Quantum Theory and Nuclear Physics. This course requires some knowledge of high school level mathematics.
Course Offered: Fall, Summer
Credits:

PHY 114 Physical Science: Environment
A descriptive course dealing with environmental problems caused by population, pollution, transportation, energy requirements, radioactivity, radioactive wastes, thermal emission, noise and heat.
Course Offered: Fall, Spring
Credits:

PHY 115 Physical Science: Energy
An introductory course in the scientific, technological and social aspects of Energy. The course is intended to develop an understanding of the physical basis of Energy and an appreciation of the role of Energy in the contemporary world. Basic concepts and principles are studied. Conservation Laws, Fuels, and Energy Conversion Systems are discussed. Resources, Consumption Patterns, and Alternative Economics are analyzed.
Course Offered: Fall, Summer
Credits:

PHY 116 Physical Science: Meteorology
A descriptive course in elementary meteorology that will introduce the student to weather analysis and forecasting. Topics covered will be Temperature, Pressure, Wind Radiation, Clouds, Precipitation, Synoptic weather charts, Air Masses, Low and High Pressure Areas, Frontal Systems, Thunderstorms, Weather Forecasting, and Local Weather. Weather charts will be analyzed and students will make their own weather forecasts.
Course Offered: Fall, Summer
Credits:

PHY 117 Physical Science: Solar Astronomy
An elementary astronomy course in which the student is introduced to the historical development of astronomy, and to our present view of the solar system and its origins. Recent NASA missions to the planets are discussed, and periodic observations of the skies may be conducted.
Course Offered: Fall
Credits:

PHY 118 Physical Science: Stellar Astronomy
An elementary astronomy course in which the stars and galaxies are treated in detail. Recently discovered phenomena, such as pulsars, quasars, and black holes will be studied. Discussion will also center on cosmology, the NASA missions, colonization of space, and other topical subjects in astronomy. Periodic evening observations of the skies may be conducted.
Course Offered: Spring
Credits:

PHY 119 Physical Science: Technology
A descriptive course emphasizing the major events in Technological History, the Rise of Scientific Technology, Delivery Systems, Systems Science, and the impact of Technology of Man and Society. The course is intended to assist the student in the formulation of a personal set of criteria in order to understand and respond to technological changes in modern society.
Course Offered: Fall, Spring
Credits:

PHY 120 Physical Science: Extraterrestrial Phenomena
The possible existence of extraterrestrial life is examined by investigating those areas of the physical sciences and related disciplines which may shed more light on this elusive problem. Arguments are drawn from astronomy, astrophysics, electromagnetic theory, probability theory, relativity, atomic physics, nuclear physics and particle physics. Historical and archaeological views are also discussed. The discussion of extraterrestrial life is utilized as a framework from which many mysteries of the universe are unraveled for the student.
Course Offered: Fall, Summer
Credits:

PHY 121 Descriptive Classical Physics
A course covering the fundamental concepts of Classical Physics. Primarily intended for students in the Arts option of the Liberal Arts and Sciences program. Topics will include mechanics, heat, electricity, and magnetism. A knowledge of elementary algebra is required.
Course Offered: Fall, Summer
Credits:

PHY 122 Descriptive Modern Physics
This is a course covering the fundamental concepts of modern physics. This course is intended for non-science students, including students in the Arts Option of the Liberal Arts and Sciences programs, as well as students in the School of Business. Topics will include waves, light, relativity, quantum physics, the nucleus and elementary particles. Knowledge of elementary algebra is required.
Course Offered: Summer
Credits:

PHY 123 The Theory of Everything-The Unification of Physical Law
The four fundamental forces in nature, gravity, electromagnetism, and the strong and weak nuclear forces, appear to be very distinct phenomena. Early attempts to unify them into a single theory of the universe were met with failure and even such great physicists as Albert Einstein were

often derided for such futile efforts. With the advent of recent strides in string theory, super symmetry, M-Theory and hyperspace, most physicists believe that man is within reach of such fundamental knowledge. It is the purpose of this course to place this same understanding of unification within the student's grasp. Without resorting to any complex calculations, the course will survey Newton's classical mechanics, Maxwell's theory of electricity and magnetism, Einstein's relativity theories, quantum mechanics, particle physics, and the new particle physics strings. The student will contemplate the possibility of a universe which may be fully explained by a single physical theory.
Course Offered: Fall, Summer
Credits:

PHY 125L Physical Science Laboratory I
A Physical Science Laboratory to accompany any of the Physical Science Theory courses listed above. Experiments will be in the area of Physics, Astronomy, Meteorology, the Environment and Technology.
Course Offered: Fall, Summer
Credit:

PHY 126L Physical Science Laboratory II
A continuation of PHY 125L. Prerequisite(s): PHY 125L
Course Offered: Fall, Summer
Credit:

PHY 128 Physics: Computers/ Computation
The physical principles which govern the design and use of computing equipment are discussed. Discussion will include the historical development of computation equipment from the Babbage calculator through integrated semiconductor logic and laser-optical memories. Other topics will demonstrate the use of computation in scientific applications and will include Boolean logic, binary arithmetic, programming languages and an introduction to programming. Prerequisite(s): PHY 113
Credits:

PHY 129 Computers in Physical Sciences
A course designed to familiarize the student with computer operation in the physical science laboratory.
Credit:

PHY 135 College Physics I
An integrated theory/laboratory general college physics course without calculus. Topics will include fundamental concepts of units, vectors, equilibrium, velocity and acceleration in linear and rotational motion, force, energy, momentum, fluids at rest and in motion, and oscillatory motion. Laboratory problems, experiments and report writing associated with the topics studied in the theory are performed. Prerequisite(s): MTH 129 Corequisite(s): PHY 135L
Course Offered: Fall, Spring, Summer
Credits:

PHY 136 College Physics II
A continuation of PHY 135. Topics will include heat, electricity, magnetism, light and optics. Prerequisite(s): PHY 135 Corequisite(s): PHY 136L
Course Offered: Fall, Spring, Summer
Credits:

PHY 143 General Physics I (Calculus)
A fundamental, calculus based, physics course with laboratory offered primarily for students in Science curricula. Topics discussed include Mechanics, Wave Motion, Kinetic Theory, and Thermodynamics. One of MTH 130 or MTH 150 must be taken either as a prerequisite or corequisite.
Course Offered: Fall, Summer
Credits:

PHY 144 General Physics II (Calculus)
A continuation of PHY 143. Topics discussed include Electricity, Magnetism and Optics. Prerequisite(s): PHY 143 Corequisite(s): PHY 144L
Course Offered: Summer
Credits:

PHY 151 University Physics I
A fundamental, calculus based, physics course in three semesters offered primarily for students in the Engineering Science curriculum. Topics discussed in the first semester include mechanics of particles and rigid bodies, work energy momentum, conservation laws, and fluids.
Prerequisite(s): MTH 150
Course Offered: Fall, Spring, Summer
Credits:

PHY 152 University Physics II
A continuation of PHY 151. Topics will include Coulomb's Law, the electric field, potential, capacitance and properties of dielectrics, current, resistance and electromotive force. D-C circuits and instruments. The magnetic field and forces, induced EMF, alternating currents and electromagnetic waves. Prerequisite(s): PHY 151 Corequisite(s): MTH 151
Course Offered: Fall, Summer
Credits:

PHY 161 University Physics Laboratory
Laboratory experiments associated with PHY 151 and part of PHY 152. Prerequisite(s): PHY 151 Corequisite(s): PHY 152
Course Offered: Fall, Summer
Credit:

PHY 220 Of the Cosmos: Humans in the Universe
Of the Cosmos - Humans in the Universe explores the context of our existence in terms of cosmic, biological, and societal evolution. Within this interdisciplinary course we will examine how the underlying physical laws of our Universe, acting across systems of varied complexity, have led to the current state of our civilization. Starting with the Big Bang, we will follow the evolution of matter from primordial nucleosynthesis to the formation of the Earth in the solar nebula. We will examine the evolution of life on Earth, the ascent of Humankind, the emergence of civilization, invention of technology, and the long-term prospects for the species. Current problems facing our civilization (e.g. climate change, resource scarcity, antibiotic resistance) will be examined within this context. Prerequisite(s): General Education Lab Science
Credits:

PHY 228 Introduction to Computational Physics
An introduction to computational physics in which students will apply the mathematical techniques of root finding, numerical integration, interpolation, Fourier analysis, and the solution of ordinary differential equations to physical problems including chaotic dynamics, circuit response, electrostatics, data modeling and prediction, and biophysics. No previous programming experience is expected though basic computer skills will be helpful. Prerequisite(s): (PHY 135 or PHY 143) and (MTH 130 or MTH 150) all with a grade of C or higher.
Credits:

PHY 242 The Science of Science Fiction
This course surveys the science within science fiction in multiple genres of media (e.g. print, television, and movies). It explores the uses and abuses of the hard sciences in service to storytelling. It identifies the importance of real scientific ideas in understanding the limits and boundaries of science fiction's commentary on society. Prerequisite(s): PHY 135 or PHY 143
Credits:

PHY 253 University Physics III
A continuation of PHY 152. Topics will include temperature and expansion, heat and heat measurements, transfer of heat, thermal properties of matter thermodynamics, molecular properties of matter, wave motion, vibration bodies, acoustical phenomena, light reflection and refraction, lenses and optical instruments. Interference and diffraction, polarization.
Prerequisite(s): PHY 152
Course Offered: Fall, Spring, Summer
Credits:

PHY 254 Modern Physics
An introduction to the basic ideas of modern physics such as Einstein's theories of relativity, early ideas of atomic structure including the Bohr and Rutherford models, photoelectric effect, de Broglie waves, wave mechanics, Schroedinger's Equation, Heisenberg's Uncertainty Principle, Hydrogen Atom, electron spin, Pauli's Exclusion Principle, quantum oscillator, classical and quantum statistics, solid state physics, nuclear physics and elementary particles. Prerequisite(s): PHY 144 or PHY 253
Course Offered: Fall, Summer
Credits:

PHY 255 Oscillatory Motion and Waves
An introduction to physical concepts (wave packets, normal modes, interference and diffraction) and mathematical techniques (Fourier series, transforms, complex numbers, eigenvectors), including the wave equation. Prerequisite(s): PHY 136 or PHY 144 and MTH 151 or MTH 236 all with a minimum grade of C or higher.
Credits:

PHY 262L University Physics II Lab
Laboratory experiments associated with PHY 152 and PHY 253. Prerequisite(s): PHY 161 Corequisite(s): PHY 253
Credit:

PHY 304 Big Data and Society
This course will survey the current methods employed to measure, shape, and predict large scale patterns, problems, and solutions in our society. It focuses on how creating, understanding, and manipulating large data sets affects society. Students will learn firsthand to work with large data sets and make novel predictions using computational techniques. Prerequisite(s): PHY 135 or PHY 143, and Junior status Corequisite(s): PHY 304L
Credits:

PHY 310 Analytical Mechanics
A course in Analytical Mechanics covering Vectors, Newtonian Mechanics – Rectilinear Motion of a Particle, Oscillations, The General Motion of a Particle in Three Dimensions, Non-inertial Reference Systems, Gravitation and Central Forces, Dynamics of Systems of Particles, Mechanics of Rigid Bodies – Planar Motion, Lagrangian Mechanics. Prerequisite(s): PHY 144 and MTH 253
Credits:

PHY 323 Electromagnetic Theory
This course is an introduction to electromagnetic theory. Topics covered are Vector Analysis; Coulomb's Law; Gauss's Law; the Del Operator; the Divergence and Gradient; the Potential; Potential Gradient; Conductors, Dielectrics and Capacitors; the Magnetic Field; the Biot-Savart Law; Ampere's Law; the Curl of E and H; Faraday's Law; Maxwell's Equations. Prerequisite(s): PHY 136 and MTH 236
Course Offered: Spring
Credits:

PHY 333 Modern Physics
An introduction to topics in modern physics for upper-division students. Topics included are Einstein's Special Theory of Relativity, Atomic Physics, Applied Nuclear Physics, and Solid State Physics. Prerequisite(s): PHY 136 or 144
Course Offered: Fall, Spring
Credits:

PHY 334L Modern Physics Laboratory
An introduction to topics in modern physics for upper-division students. Topics included are Einstein's Special Theory of Relativity, Atomic Physics, Applied Nuclear Physics, and Solid State Physics. Prerequisite(s): PHY 136 or 144 both with a grade of C or higher. Corequisite(s): PHY 333T
Credit:

PHY 356 Integrated Topics in Math and Physics
This is a new integrated math-physics course with applications to topics in physics and the engineering technologies. It is meant to be interdisciplinary in nature and directed toward students in the Bachelor of Technology and Applied Math Programs. Topics to be covered include: Vector Algebra, Vector Calculus, Scalar and Vector Field Theory, Fourier Series, Fourier Integral, Fourier Transforms and Laplace Transforms. The focus will be on application and integration of math methods to physics and engineering technologies. Note: Students completing this course may not receive credit for MTH 356. Prerequisite(s): MTH 236 or 252 and PHY 136 or 144
Course Offered: Summer
Credits:

PHY 420 Optics
This course is an introduction to the study of light on the intermediate level. It is an elective course for students in their fourth year of the Electrical Technology program. It begins with a review of the mathematics of wave motion. Starting from Maxwell's equations, the electromagnetic theory of light is discussed. Topics covered will be the propagation of light, the laws of reflection and refraction, the superposition of waves, interference and diffraction of light, the quantum nature of light, and the concept of the laser. Prerequisite(s): PHY 323
Credits:

PHY 480 Physics Research I *AL
Physics Research I represents substantial projects or work experiences for 135 hours earning 3 credits. Students will work alongside physics faculty in their professional research. Registration requires submission of resume three months in advance, physics faculty invitation or recommendation, and department Chair approval. Prerequisite(s): PHY 135 or PHY 143 with a minimum grade of C or higher; and permission of department chair
Course Offered: Fall, Spring
Credits:

PHY 481 Physics Research II
Physics Research II represents substantial projects or work experiences for 135 hours earning 3 credits. Students will work alongside physics faculty in their professional research. Registration requires submission of resume three months in advance, physics faculty invitation or recommendation, and department Chair approval. Prerequisite(s): PHY 480 Physics Research I with a minimum grade of B or better; and permission of department chair
Course Offered: Fall, Spring
Credits:

POLITICS (POL)

POL 105 Introduction to Politics
This course will introduce students to the study of politics and to the discipline known as Political Science. Focusing on fundamental concepts of power and authority, the course will examine topics central to each of the main subfields of Political Science: American Politics, Comparative Politics, International Relations, and Political Philosophy. It will also explore some contemporary issues and debates that captivate US politics.
Course Offered: Fall, Winter, Spring, Summer
Credits:

POL 110 Introduction to Legal Studies
This is a survey course designed to give the student a basic introduction to law beginning with the various schools of legal philosophical thought, criminal and civil law and procedure, and basic contract law. The course provides the student with an understanding and overview of how the American legal system functions including introducing students to the principles of law, the administration of the legal system, legal terminology, and the inter- relationship between politics, governmental structures, legal professionals and the functioning of the legal system.
Course Offered: Fall, Spring, Summer
Credits:

POL 115 Introduction to Public Policy
This course is a survey of contemporary issues in American public policy such as education, health care, welfare programs, crime, environmental issues, and the economy. The course will promote familiarity with major policy issues being discussed and debated in government today, as well as develop students problem-solving abilities, analytical techniques, critical thinking, and communication skills. A variety of social science fields and concepts, including political economy, program evaluation, policy analysis, and public management, will be assessed and applied to problems of governmental administration, management, and operations.
Course Offered: Fall, Summer
Credits:

POL 250 American Politics
This course introduces students to American Politics by focusing on national politics. In addition to examining the structure of U.S. government at the federal level, this course will also investigate American political behavior (especially political parties, elections, voting) and selected policy debates the animate contemporary political discussion.
Course Offered: Fall, Spring, Summer
Credits:

POL 251 State and Local Government
An examination of the structures and purposes of state, county, and municipal political institutions, emphasizing the importance of citizen participation in community affairs and the election process, in enhancing the effectiveness of state legislatures and judicial systems, county and

municipal government, and the protection of civil rights through law enforcement.
Course Offered: Fall, Spring, Summer
Credits:

POL 262 Global Politics
An introduction to global politics which explores regional issues in Europe, Asia, Africa, the Middle East, the America etc., as well as genuinely transnational concerns such as pandemics, international terrorism, environmental degradation, etc. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Fall, Winter, Spring, Summer
Credits:

POL 263 American Foreign Relations
A focus on American foreign relations in the post-World War II era, describing the transition from isolationism to the adoption of mutual security agreements, and political and constitutional sanctions which sustain the nation's overseas commitments.
Course Offered: Spring
Credits:

POL 264 Public Administration
Introduces the role of public administration in governance at the local, regional, state, and federal level. Topics include the development of public administration as a profession and as an academic discipline; administrative and organizational theory; decision-making; the effect of politics; how policies are evaluated; as well as the roles of management, budgeting, finance, accountability, and ethics. By reading and discussing classic texts, and through analysis of case studies, students will understand the institutions, processes, and values that underlie the administration of public policy in both government and non-profit settings. Prerequisite(s): EGL 101 and any 100-level POL course both with a C or higher.
Course Offered: Fall
Credits:

POL 265 Comparative Politics
This course examines a broad range of governmental systems utilizing the comparative methods of analysis. In addition to analysis of selected political systems in the developed world (e.g., Great Britain, the United States, and the Russian Federation), students will also explore the governmental structures of at least one country in the developing world (India, Brazil, the People's Republic of China, etc.). Students will also compare plural democracies, monarchies, dictatorships, and neo-authoritarian forms of government, emphasizing policy-making and contemporary problems facing the state in era of globalization, such as the purported victory of neo-liberalism, the threat of terrorism, and the importance of satellite television and the Internet in shaping politics.
Course Offered: Fall, Spring, Summer
Credits:

POL 267 Politics of the Muslim World
This course provides an introduction to the global politics Islam, including regional issues in the Arab world, Central Asia, and South Asia, as well as the impact of Islamic politics on parts of the globe where Muslims represent a significant minority (Europe, Russia, China, and sub-Saharan Africa).
Course Offered: Summer
Credits:

POL 273 Italian Politics and Society
This survey course is designed for students who have a lively curiosity about Italy. Employing a historical perspective, students will examine Italy's efforts at "nation-building" from Machiavelli to the present. Students will learn about Italy's unique and extensive contributions to Western Civilization (politics, economics, science, art, culture, societal organization). They will also be introduced to definitions, concepts, distinctions, and theories that are fundamental to the study of political science and, in particular, the subfields of comparative politics and political philosophy.
Course Offered: Spring
Credits:

POL 310 Introduction to Political Theory
This course will introduce students to some of the major themes and classic works of Western political philosophy. Focusing on a central theme (e.g. political obligation, human rights, equality), students will examine how that issue is addressed by some classic political philosophers such as Plato, Hobbes, Locke, Rousseau, Marx. They will also assess and debate contemporary US theory and practice with regard to the issue at hand. Prerequisite: Any 100 level or higher social science.
Course Offered: Fall, Summer
Credits:

POL 320 Internet Politics
In the developed world, the issue is not whether the Internet affects politics, society, culture and commerce, but rather how and why it does and to what consequences. How do we comprehend the tensions, contradictions, conflicts, paradoxes created by the rapid spreading of the Internet? This course examines the impact of recent communication technologies on the social system, democracy and government, social movements and interactions, markets and commerce, globalization and governance, and the relations between culture and the state. This course focuses on the intersections among politics, society and commerce through a comparative perspective and asks students to evaluate the central controversial policy dilemmas and problems that have emerged and persisted over the Internet. Prerequisite(s): Any 100 level higher HIS or POL course.
Course Offered: Spring
Credits:

POL 330 21st Century Energy Policy
In this course, students will examine pivotal questions of U.S. and global energy policy. Topics covered will include the development of alternatives and emerging technologies, energy efficiency, government intervention in markets, and the future role of conventional sources. While the focus is on the electricity sector, the roles played by food production and transportation will be considered as well. Students will also evaluate the role of localities and states, paying particular attention to how they are responding to changes in federal policy. Prerequisite(s): Any 200 level or higher social science Course with a grade of C or higher
Course Offered: Fall
Credits:

POL 360 Women in Comparative Development
This course examines the relationship between women and development, including controversies surrounding the gendered impact of development strategies. It explores issues such as women's health, education, employment, and population planning in the developing world. The course will analyze how women's rights, leadership, and political participation are restricted or hindered by various societal and governmental structures. The course will consider a wide range of issues and human rights violations against women and examine how such inequalities affect the political and developmental progress of a country. Prerequisite(s): Any 200-Level or higher social science course.
Course Offered: Summer
Credits:

POL 370 International Relations
This course examines how the international political system was established and how it has changed since the Peace of Westphalia. Focusing on the role of states, complemented by a thorough analysis of non-state actors, students will investigate how the global system works and how the process of globalization is remaking the political and economic world. The art and purpose of diplomacy will also be explored. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Fall, Winter, Summer
Credits:

POL 371 Geopolitics
This course examines the strategic, political, and cultural developments and concepts associated with geopolitical from late 19th century through the current era. Combining knowledge of international relations and world geography, students will examine how states and nations interact in an increasingly globalized world. Special topics will include the geopolitics of space, energy, religion, and the environment. Popular media's impact on geopolitics understanding will also be explored. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Fall
Credits:

POL 372 Politics of Europe
This course is a comparative evaluation of European governments and politics, paying particular attention to challenges facing the Continent such as ethno-nationalism, immigration, and terrorism. Integration of the former Eastern Bloc into Europe since 1989 will figure prominently in the course. Transnational cooperation and integration through organizations such as

NATO and the European Union will be considered. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Spring
Credits:

POL 373 Politics in Asia and the Pacific Rim
This course is a comparative evaluation of governments and international politics in the Asia-Pacific region, paying particular attention to the rise of China and the new geopolitics of the Pacific Rim. Regional rivalries, economic reform, and foreign policy will figure prominently in the course. Transnational cooperation and integration through organizations such as APEC, ASEAN, and ANZUS will be considered. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Spring
Credits:

POL 374 Politics in Africa
This course addresses modern African politics, including, but not limited to the colonial background and its consequences, ethnicity, the military, ideology, dependency, democracy and political stability. While a thematic approach to African politics is stressed in the course, an underlying current in the course will be the tensions that exist between opposing forces in African politics. Some of these influences include foreign and indigenous influences, anarchy and order, democracy and authoritarianism, socialism and capitalism, political decay, and development. Prerequisite(s): Any 200-level course in Social Science
Course Offered: Spring
Credits:

POL 390 Environmental Politics
This course examines the evolution of the environmental movement in the U.S. and worldwide, focusing on the debate over environmental protection, policy-making, and the political ramifications for the national governments. Biodiversity, climate change, population issues, water pollution, regulation of emissions, land preservation, energy policy, transnational cooperation, eco-terrorism, and theories of the global commons will all be explored from a domestic and global perspective. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Fall, Summer
Credits:

POL 391 Mass Media and Politics
This course provides a comprehensive survey of mass media's role in politics and the impact of the political environment on the press. It investigates the major media platforms (print, radio, television and the Internet) and how each shapes political culture. While the scope of the course is global, much attention is paid to the American media landscape. Other regions to be covered include the former Soviet Union, the Arab World, East Asia, and Europe. Special topics to be explored include: news management, transnational media empires, the CNN effect, infotainment, "fake news," the mass mediation of terrorism, and the connection between media and democracy. Prerequisite(s): Any 100 or higher level HIS or POL course.
Course Offered: Fall
Credits:

POL 392 Religion and Politics
This course examines the complicated and often fractious relationship between religion and politics. Following a brief introduction to the world's major religions, we will explore how politics and faith interact around the globe. Following a geographic approach, we will focus first on the United States before investigating the politics of religion in Europe, the Middle East and Africa, Latin America, and the Asia-Pacific region. The themes of theocracy, sectarian conflict, fundamentalism, Islamism, secularism, and so-called "religious terrorism" will be investigated. Prerequisite(s): Any 100-level or higher POL or HIS course.
Course Offered: Fall, Summer
Credits:

POL 393 Politics and Popular Culture
This course examines the influence of popular culture on political identity within the United States and across the globe. The relationship between the U.S. entertainment industry and the political system will be explored, while the second half of the course will focus on the impact of global popular culture on international relations. Various forms of pop culture will be addressed, including but not limited to: film, television, music, video games, novels, comics, political cartoons, jokes, blogging, fads, and fashion. Prerequisite(s): Any 100-level or higher HIS or POL course.
Course Offered: Summer
Credits:

POL 395 Special Topics in Politics
This course offers instruction in special content areas not included in other Politic courses. All courses will include component focusing on the interplay between technology, globalization, and politics, either in U.S. or at the international level. This course will require extensive reading and research, focused on the selected topic. Students should consult the department before registering for any Special Topic course. Prerequisite(s): Any 100 level or higher HIS or POL course.
Course Offered: Fall, Summer
Credits:

POL 398 Washington DC Internship
This option is available to students admitted to the Washington Internship Institute (WII) program that is affiliated with Farmingdale State College. A wide variety of internships are available in government offices, nonprofit organizations, and for-profit companies. Recent Farmingdale students have been placed at the IRS, the non-profit "No Labels," The Center for American Democracy, CNN, the Iraqi Embassy, and Capitol Hill offices. The four-day per week internship is supplemented by two courses: an internship seminar and an extra course selected by the student. Prerequisite(s): Approval by Study Abroad Office and Student's Department Chair Corequisite(s): Sophomore, Junior, or Senior status
Course Offered: Fall, Spring, Summer
Credits:

POL 399 NYS Legislative Internship
For students participating in the full-time New York State Assembly and Senate Legislator Session Internship programs. Students work as staff members in their assigned State Legislator/Senator's office a minimum of 30 hours a week, conducting. During the internship, students participate in seminars, mock legislative sessions, and weekly research and written assignments. A written report on the internship experience is required of the student at the conclusion of the internship. Internships are open only to qualified junior and seniors with an overall grade point average of 3.0 or higher through a competitive selection process. Spring semester only. Note: Students must consult with the Campus Liaison Office to determine credit value to be assigned. Prerequisite(s): Permission of the Department Chair and Junior/Senior Level status and admission to NYS Assembly/Senate Internship Program.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PSYCHOLOGY (PSY)

PSY 101 Introduction to Psychology
This course is designed to present basic psychological concepts and to introduce students to the scientific study of behavior. Core topics include methods of psychological research, the biological bases of behavior, principles of learning, memory and cognition, personality, and psychopathology. Other selected topics to be covered would include the following: motivation and emotion, life-span development, social psychology, health psychology, sensation and perception, intelligence, human sexuality, statistics, and altered states of consciousness.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PSY 230 Gender Psychology
This course will examine sex role stereotypes and their effects, research on psychological sex differences, theories of male and female development, sex roles and social institutions - how perceptions of males and females are influenced by schools, religion, and the media; and male and female approaches to sexuality, marriage, and parenthood. Readings and class discussions will be used to help students achieve a greater understanding of the female and the male experience. Prerequisite(s): PSY 101.
Credits:

PSY 231 Group Dynamics
This course blends theory and application of the principles of group interaction and development. This is not a lecture course. Through actively participating in class exercises, students will have an opportunity to develop their sense of self in relation to others and to develop skill in effective group functioning. The general content of the course involves group formation,

communication, leadership, decision-making, problem solving, goal setting, power and influence, conflict and conflict resolution, cohesion norms, and stages of group development. Prerequisite(s): PSY 101.
Credits:

PSY 232 Child Development
In this course the student will explore human development from preconception through the end of childhood. Course material will include historical and modern concepts of attitudes towards children, theories and models of child development, research methods in the study of children, genetics, prenatal development and influence, pregnancy, and birth. Within each age range the emphasis will be on factors influencing the physical, cognitive, social, and emotional development of the child. Developmental disorders, both physical and psychological, will also be explored. Prerequisite(s): PSY 101.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PSY 233 Adolescent Development
This course focuses on adolescent behavior. The emphasis is on growth and change-physiological, psychological/interpersonal and socio-cultural. Issues of particular concern to adolescents will be presented and discussed. Some selected topics are: peer pressure, the sexual issue, the availability of drugs, establishing a separate identity, dating and relationships and finally the transition to adulthood. Prerequisite(s): PSY 101.
Course Offered: Fall, Spring
Credits:

PSY 234 Social Psychology
This course introduces the student to the study of how people influence each other. Topics to be covered include: liking and loving, aggression and violence, obedience and compliance, helping in emergencies, attitudes, prejudice and sexism. In addition, social perception and group behavior will be examined. Prerequisite(s):PSY 101.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PSY 237 Theories of Personality
The course will examine the concept of personality from four theoretical perspectives: psychodynamic, trait, learning, and humanistic. Representative theories of each perspective are discussed in terms of basic conceptualizations, methods of assessment, development, research and clinical applications. Prerequisite(s): PSY 101.
Course Offered: Fall, Spring
Credits:

PSY 238 Psychology of Human Sexuality
This course presents a scientific foundation for the understanding of the psychological, physiological, social, and behavioral aspects of human sexuality. In addition to studying historical changes in sexual practices and attitudes, the course will review and evaluate current research, issues and concerns about sexuality, in order to provide contemporary and relevant curriculum material. Topics include psychosexual development, gender roles, sexual orientation, sexual anatomy, alternate methods of reproduction, pregnancy/birth, contraception, sexually transmitted diseases, sex education, sexism, love and attraction, sexual abuse, sexual dysfunctions, sex therapy, paraphilias, and sexuality through the life cycle. Prerequisite(s): PSY 101.
Course Offered: Fall, Spring
Credits:

PSY 240 Health Psychology
Health Psychology is the study of psychological factors that affect health and illness. This course will apply a scientific and research perspective to the study of health promoting and health damaging behaviors. Using a biopsychosocial approach, behavioral patterns that result in cardiovascular disease, cancer, alcoholism, sexually transmitted diseases and other conditions will be explored. Course content will focus on stress and the immune system, stress management techniques, the health care system, risk taking, culture-bound syndromes, diversity issues, social support, and the role of the patient. Prerequisite(s): PSY 101.
Credits:

PSY 242 Educational Psychology
This course will present current scientific theory and research related to formal learning environments. Individual differences in cognitive, social, and emotional development, and the implications for the teaching/learning process will be explored. These general areas will be addressed through more specific topics including growth and development, learning theories, moral development, motivation, and classroom management. In addition, issues related to teaching in a diverse society will be addressed. Note: Students cannot get credit for PSY 242 and 242W; PSY 242W can be used to fulfill the writing intensive requirement. Prerequisite(s): PSY 101.
Credits:

PSY 245 Work Motivation
This course will examine work motivation, a central topic in the field of Industrial/Organizational Psychology. Students will be introduced to the major content and process theories of motivation including Maslow's Hierarchy of Needs, the Job Characteristics Model, Expectancy Theory, Equity Theory, and Goal Setting. The course will focus on the applications of these theories in the workplace, with an emphasis on job design, employee involvement, and reward systems. The interrelationships among motivation and key organizational outcomes such as satisfaction, engagement, organizational commitment, and performance will also be discussed.
Prerequisite(s): PSY 101
Course Offered: Fall
Credits:

PSY 251 Developmental Disabilities: History and Service Provision
In this course, students will learn about the needs and challenges faced by people with developmental disabilities. The course will cover developmental disorders including, but not limited to, cerebral palsy, autism, epilepsy, and intellectual disabilities. Students will explore the social, cognitive and behavioral limitations associated with each disorder. This course will focus on understanding the complex needs of people with developmental disorders and the value of providing them with functional, supportive, and individualized services. The course will also explore the history of service provision to people with developmental disorders, the changes that have occurred in those services over the last four decades, and current standards of care. The course will outline the ethical and legal issues involved in service provision. Heavy emphasis will be placed on viewing developmental disabilities through functional and behavioral perspectives. Prerequisite(s): PSY 101
Course Offered: Fall
Credits:

PSY 252 Adult Development
This course will deal primarily with the psychological correlates of development and transitions during adulthood. Specifically, the course will focus on such topics as what it means to be an adult, the meaning of marriage, the meaning of work, being a parent, divorce, the empty nest syndrome, mid-life crisis, retirement, and facing death. Biological and social factors will be taken into consideration, as will psychological theories and individual responses to stages and passages throughout adulthood. Prerequisite(s): PSY 101.
Course Offered: Fall, Spring
Credits:

PSY 253 Life Span Development
This course provides a comprehensive overview of normal human development throughout the life span. It will apply a scientific and research perspective to understanding both age-related change and consistency. The course will examine physical, cognitive, social and emotional development at every stage of life, with an emphasis on continuity and discontinuity of development as we progress from one stage of life to the next. Additionally, students will learn about those theories and research methods which are most pertinent to the study of lifespan development. Prerequisite(s): PSY 101.
Course Offered: Fall, Spring, Summer
Credits:

PSY 255 Topics in Psychology
This course will enable students to explore a specific subfield or topic of interest in Psychology, in a challenging atmosphere, with emphasis on student participation and written assignments. The subject for a particular semester will be announced prior to registration. Possible topics include but are not limited to: Consumer Behavior, Health Psychology, Psychology and the Law, Sport Psychology, and Parapsychology. Prerequisite(s): PSY 101.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PSY 257 Teaching of Psychology
This course is designed to expose students to current thinking about teaching and learning and the underlying content in the field of psychology. In addition, it aims to promote understanding of psychology as a profession as it relates to a career in academia. This is accomplished by offering students a unique opportunity to attend a professional conference on the Teaching of Psychology. During the conference students will have the unique opportunity to listen to, and participate in presentations on some of the newest ideas in the teaching of Psychology. In many cases the presentations they hear will be the first time the ideas have been presented in public. Students will be able to observe and interact on both a formal and informal level with a group of professional Psychologists. This course is designed especially for students who have expressed an interest in continuing in the field of Psychology and/or teaching. However, it can be a valuable experience for virtually all students, regardless of their career plans. Note: Students cannot get credit for PSY 257 and 257W; PSY 257W can be used to fulfill the writing intensive requirement. Prerequisite(s): PSY 101.
Credits:

PSY 265 Culture and Cognition
This course explores the methods, research, and theory in the field of culture, cognitions, and psychology in general. The main aim of the course is to introduce and familiarize students with the role of culture across a variety of psychological areas including perception, cognition, emotion, developmental processes, as well as social and abnormal behavior. The course is organized into three, inter-dependent modules. The first module concerns the exploration of culture as a determinant of one's socialization and development of personality. The second module provides an excursion into the role of culture in cognition; the way we think, perceive and organize our knowledge. The third module explores anthropological works on morality, religion, ritual, and emotion. Prerequisite(s): PSY 101
Course Offered: Summer
Credits:

PSY 280 Preparation for Graduate Training in Psychology
This course will provide those Applied Psychology majors who are considering graduate training in psychology with the opportunity to explore the various specialties in psychology (and related fields) as well as the graduate training required by each subfield. Students will explore their own interests while simultaneously researching and being provided with information regarding the many types of graduate training available. Self-assessment regarding standardized entrance examinations such as the GRE will be provided. Developmental plans will be generated based on self-assessment results. Applied Psychology majors who are considering graduate training are encouraged to take this one credit elective course during their sophomore year of the program. Course grading is Pass/Repeat. Prerequisite(s): PSY 101, Applied Psychology major
Course Offered: Winter
Credit:

PSY 300 Forensic Psychology
This course introduces the student to the study of forensic psychology, a discipline that applies psychology to the law and the criminal justice system. Topics to be covered include: the psychologist's role in the criminal courts, ethical dilemmas of psychologists working in the criminal justice system, psychological perspective on the nature of criminality and the investigation of crime, criminal profiling, the effects of psychological empirical research on the outcome of criminal trials, and the psychology of the police, witnesses, offenders, and victims. Other new research topics in the field, such as the use of brain fingerprinting technology to determine criminal culpability will also be explored. Students cannot receive credit for both CRJ 300 and PSY 300. Prerequisite(s): PSY 101 or CRJ 100
Course Offered: Fall, Spring
Credits:

PSY 301 Learning
This course examines the principles and theories of learning including the methodology and evaluation of research pertaining to learning processes. Topics will include a broad range of learning paradigms, from relatively simple processes such as classical conditioning and operant conditioning, to more cognitively complex processes such as concept formation and schema development. The research describing information acquisition, transfer, and forgetting will be reviewed. In addition, the influence of conditions such as motivational factors, will be examined. Prerequisite(s): PSY 101
Course Offered: Fall, Spring
Credits:

PSY 304 Multicultural Psychology
Reflecting the 21st century global theme of acculturation, PSY 304 will focus on the ways in which the study and practice of psychology intersect with race, culture, and diversity. Topics include racial/ethnic/religious group differences, cultural norms, gender and sexual orientation issues, family, structure, and identity development. Primary focus will be given to the ways that race and culture contribute to disparities in access to mental health treatment as well as differences in beliefs about mental illness and its treatment. Consistent with an applied psychology approach, the student will develop an understanding of how diversity issues affect the workplace, i.e., discrimination in hiring/firing practices, affirmative action laws, multicultural competence, and sensitivity training. Prerequisite(s): PSY 101.
Course Offered: Fall, Spring
Credits:

PSY 307 Psychology of Women
This course is about being female in American culture. The purpose of the course is to examine the lives of girls and women from a feminist psychological perspective. It addresses the biological, psychological, and socio-cultural factors influencing women's behavior, thoughts, and feelings. The course is "woman-affirming" as it will examine and validate women's experiences and perspectives. The course will highlight how race, class, and sexual orientation intersect with gender to affect women's lives. Topics will include: behavioral and psychological gender differences and their origins; concepts of femininity and gender stereotypes; pregnancy, childbirth and motherhood; women, achievement and work; violence against women; women and mental health (disparity in diagnosis and treatment); and feminist psychology. Prerequisite(s): PSY 101 or PSY 131
Course Offered: Fall, Spring
Credits:

PSY 309 Sport Psychology
Sport psychology examines psychological constructs that influence athletic participation and performance. Topics covered include personality, attribution and cognition for performance, motivation, goal setting, arousal and anxiety, the predictors of aggression through competition, stereotypes and prejudice, team cohesion, effective approaches to psychological skills training, leadership, coping with burnout and injury, and the prevalence of drug abuse and eating disorders in athletes. Prerequisite(s): Any 200-level or above Psychology course or Permission of the Department Chairperson.
Credits:

PSY 311 Organizational Behavior
This upper-division course presents the concepts of organizational behavior and structure as well as topics relating to motivation content and process theories; group communications and dynamics; decision making; causes and resolutions of organizational conflicts; and factors pertaining to influence, power and politics in organizations. Note: Students cannot get credit for PSY 311 and 311W; PSY 311W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Psychology Department. Prerequisite(s): BUS 109 or PSY 101.
Course Offered: Fall, Spring
Credits:

PSY 312 Psychology of Leadership
In this course we will examine leadership theories and approaches to leadership as well as personal and organizational leadership development. The essential knowledge, skills, and abilities of effective leaders are examined, such as managing conflict, facilitating communication, and leading groups and teams. Students will be encouraged to examine their own leadership potential as they complete self-assessments and participate in leadership exercises. This course provides students with a greater understanding of the theory, research, techniques, and current and future issues in the field of leadership through an experiential learning approach. Topics include the trait approach, the skills approach, ethics, transformational leadership, gender and leadership, the relationship between culture and leadership, and team leadership. Prerequisite(s): PSY 101 and Junior-level status.
Course Offered: Fall, Spring
Credits:

PSY 315 Abnormal Psychology
In this course the student will learn about concepts, theories, and issues in psychopathology (the study of mental illness and behavioral disorders). Topics may include historical background, mental health professionals, legal issues, normality/abnormality, etiology/assessment/diagnosis/therapy, anxiety/stress/depression, personality disorders, sexual deviance, schizophrenia, neurological dysfunction, substance abuse, and

psychophysiological disorders. The applications of psychology to personal problem solving will also be explored. Prerequisite(s): PSY 101
Course Offered: Fall, Winter, Spring, Summer
Credits:

PSY 316 Atypical Development
In this course students will explore developmental deviations that result in disorders of childhood focusing on neurodevelopmental disorders (intellectual disability, autism spectrum disorder, attention-deficit/ hyperactivity disorder, and specific learning disorder) and psychopathology (anxiety, mood, and conduct disorders). Developmental theories will be utilized to analyze disorders at the genetic, brain, behavioral, and cognitive levels. Emphasis will be placed on examining neurobiological and environmental factors contributing to disorders of childhood. The final portion of the course will focus on how atypical development may contribute to our understanding of typical development. Prerequisite(s): PSY 232
Course Offered: Fall, Spring
Credits:

PSY 317 Organizational Development
This course examines the behavioral science based theories, strategies and interventions that organizations use to execute planned, organization-wide changes to increase organization effectiveness and health. Theoretical models and processes will be reviewed and used to evaluate an organization's capacity to improve and change. The course is structured to cover the background, process, and content of organizational development. Real–world examples of organizational development will be presented to illustrate current and best practices used by modern organizations. Prerequisite(s): PSY 101
Credits:

PSY 320 Sensation and Perception
This course will survey the experimental psychology of sensory and perceptual process and behavior. Theories and processes relating the transformation of physical energies (such as light and sound) to psychological experiences (such as seeing object and hearing noises) will be discussed. While the research examined will primarily focus on the visual and auditory systems, the other sensory systems will be discussed as well. The emphasis will be on the contribution of behavioral science to understanding subjective experience of physical and social phenomena. Prerequisite(s): PSY 101.
Credits:

PSY 321 Child Cognitive Development
This course will examine how children's thinking develops from infancy through early childhood. Biological, social-cultural, and information processing perspectives will be reviewed in light of how cognition develops and changes over the early stages of life. This course will cover various domains of cognition including executive functioning, memory, language, intelligence, and social cognition. Finally, different populations will be considered to better understand the unique role of not only nature and nurture, but also how the two interact to influence development. Prerequisite(s): PSY 232 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

PSY 324 Psychological Measurement and Assessment
An analysis of the theory and practice of psychological measurement and assessment including the implications of psychological measurement in society and institutions such as schools, the workplace, clinical populations and other groups with special needs. Topics will include overview and history of the field, foundations of psychological testing and psychometrics, the assessment of ability, the assessment of personality, the assessment of interest and vocational choice, and ethical /social/cultural issues of psychological assessment. Prerequisite(s): PSY 101.
Course Offered: Fall, Spring
Credits:

PSY 325 Principles of Survey Research
This course covers the basic principles of survey research related to the design, evaluation, implementation, and analysis of surveys. Students will be introduced to the skills and resources needed to conduct quality survey research. The course is focused on the Tailored Design Method and emphasizes the customization of survey procedures for each survey situation. The course will cover the complete procedure of survey research including an introduction to different types of surveys, the development of survey instruments, an evaluation of reliability and validity, guidelines for implementation, sampling procedures, methods to increase response rate and reduce errors, and data entry, analysis, and reporting. Prerequisite(s): PSY 348
Course Offered: Winter
Credits:

PSY 326 Introduction to Behavioral Health Science
Behavioral Health Science is the scientific study of the ways that human behavior can affect health/mental health status and health/mental health outcomes. Introduction to Behavioral Health Science will explore how human actions, cognitions, relationships, interactions and systems affect health, well-being, and quality of life. This course will examine the integration of mental health care and health care from a historical, practical, and policy perspective. Students completing the course will understand the significance of health care policy changes as they relate to psychology, and the dramatic shift in thinking about how and where health/mental health care can be integrated and administered. Prerequisite(s): PSY 315
Credits:

PSY 328 Introduction to Human Factors
This course will provide an introduction to the field of human factors psychology. Human factors psychology is the application of the body of scientific facts about human characteristics to the design, operation and organization of human machine systems. Human-machine systems can range from simple consumer products to complex arrangements of hardware, software and personnel, such as aviation systems. Human factors knowledge, methods and techniques will be surveyed with an emphasis on ensuring that the systems, equipment, personnel tasks and work environment are compatible with the human sensory, perceptual, cognitive and physical attributes of the personnel who function within the human machine system. Prerequisite(s): PSY 101.
Credits:

PSY 330 Organizational Training and Development
An upper level offering, this course will provide a greater understanding of the theory, research, techniques, and current and future issues in the field of organizational training and development through an experimental learning approach. Topics shall include training systems, needs analysis, organization intervention, program evaluation, adult learning theory, cognitive issues, conditions for learning transfer, instructional techniques and current social and organizational issues in training. Prerequisite(s): PSY 101.
Course Offered: Fall, Spring
Credits:

PSY 331 Industrial / Organizational Psychology
Students will explore how the science and practice of psychology is applied in the world of work and organizations. Among the topics that will be examined are the history and research methodology of industrial/ organizational psychology, job analysis, employee selection, performance evaluation, training, work motivation, job satisfaction, leadership, group dynamics, and organizational development. The course will highlight emerging trends in the modern workforce and examine how these changes will impact research and practice in today's organizations. Students will examine the factors influencing cross-cultural diversity and globalization, the theoretical and practical implications of these workforce trends, and how current organizational theories and practices apply to cultures outside of the United States. Implications for the full range of topics discussed in the course will be examined including how cultural diversity and globalization affect employee selection procedures, group dynamics, preferences for leadership, training needs, work motivation, and organizational development. Prerequisite(s): PSY 101.
Course Offered: Fall, Winter, Spring, Summer
Credits:

PSY 340 Behavior Analysis Modification
An analysis of the general principles, theories and application of conditioning and learning in humans. The application of the theories of behavioral analysis to human problems will be explored. Behavioral interventions using the principles of classical conditioning, operant conditioning and modeling will be presented. Particular emphasis will be placed on behavioral analysis and intervention in settings such as mental health institutions, education, business organizations and families. Prerequisite(s): PSY 101.
Credits:

PSY 345 Human Factors: Systems Analysis and Design
This course will address the systems engineering approach to system design and the role of the human factors professional in that process. The human methods and techniques that are applied to the development of system requirements, allocation of functions to human and machine subsystems, the analysis of human task and work requirements, analysis of staffing requirements, the design control centers to support the human tasks, and methods of system evaluation, verification, and validation will be examined. This course will require students to apply the concepts and methods discussed to an actual design project as part of a design team. Prerequisite(s): PSY 101.
Credits:

PSY 348 Statistics for Psychology
This course will examine the basic descriptive and inferential statistics used in the behavioral and social sciences. Topics will include the organization of data, measures of central tendency and variability, correlation and regression, hypothesis testing, and various parametric and nonparametric tests of significance including t-tests, ANOVA, and chi-square analysis. In the computer lab component, students will focus on the interconnections between theory, statistical techniques, and research methods in order to identify the appropriate statistical tests to analyze data and reach objective conclusions regarding research questions in the social sciences. Computer lab sessions will also provide practice in using statistical software for data summarization, presentation, and analysis. Prerequisite(s): PSY 101, MTH 110 and Junior level status
Course Offered: Fall, Spring
Credits:

PSY 350 History of Psychology: Study Abroad in Europe
This course will provide a unique academic and cultural excursion into the work of some of the pioneering philosophers and psychologists who shaped the development of psychology. The on-campus classroom portion of the class will cover a variety of topics including but not limited to: tracing the evolution of psychology as a science; exploring the role of European philosophers, physiologists and psychologists in shaping psychology. The study-abroad portion will expose students to the historical and cultural context of those pioneers that helped to form their philosophies and theories. Some of the pioneers whose psychological legacy will be discussed in great detail are particularly of British, German, Swiss, or Austrian origin. Prerequisite(s): PSY 101 and permission from the Department Chair
Course Offered: Summer
Credits:

PSY 355 Advanced Topics in Psychology
We have, until now, offered special topics courses only at the 200-level, a remnant of the time when Farmingdale was largely an associate's degree granting institution. Now that we need to ensure that students have sufficient 300-level courses to complete their degrees, we would like to be able to offer more challenging, more in-depth, special topics courses designed for upper-division students, that will count towards meeting their degree requirements. We will retain a 200-level special topics course (PSY 255) in order to offer unique classes at the lower-division level. Prerequisite(s): Any 200- or 300- level psychology course with a grade of C or higher
Course Offered: Fall, Winter, Spring, Summer
Credits:

PSY 360 Research Methods
This course will present the scientific method within the context of applied psychology. Research techniques and methods will be examined for the formulation of hypotheses, development of testable objectives, experimental design, subject selection, data collection, data analysis and interpretation, and report preparation. This course will focus on laboratory based methods and simple statistical procedures for the analysis of data. Students will apply the concepts and methods in laboratory exercises. Prerequisite(s): PSY 348
Course Offered: Fall, Spring
Credits:

PSY 364 Introduction to Biopsychology
This course is designed to introduce students to the biological underpinnings of behavior. The first part of the course will focus on building a foundation in neuroscience and will cover chapters on neuroanatomy (organization of the nervous system, major brain structures and their functions), neural signal transmission (how neurons communicate with each other) and sensory and motor systems (how the nervous system processes information and interacts with the environment). The second half of the course will be dedicated to understanding the relationship between complex human behaviors and brain function, and will cover topics such as the neurobiological underpinnings of learning and memory, emotion, stress, drug addiction and psychological disorders. Students who have received credit for PSY264 cannot receive credit for this course. Prerequisite(s): Any 200-level PSY course or PSY 101 and (BIO 170 or BIO 166)Credits: 3
Course Offered: Fall, Spring
Credits:

PSY 365 The Aging Brain
In this course, students will be introduced to age-related changes that occur in the human brain. The course will be divided into three units: the first will provide an overview of the cognitive changes that occur during normal aging and the biological mechanisms that underlie the aging process. The second will focus on abnormal changes in an aging brain, including an examination of age-related neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease. The final portion will center on the influence of lifestyle factors, such as exercise, nutrition and cognitive stimulation, on the aging process. Prerequisite(s): PSY364 OR BIO365 with a grade of C or higher
Credits:

PSY 372 Cognitive Psychology
This course covers the psychological study of human information processing in terms of structure, process, and application. The representation of knowledge in memory is addressed as is the cognitive processes used for information acquisition, information retrieval, and forgetting. The cognitive processes of attention, pattern recognition, language, comprehension, and thinking will be reviewed in terms of their application to cognitive activities such as decision-making, reasoning, problem solving, and creativity. The application of cognitive theory to artificial intelligence is also discussed. Prerequisite(s): PSY 101 and any 200-level PSY course.
Course Offered: Fall, Spring, Summer
Credits:

PSY 405 Ergonomics and Biomechanics
This course will examine the scientific knowledge related to human ergonomics, anthropometry, and biomechanics. The measurement of human work, physiological characteristics and movement will be presented. The application of such knowledge to the design of devices, systems, and environments for use by people will be discussed. The contribution of ergonomics and biomechanics to the improvement of safety, productivity, and quality of work will be presented. Prerequisite(s): PSY 328.
Credits:

PSY 410 Individual and Group Counseling
This course will explore what counseling is, who is a counselor, and what is known about changing behavior in both individual and group settings. Historical concepts of counseling will be examined as well as the scientific foundations of counseling. Research findings related to counseling techniques will be presented and analyzed. The course will focus on a variety of counseling approaches, the therapeutic relationship, legal and ethical issues, and the realities of therapeutic practice. Cultural influences on behavior will be emphasized as a way of understanding and helping clients from diverse backgrounds. Prerequisite(s): PSY 315.
Course Offered: Fall
Credits:

PSY 414 Applied Personnel Psychology
This upper level offering is designed to provide students with the tools for understanding the underlying theory, research and techniques of personnel psychology. It will provide the background for understanding the practical application of the concepts and techniques studied. This will be accomplished through a combination of lectures, group projects involving application of the principles of personnel psychology, group presentations of the projects and classroom exercise. Prerequisite(s): PSY 331.
Course Offered: Fall, Spring
Credits:

PSY 420 Advance Topics in the Study of the Human Mind and Cognition
This course will provide an excursion into the most current approaches and perspectives in the field of cognitive science, neuroscience, and cultural studies. The class will cover a variety of topics such as: embodied cognition, sensory deprivation and its effects on cognition, multisensory integration,

evolution of cognition and culture, and the role of cognition in rituals and religions, morality, and other topics. Prerequisite(s): PSY 372
Course Offered: Fall, Spring
Credits:

PSY 430 Introduction to School Counseling
In this course students will be introduced to the role of the school counselor and the relationship of school counseling to the educational mission of school. The following school counseling topics are addressed in this course: perspectives and practices for school counseling in the 21st century, multicultural and diversity issues impacting school counseling, and an overview of counseling theory as applied to the child and adolescent in a school setting. Candidates will explore the school counselor's work in the context of leadership, advocacy, collaboration, consultation, coordination of services, multiculturalism and working with diverse student populations, technology and the use of data to inform decisions. Prerequisite(s): PSY 315 with a grade of B- or higher.
Course Offered: Fall, Spring
Credits:

PSY 440 Human Factors Psychology/Internship/Senior Project I
This course will provide seniors in the Human Factors Concentration with the opportunity to apply human factors knowledge and methods in an actual work environment. A variety of options will be available for completion of this course: internship, research assistantship, or independent project. In an internship, the student will work in a local business, laboratory, or service organization. As a research assistant, the student will work with a faculty member as an assistant in their ongoing research or consulting. Alternatively, students may develop an independent project under the supervision of a faculty member. The selection of which option is best will be made by the student and their advisor based on which best meets the student's educational and career goals. Regardless of the option selected, each student will attend seminars and complete a research or design project. Prerequisite(s): Senior Status in Human Factors Psychology Concentration.
Credits:

PSY 441 Human Factors Psychology Internship/Senior Project II
This second Internship/Senior Project course will provide seniors in the Human Factors Concentration with the opportunity to apply human factors knowledge and methods in an actual work environment. A variety of options will be available for completion of this course: internship, research assistantship, or independent project. In an internship, the student will work in a local business, laboratory, or service organization. As a research assistant, the student will work with a faculty member as an assistant in their ongoing research of consulting. Alternatively, students may develop an independent project under the supervision of a faculty member. The selection of which option is best will be made by the student and their advisor based on which best meets the student's educational and career goals. Regardless of the option selected, each student will attend seminars and complete a research or design project. Prerequisite(s): PSY 440.
Credits:

PSY 442 Applied Psychology Senior Project: Professional Development
This course will provide seniors in the Applied Psychology Program with the opportunity to apply psychology knowledge and methods in an actual work environment. A variety of options will be available for completion of this course: internship, research assistantship or independent project. In an internship, the student will work in a local organization. As a research assistant, the student will work with a faculty member as an assistant in the faculty member's ongoing research and/or consultation with organizations. Alternatively, the student may develop an independent project under the supervision of a faculty member. The selection of which option is best will be made by the student and their advisor based on which option best meets the student's educational and career goals. Regardless of the option selected, each student will attend seminars and complete a research or application project. Prerequisite(s): Senior Status in Applied Psychology Bachelor's Program or Permission of Department Chairperson
Course Offered: Fall, Spring
Credits:

PSY 443 Applied Psychology Senior Project II:Career Planning
This second Internship-Senior Project course will provide seniors in the Applied Psychology Program with the opportunity to apply psychology knowledge and methods in an actual work environment. A variety of options will be available for completion of this course: internship, research assistantship or independent project. In an internship, the student will work in a local organization. As a research assistant, the student will work with a faculty member as an assistant in the faculty members' ongoing research and/or consultation with organizations. Alternatively, the student may develop an independent project under the supervision of a faculty member. The selection of which option is best will be made by the student and their advisor based on which option best meets the student's educational and career goals. Regardless of the option selected, each student will attend seminars and complete a research or application project. Prerequisite(s): Permission of department Chairperson
Course Offered: Fall, Spring
Credits:

RESEARCH ALIGNED MENTORSHIP (RAM)

RAM 101 First Year Seminar
This course provides students with foundational psychosocial theories as well as skills in reading, composition, critical thinking, interpersonal communication, and public speaking that they will apply to their academic success and beyond. Students are required to think reflexively about themselves, each other, their academics, and goals through personal journaling, group work, active listening, class discussions, and oral presentations. This course is reserved exclusively for scholars in the Research Aligned Mentorship (RAM) Program. They will learn to turn to their RAM peers and RAM faculty and staff for support. Note: Students taking this course may not receive credit for FRX 101 or FYS 101.
Course Offered: Fall
Credit:

RAM 102 Collaborative Learning Workshop
Collaborative Learning Workshops are an integral part of the Research Aligned Mentorship (RAM) program. In the Workshops, students master material in challenging foundational courses such as Mathematics. Faculty facilitators provide worksheets that students – organized in small collaborative working groups – use to solve problems while deepening their understanding of course material, acquiring strong study skills, and developing support groups. Enrollment is restricted to entering first year students who have been selected to participate in the Research Aligned Mentorship (RAM) program and who are enrolled in a foundational course to which a collaborative learning workshop is attached.
Course Offered: Fall
Credit:

RAM 201 Sophomore Year Introduction to Research
RAM 201 is a course reserved exclusively for students in the Research Aligned Mentorship Program (RAM) that will introduce sophomores to research and graduate study in preparation for a faculty-mentored research experience. Throughout the course, students will be responsible for written reflections on scholarly journal articles. The course will culminate in a semester-long project that engages the student in writing a research proposal that requires students to read and summarize scholarly articles accessed through the college's electronic library databases. The research proposal will be evaluated as a poster presentation which is delivered orally in class at the end of the semester. Prerequisite(s): RAM 101
Course Offered: Fall, Summer
Credit:

RAM 301 Transfer Year Introduction to Research
RAM 301 is a course reserved exclusively for students in the Research Aligned Mentorship Program (RAM) that will introduce transfer students to research and graduate study in preparation for a faculty-mentored research experience. Throughout the course, students will be responsible for written reflections on scholarly journal articles. The course will culminate in a semester-long project that engages the student in writing a research proposal that requires students to read and summarize scholarly articles accessed through the college's electronic library databases. The research proposal will be evaluated as a poster presentation which is delivered orally in class at the end of the semester. Prerequisite: Transfer Student Junior Level Status.
Course Offered: Fall
Credit:

RAM 303 Research Experience
This hands-on research experience with a faculty mentor is the culminating experience for students enrolled in the Research Aligned Mentorship (RAM) program. Students will be placed in research experiences on the Farmingdale Campus or off-campus in major universities, research

laboratories, businesses, industry, government, horticultural gardens, and other settings that fit their academic interests and career goals.
Course Offered: Fall, Spring, Summer
Credits:

RAM 306 Research Experience
This hands-on research experience with a faculty mentor is the culminating experience for students enrolled in the Research Aligned Mentorship (RAM) program. Students will be placed in research experiences on the Farmingdale Campus or off-campus in major universities, research laboratories, businesses, industry, government, horticultural gardens, and other settings that fit their academic interests and career goals.
Prerequisite(s): RAM 201 or 301
Course Offered: Fall, Spring, Summer
Credits:

RAM 309 Research Experience
This hands-on research experience with a faculty mentor is the culminating experience for students enrolled in the Research Aligned Mentorship (RAM) program. Students will be placed in research experiences on the Farmingdale Campus or off-campus in major universities, research laboratories, businesses, industry, government, horticultural gardens, and other settings that fit their academic interests and career goals.
Prerequisite(s): RAM 201 or 301
Course Offered: Fall, Spring, Summer
Credits:

RAM 312 Research Experience
This hands-on research experience with a faculty mentor is the culminating experience for students enrolled in the Research Aligned Mentorship (RAM) program. Students will be placed in research experiences on the Farmingdale Campus or off-campus in major universities, research laboratories, businesses, industry, government, horticultural gardens, and other settings that fit their academic interests and career goals.
Prerequisite(s): RAM 201 or 301
Course Offered: Fall, Spring, Summer
Credits:

SOFTWARE TECHNOLOGY (SET)

SET 101 Fundamentals of Software Technology
This course provides students with an understanding of modern software technology such as Operating Systems (OS), Virtual Memory Systems, and Android OS. A distinction is made between modern and legacy operating systems, such as Unix and Windows, in terms of security, network compatibility and usability in the design and development of modern application software. The course addresses issues with utility programs, desktop and mobile applications development, and information systems development essential for the modern corporate world. Elements of multimedia technology, databases basics and database management systems development, apart from computer networks and security are presented.
Course Offered: Fall
Credits:

SET 105 Introduction to Symbolic and Logic Programming
This course introduces students to the basics of programming logic and its real-life applications from a software technology perspective. The design and development of symbolic and logic programming for various computer science structures is a major focus for the course. The languages that support symbolic structures such as LISP and Prolog are covered in the context of the syntax and semantics of these scientific programming languages.
Course Offered: Spring
Credits:

SET 205 Introduction to Artificial Intelligence and Robotics Technology
This course introduces students to the basics and applications of artificial intelligence and robotics. The course covers knowledge representation, autonomous systems, common sense techniques as well as their practical implementation in autonomous driving systems and speech recognition. To enforce the foundational understanding of the subject matter, multi agents with their navigational approaches and topological path planning strategies are presented. Prerequisite(s): SET 101
Course Offered: Fall
Credits:

SET 220 Internetworking
The course will provide an in-depth understanding of internet and its applications. Lab projects will provide hands-on experience in network configuration, installation and utilization. The topical outline includes the following: internet mechanism, communication on the internet, application of internet, use of search engines, online communication, internet security, hardware for network communication, and control computer networks.
Prerequisite(s): EET 104
Course Offered: Fall
Credits:

SET 230 Wireless Technology and Applications
The course will focus on developing the skills needed to design, build and utilize wireless networks. The topics will include function of a wireless system, basic technologies for wireless, wireless applications, wireless internet, hardware and standards for wireless networks, and building and maintaining a wireless system. Prerequisite(s): EET 104
Course Offered: Fall, Winter, Summer
Credits:

SET 310 Software Application for ERP Solutions
As the first of a sequence of courses, this course will provide an in-depth study of software applications in a variety of industries. Overview of engineering and business processes, concepts in enterprise resource planning and integration, and software applications for such functions as manufacturing, product life cycle management, and supply chain management will form the key topics. The focus of the course is the application, configuration of industry standard software and how to customize it for a variety of applications. Prerequisite(s): BCS 260
Course Offered: Fall, Summer
Credits:

SET 320 Software Application/Supply Chain Management
The objective of the course will be to develop skills and competencies to plan and implement supply chain management concepts. The primary focus will be to define, configure and apply supply chain management software. Topical areas covered will include vendor- customer roles, enterprise systems, production planning and control, capacity planning, materials requirements planning, purchasing, inventory control, shop floor control, sales and distribution, and warehouse operations and management. Industry standard software such as SAP will be used for configuration, customization and application for Supply Chain Management.
Prerequisite(s): SET 310
Course Offered: Fall, Spring, Summer
Credits:

SET 400 Network Planning and Implementation
This course will focus on developing skills needed to plan and implement networking systems. As a higher level course, it will prepare the students to design, build and implement a network system. The course assumes that the student will have basic understanding of network requirements, network architecture, security of network systems, selection on network technologies, engineering cost estimation, and project implementation. Laboratory projects will focus on real world experience in networking planning and implementation. Prerequisite(s): EET 440 or BCS 208
Course Offered: Fall, Summer
Credits:

SET 402 Software Applications in Statistical Analysis and Manufacturing Management
The objective of this course is to develop competencies in the application of software for gathering and analysis of information, and preparation of scientific, technological and management reports in such functions as engineering manufacturing, banking, pharmaceutical and regulatory controls. Standard application software such as SAS will be used for analysis and reporting. Prerequisite(s): MTH 110 and SET 310
Course Offered: Fall, Summer
Credits:

SET 405 Software Applications in Manufacturing and Service
The objective of the course will be to develop skills and competencies to apply software for such service functions as quality management and finance, and human resources management in an enterprise. The primary focus will be to define, configure and apply software for service functions in manufacturing and service industries. Industry standard software such as SAP will be used for application customization and configuration.
Prerequisite(s): SET 310

Course Offered: Fall, Summer
Credits:

SET 410 Senior Project
This is a capstone course which will require the student to utilize the skills and competencies gained in the program to develop and implement real world projects. With the guidance from the instructor, students may address specific problems in a company or industry and develop solutions involving software applications. Using the skills and competencies gained in software applications, the student will be able to determine research methodologies, selection of a project setting limitations for a project, defining the problem, conducting an industry study, establishing process flow for the configures system, going alive with the new system, turning over the control of the system, and providing maintenance and service support. Note: Students cannot get credit for SET 410 and 410W; SET 410W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Automotive & Mechanical Engineering Technology Department Prerequisite(s): Senior Status and Departmental Approval.
Course Offered: Fall, Summer
Credits:

SPORT MANAGEMENT (SMT)

SMT 110 Introduction to Sport Management
An investigation into the scope of the sport industry; a growing major business enterprise in the United States and in much of the world. Functions of management, skills and attributes required of a sport manager, and roles of a manager are examined and researched. Attention focuses on how the managerial process relates to sport organizations and their products. Students become acquainted with career opportunities in the sport management field. Note: Students must achieve a C or higher in this class to continue on in any course to which it is a prerequisite.
Course Offered: Fall, Winter, Spring, Summer
Credits:

SMT 215 Sport Information Management
The effective management of information is essential to successful business and athlete development in sport related fields. Sport information directors use software to track stats at every level, including high school, college and professional, and then transmit these stats to national organizations. Computer-aided facility, management, financial, operational and accounting systems for the running of sport franchises and fitness clubs, salary capology, and handicap computational systems are just a few of the other applications for information management that will be addressed in this class. Prerequisite(s): BCS 102
Course Offered: Fall, Spring
Credits:

SMT 220 Media and Sport
The course will begin by tracing the history of sport media in the United States beginning with the reporting of early American sports via newspapers, through the radio and television ages, the role cable television played in expanding sports viewership, ending with an analysis of regional sports networks, social media and the on-line streaming of sports. The course will examine the role the Sports Broadcasting Act of 1961 has played in shaping modern media rights contracts including its influence on rights fees and coverage. Additional topics include managing talent and production staff, examining commercial pressures on both athletes and sport properties, and the global sport media expansion so the students can examine current problems while analyzing possible solutions. Prerequisite(s): SMT 110 with a grade of 'C' or higher
Course Offered: Fall, Spring
Credits:

SMT 225 Sport Marketing
An investigation into the decisions necessary to plan, develop, implement and control integrated sports marketing programs. Attention will be directed towards each major element of the marketing industry--advertising, promotion, public relations and sponsorships. The emphasis will be on the marketing of professional and collegiate athletes. Included will be the use of marketing for teams, leagues and special events. The course will also focus on negotiations, contracts and the role of the media. Prerequisite(s): SMT 110 with a grade of 'C' or higher
Course Offered: Fall, Spring, Summer
Credits:

SMT 230 Social Media in Sport
This course will explain how social media applications are dramatically changing the sports world, sport business, spectating and therefore the marketing of sports. These changes have appeared in a very short period of time, creating a host of implications for sports media processes and sports organizations as they grapple with athletes' use of these media channels. In addition, the course explores the concepts, tools, and issues surrounding social media and marketing. Current trends in social media will be explored and the course will provide students with a balance between theory and experience. Students will learn about traditional sport marketing/public relations principles as they relate to social media. Prerequisite(s): SMT 110 with a C or higher.
Course Offered: Fall, Spring
Credits:

SMT 240 Sponsorship, Media and Box Office Administration
This course builds upon SMT 225 Sports Marketing through a more in-depth focus on the revenue-generation components of the sport industry. Students will learn about non-sales selling, the ticket sales process, customer service and customer relationship management, the impact of analytics on ticket pricing, the secondary ticket market, the impact of technology on ticket operations, sponsorship sales, and career opportunities in sales. Students will gain real world experience in ticket sales, promotion and sponsorship sales. Students will engage in a sales training program, and will be challenged to sell tickets and sponsorships. Prerequisite(s): SMT 110 with a grade of 'C' or higher and BUS 131 or SMT 225
Course Offered: Spring
Credits:

SMT 304 Sport Finance
This course grounds students in the real world of financial management in sport, showing them how to apply financial concepts and appreciate the importance of finance in sport management and operations. Through classroom presentations, discussions and course assignments, the student will be provided with a solid foundation in financial management, managerial economics, and statistics as they relate to the sport industry. The course content will focus primarily on the spectator sport segment of the sport industry (professional sports, collegiate athletics, Olympic sports, sport facilities, events, and sport agencies). Some of the topics that will be covered are capital, budgeting, asset allocation, market structures, financing of venues including subsidies, salary caps and the effect of collective bargaining agreements on sport organizations. Prerequisite(s): SMT 110 with a grade of 'C' or higher and BUS 102
Course Offered: Fall, Spring, Summer
Credits:

SMT 311 Sport Law
A study of legal issues affecting all aspects of sports, including college, professional and recreational activities. Future professionals within the realm of physical activity and sport need to be aware of the law the many implications it brings to their chosen fields. This class is designed to provide an introduction to various aspects of the law and its influence on sport and physical activity. Prerequisite(s): BUS 202
Course Offered: Fall, Spring, Summer
Credits:

SMT 320 Athletic Administration
This course focuses on the organization, administration, and management of physical education and sport. Attention will be directed towards intercollegiate and interscholastic athletics, professional sports organizations and various recreational programs. Emphasis will be placed on organization and leadership theories and program development. The management and supervision as well as the budgeting and purchasing process in the management of athletic facilities will be discussed. Issues of law, risk management and ethics as they pertain to athletics will be explored. Prerequisite(s): BUS 109
Course Offered: Fall, Spring
Credits:

SMT 323 Contracts, Negotiations and Collective Bargaining Agreements in Sport
This course will focus on sports contracts, negotiations of such contracts between teams and players and their agents, negotiation of contracts known as collective bargaining agreements between major sports leagues and player associations, and an overview of certain collective bargaining agreements, including salary caps. At the completion of the course, the student should have a greater understanding of how contracts and the

collective bargaining agreements drive the business of sports and the problems faced by management of sports franchises. Prerequisite(s): SMT 110 with a grade of 'C' or higher and BUS 202
Course Offered: Fall, Spring
Credits:

SMT 326 Sport Writing
In this course students will learn skills in the identification of legitimate angles for sport stories, how to report sport events, develop sport feature stories, and write sport opinion pieces, both for print publication and the web. Students will submit written articles, be required to write on deadline, and develop skills in interviewing. Students will deconstruct published stories and acquire an understanding of the process of assembling a well researched and expertly-crafted sport story. Note: Students completing this course may not receive credit for PCM 326. Prerequisite(s): EGL 102
Course Offered: Spring
Credits:

SMT 335 Special Topics in Sport
The course will be offered occasionally and can be taken more than once as titles change. The course will provide a special topic for students as a Sport Management elective course. It will pertain to a general sport topic or a current event that is occurring in the sport industry. Prerequisite(s): SMT 110
Course Offered: Fall, Spring
Credits:

SMT 340 Sport Facility Management
This course focuses on athletic facilities and the complex management involved. Topics include the development, operation, and financing as well as the management and supervision of athletic facilities. Attention will be directed towards public and private arenas, colleges and universities, and health clubs and stadiums. Other topic of special interest and current research will be discussed. Prerequisite(s): BUS 109
Course Offered: Fall, Spring
Credits:

SMT 350 International Sport Management
This course will prepare students for Sport Business and Management on an international scale, including a review of recurring international events like the World Cup and the Olympic Games. In this course we will identify and study the numerous global forces that have given rise to a greater diversity in sport coverage, events and participants. Ultimately we will identify and explore the characteristics that are unique to the international platform of today's audiences, athletes and events. Prerequisite(s): SMT 110 with a grade of 'C' of higher and BUS 109
Course Offered: Spring
Credits:

SMT 360 Event Management
This course focuses on Event Management and Event Planning, which is an area of expertise and skill that is highly desirable in the sports and entertainment industry. This course provides the necessary building blocks and fundamentals of event management and event planning. Areas of study include event conceptualization, event staffing, event budgeting, event promotion, event security and overall event planning and management. Upon completion of this course, the student will understand the complexities and interaction required for managing, organizing and operating sport events through theory and application. Prerequisite(s): SMT 110 with a grade of 'C' or higher and BUS 109
Course Offered: Fall
Credits:

SMT 370 Research in Sport Management
This course is an undergraduate class on various aspects of research within the context of sport. The course provides a general overview of social research, covering four broad topics: research design, review of literature, data collection, and data analysis. Upon course completion, students will demonstrate the ability to develop a research proposal for a sport-based study. Prerequisite(s): SMT 110 and EGL 310 both with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

SMT 409 Strategic Sport Management
Strategic sport management is a means of applying a variety of business strategies to the context of sports development. Geared for upperclassmen, this course focuses on this growing field by developing and assessing the knowledge and skills associated with senior level managers working in private or public sector sports-related institutions. Students will be expected to leverage the knowledge and skills through individual and/or group projects in anticipation of similar responsibilities in their careers. Prerequisite(s): Senior status and SMT 304
Course Offered: Fall, Spring
Credits:

SMT 420 Current Topics in Sport
This course analyzes contemporary issues including topics such as athlete use of performance enhancing drugs, public/private funding of facilities and arenas, gambling (legal/illegal), escalating player/coaches' salaries, violence in sport, legal issues including Constitutional, collective bargaining, antitrust and employment law, NCAA and amateurism, the impact of Title IX, concussion and other sport health issues, media rights and technology, and institutional cheating in sport. Case studies are investigated and students engage in critical thinking and discussions to understand what has created these issues and their implication. Extensive research of current texts and journal articles is required. Prerequisite(s): SMT 320
Course Offered: Spring
Credits:

SMT 440 Sport Management Internship
Supervised work experience in corporate settings, amateur and professional sport agencies, colleges and universities, and community sport organizations. Students assume leadership roles in various job-related activities and perform administrative tasks in support of activities under an experienced agency supervisor and faculty sponsor. No more than 15 credits may be earned from SMT 440 to SMT 443 and SMT 445 to SMT 448. Prerequisite(s): Junior or Senior level status, Department approval, with a minimum GPA of 3.0 and SMT 110 with a grade of C or higher.
Course Offered: Fall, Spring, Summer
Credits:

SMT 441 Sport Management Internship
Supervised work experience in corporate settings, amateur and professional sport agencies, community sport organizations. Students assume leadership roles in various job-related activities and perform administrative tasks in support of activities under an experienced agency supervisor and faculty sponsor. Note: No more than 15 credits may be earned from SMT 440 to SMT 443 and SMT 445 to SMT 448. Prerequisite(s): Junior or Senior higher status with Department approval and a minimum G.P.A. of 3.0 or higher and SMT 110 with a grade of C or higher.
Course Offered: Summer
Credits:

SMT 442 Sport Management Internship
Supervised work experience in corporate settings, amateur and professional sport agencies, community sport organizations. Students assume leadership roles in various job-related activities and perform administrative tasks in support of activities under an experienced agency supervisor and faculty sponsor. Note: No more than 15 credits may be earned from SMT 440 to SMT 443 and SMT 445 to SMT 448. Prerequisite(s): Junior or Senior status with Department approval and a minimum G.P.A. of 3.0 or higher and SMT 110 with a grade of C or higher.
Credits:

SMT 443 Sport Management Internship
Supervised work experience in corporate settings, amateur and professional sport agencies, community sport organizations. Students assume leadership roles in various job-related activities and perform administrative tasks in support of activities under an experienced agency supervisor and faculty sponsor. Note: No more than 15 credits may be earned from SMT 440 to SMT 443 and SMT 445 to SMT 448. Prerequisite(s): Junior or Senior status with Department approval and a minimum G.P.A. of 3.0 or higher and SMT 110 with a grade of C or higher.
Course Offered: Summer
Credits:

SMT 445 Sport Management Internship II
Supervised work experience in corporate settings, amateur and professional sport agencies, colleges and universities, and community sport organizations. Students assume leadership roles in various job-related activities and perform administrative tasks in support of activities under an experienced agency supervisor and faculty sponsor. Note: No more than 15 credits may be earned from SMT 440 to SMT 443 and SMT 445 to SMT 448.

Prerequisite(s) required and Junior status or higher, Department approval, with a minimum G.P.A. of 3.0 or higher and SMT 110 with a grade of C or higher.
Course Offered: Fall, Spring, Summer
Credits:

SMT 446 Sport Management Internship II
Supervised work experience in corporate settings, amateur and professional sport agencies, colleges and universities, and community sport organizations. Students assume leadership roles in various job-related activities and perform administrative tasks in support of activities under an experienced agency supervisor and faculty sponsor. Note: No more than 15 credits may be earned from SMT 440 to SMT 443 and SMT 445 to SMT 448. Prerequisite(s) required and Junior status, Department approval, with a minimum G.P.A. of 3.0 or higher and SMT 110 with a grade of C or higher.
Credits:

SMT 447 Sport Management Internship II
Supervised work experience in corporate settings, amateur and professional sport agencies, colleges and universities, and community sport organizations. Students assume leadership roles in various job-related activities and perform administrative tasks in support of activities under an experienced agency supervisor and faculty sponsor Note: No more than 15 credits may be earned from SMT 440 to SMT 443 and SMT 445 to SMT 448. Prerequisite(s) required and Junior status, Department approval, with a minimum G.P.A. of 3.0 or higher and SMT 110 with a grade of C or higher.
Credits:

SMT 448 Sport Management Internship II
Supervised work experience in corporate settings, amateur and professional sport agencies, colleges and universities, and community sport organizations. Students assume leadership roles in various job-related activities and perform administrative tasks in support of activities under an experienced agency supervisor and faculty sponsor. Note: No more than 15 credits may be earned from SMT 440 to SMT 443 and SMT 445 to SMT 448. Prerequisite(s) required and Junior level status, Department approval, with a minimum G.P.A. of 3.0 and SMT 110.
Credits:

SMT 485W Senior Seminar in Sport (Writing Intensive)
In this capstone course, students may use software and case studies that will simulate the management of a professional franchise and other sports organizations, from an operational, marketing and financial standpoint. Decisions will be made, and results analyzed, to determine if the sport business will succeed. Students will be required to prepare operational, marketing and financial plans in addition to an annual budget, and then analyze the results. This is a writing intensive course. Note: SMT 485W can be used to fulfill the writing intensive requirement. Offered at the discretion of the Sport Management Department Prerequisite(s): Senior level status and SMT 409 and EGL 101 with a grade of C or higher
Course Offered: Fall, Spring
Credits:

SOCIOLOGY (SOC)

SOC 122 Introduction to Sociology
This is an introductory course designed to familiarize students with the field of sociology. In addition to learning about the central concepts and major theoretical sociological perspectives, students study human behavior in groups, the organization of social life, the impact of social institutions on individuals, and the process of sociological research. Great emphasis is also placed upon development of students' "sociological imagination" – specifically, the ability to understand the ways that our individual lives are shaped by larger social forces and institutions. Note: Students who take SOC 122 may not receive credit for SOC 122W.
Course Offered: Fall, Winter, Spring, Summer
Credits:

SOC 200 Introduction to Women's Studies
An interdisciplinary approach that will draw on literature, history, sociology, as well as science and technology, the course will introduce students to issues in gender that cross traditional disciplines. Cultural assumptions about gender will be examined, and students will be encouraged to consider new ways of looking at knowledge in light of new understanding about the ways in which gender constructs beliefs and influences life's realities. Prerequisite(s): Introductory social science course and EGL 102.
Course Offered: Fall, Spring
Credits:

SOC 201 Sociology of Education
The course analyzes the American educational system. We examine the ways that schools (including institutions of higher education) serve as agents of socialization, foster social mobility, and transmit knowledge and culture. We also study the school as a bureaucratic organization. Students are encouraged to think critically about their own educational experiences.
Prerequisite(s): SOC 122
Credits:

SOC 220 Sociology of Aging
The course examines the social phenomenon of aging. We look at different theories of aging and discuss the ways that different cultures approach the process of aging. Similarly, we consider class as well as racial/ethnic differences in the social meanings and consequences of aging. Lastly, we devote considerable time to looking at various political, economic, and social issues associated with aging and the elderly.
Credits:

SOC 223 Social Issues and Institutions
Focusing primarily on the United States, we discuss complex social issues such as crime, alcoholism, drug use, environmental issues, and poverty. In doing so, we examine major social institutions such as the family, the workplace, the mass media, the criminal legal system, and the healthcare system.
Course Offered: Fall, Winter, Spring, Summer
Credits:

SOC 224 Urban Sociology
This course examines the development, processes and problems of urban life, emphasizing urban social processes in contemporary American cities. Although emphasis will be given to contemporary America, historical and cross-cultural comparisons will also be presented. Major sociological theories used to study and explain the metropolis will be presented. Along with relevant research findings; the importance of field work in the urban sociological research is emphasized. Prerequisite(s): SOC 122
Course Offered: Fall, Winter, Spring, Summer
Credits:

SOC 225 Sociology of the Family
This course examines the family in the United States as a core social institution. We consider theoretical, historical, and cross-cultural aspects of such topics as mate selection, marital dynamics, the changing roles of men and women, parenting and child-rearing, divorce, aging, conflict and violence, alternative lifestyles and family policy. Prerequisite(s): SOC 122
Course Offered: Fall, Winter, Spring, Summer
Credits:

SOC 228 Society and Health
This course examines the meanings and experiences of health and illness and the ways in which social factors like age, gender, class and ethnicity affect health. We explore the historical development of health professions, including alternative health professions. Significant time is also devoted to understanding the workings of the contemporary American healthcare system.
Course Offered: Fall, Winter, Spring, Summer
Credits:

SOC 229 Race and Ethnic Relations
This course provides a sociological perspective on race and ethnic relations. Such a perspective suggests that racial and ethnic categories are social constructs that result from historical struggles over economic resources, political access, and cultural identity. Furthermore such a perspective demonstrates that racism and ethnic prejudice are not simply the properties of individuals. This class will examine the intersection of racial and ethnic conflict with a variety of other ideas and structures in society in order to reveal the ways in which race continues to matter. Prerequisite(s): SOC 122 or ANT 100
Course Offered: Fall, Winter, Spring, Summer
Credits:

SOC 231 Multiculturalism
This course explores the wide variety of cultures that currently exist in the United States. In addition to different racial and ethnic cultures, we also consider class cultures, religious cultures and LGBTQ cultures. Significant time is devoted to examining the values, norms and everyday life of

different cultures as well as the ways that different cultures (and the people from those cultures) interact. Multicultural social policy issues and media representations of different cultures are also analyzed. Prerequisite(s): SOC 122
Course Offered: Fall, Spring
Credits:

SOC 235 Mass Media and Popular Culture
This course examines popular culture and mass media in America. Emphasis is on the current state of popular culture and mass media, although historical presentations may be included. Major sociological theories used to study and explain popular culture and mass media will be presented along with relevant research findings. Prerequisite(s): SOC 122
Course Offered: Fall, Summer
Credits:

SOC 236 Sociology of the Military
This course examines the institution of the military from a sociological perspective. Topics may include, but are not limited to the specific structure of military organizations, the norms of military life, family life in the military, as well as stratification and diversity in the military. Particular attention is devoted to changes in the military over time as well as the future of the American military. Prerequisite(s): SOC 122
Credits:

SOC 237 The Sociology of Popular Music
This course will examine American popular music genres including but limited to rock and hip-hop, from a sociological perspective. Specific topics to be examined may include: the role of the music industry and recording companies, ideologies, globalization of American music, intertextuality, music consumption patterns and the influence of new technologies, moral panics, theories of popular music culture, social change, and the social class, and gender implications of popular music. Prerequisite(s): SOC 122
Credits:

SOC 238 Youth Culture
This course traces the growth of a distinctive youth culture in American life and imagination since World War II. Topics discussed may include juvenile delinquency, teen sexuality, teen poverty and homelessness, the American high school and college life. Particular attention is also devoted to the ways that films, as well as other mass media forms such as popular music and television shows, represent the lives of American youth.
Course Offered: Fall, Spring
Credits:

SOC 240 Women, Men and Social Change
This course studies men's and women's changing roles, relationships, and participation in the labor force. A substantial section of the course is dedicated to understanding the history responsible for contemporary women's and men's social, economic, political and legal statuses. Note: Students completing this course may not receive credit for ANT 240.
Prerequisite(s): SOC 122
Credits:

SOC 245 Technology, Society and Social Change
This course explores the ways in which science, technology, and society create social change. The focus is on the varying benefits, costs, and consequences of these changes across historical eras and cultures. This course carries a hands-on computer component as a requirement.
Prerequisite(s): One course in social science
Course Offered: Fall, Winter, Spring, Summer
Credits:

SOC 263 Immigration Past and Present
Immigration has been one of the most important forces in American society. This course will examine how successive waves of immigrants and newcomers most arriving voluntarily others as slaves and indentured workers have created and recreated American society in their relations with people already here and with each other. The course will present immigration as a process, and examine international migration patterns, changing law, demand for immigrant labor, social networks of family and friends, nativist resistance, the relevant theoretical perspectives, and the experiences of specific groups. We focus on the different periods of immigration, particularly the great migrations of the late 19th and early 20th centuries, and the post-1965 wave of immigrants from the Caribbean, Asia, Mexico and Latin America. Prerequisite(s): SOC 122
Credits:

SOC 270 Topics in Sociology
Courses that range from 270-279 are special topics courses. These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 271 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 272 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 273 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 274 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 275 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 276 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 277 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 278 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 279 Topics in Sociology
These courses explore specialized sociological topics of interest and vary from semester to semester. Students may take multiple special topics courses. Please check with the department chairperson and the current course listing for further details. Prerequisite(s): SOC 122
Credits:

SOC 282 Introduction to Lesbian, Gay, Bisexual, and Transgender (LGBT) Studies
This course is an introduction to the interdisciplinary field of Lesbian, Gay, Bisexual, and Transgender (LGBT) Studies. We will examine major concepts, theories, and political issues surrounding LGBT experience. We will analyze

gender identity and human sexuality as social, cultural, and historical constructions. In addition, LGBT identity has profound implications in economic, cultural, social, and political spheres of life. We will pay acute attention to LGBT political struggles and their relationships to economy, family, religion, education, law, and medicine. Drawing from fields such as: Sociology, Anthropology, History, English, and Psychology, we will examine the status, experiences, and discrimination against members of the LGBT and the ways these experiences are impacted by race, ethnicity, class, and ability. Prerequisite (s): One Social Science and EGL 102
Course Offered: Fall, Spring
Credits:

SOC 283 Sex, Gender and Sexuality
This course introduces students to the study of sex, gender, and sexuality from a sociological perspective. It examines how these categories are socially and culturally constructed and how they affect our lives and shape our social world. Students read a wide range of classic sociological texts that examines the differences between sex and gender and explores human sexuality. A primary topic of discussion is gender socialization or how people learn society's gender norms from family, media, peers, educational institutions, and the workplace. Students will be introduced to cutting-edge research and case studies. Topics include: intersexuality, men's studies, feminist theory, transgendered individuals, sex work, and queer theory.
Prerequisite(s): SOC 122
Course Offered: Fall, Spring
Credits:

SOC 303 Sociology of Work and Occupation
This course will focus on the various dimensions of work and the social experience of making a living in the United States and other societies - past, present and future. We consider the large-scale developments related to a rapidly changing global economy, and the implications of these changes for individual workers. Topics discussed include the impact of technological innovations, changing occupational roles and subcultures, the development of the professions and professional ethics, gender roles and work roles, unemployment and underemployment, and the relationship between work and family. Prerequisite(s): SOC 122 and EGL 102
Course Offered: Fall, Spring
Credits:

SOC 304 Sociology of Leadership
What is leadership? Why is it important? What are its conditions? This course will explore the nature of leadership in social groups, analyzing both contemporary and historical examples, especially as these relate to the emergence, maintenance, conditions, and impact of leaders and leadership models. In this context, we consider and apply classical and contemporary sociological theory and research to understand the variety of roles within groups, the sources of group conformity and deviance, the distribution of power and authority, and the ways in which groups change over time. We will also consider how larger structures of inequality, for example, in social class, gender, ethnicity, race, age, and sexual orientation, may impact leadership. Prerequisite(s): Any social science course and EGL 101.
Credits:

SOC 309 Sport in Society
This course analyzes the role of sport in society, especially American society. Particular attention is given to the significance of gender, race, ethnicity, and social class in sports. The course is organized around lectures, film, and discussion. Students are also expected to conduct their own research project. Prerequisite(s): SOC 122 or SOC 223 and EGL 102.
Course Offered: Fall, Spring
Credits:

SOC 311 African American Leadership
This course examines African American political leadership in the United States from the antebellum era through the 21st century. Emphasis is placed on the ideas espoused by a wide range of African American leaders, both male and female, and how these ideas shaped formal organizations, economics, politics, and social relations amongst Americans. Drawing from the sociology of leadership, students will learn and discuss what strategies make some leaders effective and successful. Prerequisite(s): SOC 122 and EGL 102
Credits:

SOC 325 Social Inequality
This course examines the nature, causes, and consequences of social stratification. We explore the different theoretical perspectives on inequality, global inequalities, the extent of inequality in America, and the issues of status and mobility. In addition to examining the different class cultures in the United States, we investigate the profound effects of education, class, gender, and race on individual "life chances" (i.e. the ability to achieve power, wealth, status, etc.). Prerequisite(s): Any 200 level Sociology course.
Course Offered: Fall
Credits:

SOC 326 Visual Sociology
Visual Sociology uses cultural imagery to examine and analyze society. This course will explore the use of visual methods to study human behavior. Students will explore how meaning is created and transmitted visually and how visual media can be used to communicate sociological understandings to public audiences. Specifically, students will learn how to conduct visual ethnography and how to use sociological concepts and theories to analyze data. In this experiential learning course, students will use photography as a tool to conduct fieldwork—gathering data about a social justice issue that they have chosen, and presenting those findings in a poster presentation.
Prerequisite(s): Any 200 level Sociology course.
Credits:

SOC 329 Social Movements
In this course, students will learn to critically analyze processes of change in society while developing an analytical mind and improving their writing skills. Social movements are collective attempts to change the way people live their lives, how governments govern, and how economic systems produce and distribute goods. We live in a social movement society. Though we are not always aware of the level of activism going on around us, the number and different types of organizations working to create some type of social change is larger than ever before. Globalization and communications technologies have broken down barriers to worldwide participation in movements for change. Understanding how the world is influenced by individuals working together for change is of vital importance. This class focuses on theoretical domains in the sociological study of social movements and general social processes rather than on specific movements. Substantive work on specific movements is used to explain issues such as mobilization, tactics, and ideology, among other factors.
Prerequisite(s): Any 200 level or higher sociology course
Credits:

SOC 330 Seminar in Sociology
Courses that range from 330-339 are special topics courses. Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 331 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 332 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 333 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 334 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 335 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 336 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 337 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 338 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 339 Seminar in Sociology
Each semester when the course is offered, a topic of interest will be selected by the department for study in seminar. Please check with the department chairperson and the current course listing for further details.
Prerequisite(s): SOC 122 and EGL 102.
Credits:

SOC 342 Deviance: Crime, Sex and Drugs
This course explores classic and contemporary definitions and theories of deviance. Special attention is placed on the social functions that deviance serves in society, and the inequalities that emerge in the criminal legal system. Prerequisite(s): SOC 122 or SOC 223 and EGL 102.
Course Offered: Fall, Spring, Summer
Credits:

SOC 350 Global Social Change
This course examines global social change from a sociological perspective. Specifically, the course focuses on the process of globalization, particularly on the challenges international development poses for developing nations. Specific topics may include global income inequality, global poverty, anti-globalization activism, transnational corporations (e.g. Walmart), and the rise of supranational organizations (e.g. World Trade Organization).
Prerequisite(s): SOC 122 and EGL 102.
Course Offered: Fall, Spring
Credits:

SOC 351 Global Health Systems
This course examines and compares healthcare systems from a sociological perspective in post-industrialized, transitional, and developing societies. Students are required to complete an original research paper/project.
Prerequisite(s): SOC 122 or SOC 223 or SOC 228 and EGL 102.
Credits:

SOC 360 Sociological Theory
This course examines sociological theory, from its beginnings in the 19th century through its historical development into the 21st century. The theories of classical sociologists such as Karl Marx, Emile Durkheim, and Max Weber will be covered. This comprehensive course will also introduce students to contemporary theory such as feminist theory, gender theory, critical theory, and post-structuralism. This course provides students with an introduction to the theoretical foundations of the discipline of sociology and examines how theory can be applied to better understand the social world. Prerequisite(s): Any 200 Level Sociology course and EGL 102 with a grade of C or higher.
Course Offered: Fall, Spring
Credits:

SOC 361 Gender Theory
Gender theory examines how the categories of sex and gender influence our ways of living and thinking. We will examine the prevalence of gender inequality in society and how it might be eradicated. We will also emphasize the ways in which socio-economic position, race, ethnicity, sexual orientation, religion, citizenship, geography, and/or ability interact with gender to shape our experiences. Students will gain better insight into how gender impacts their lives at work, at home, and in public. Students will learn how to apply gender theories to their own lives, identities, and social worlds. Note: Students cannot earn credit for SOC 361 and SOC 361W; SOC 361W can be used to fulfill the writing intensive requirement.
Prerequisite(s): SOC 200 or 282 or 283 or PSY 230 or 307 and EGL 102 with a grade of C or higher.
Course Offered: Spring
Credits:

SOC 366 Sociological Research Methods
In this course, we develop an understanding of the different types of research methods used by sociologists (and other social scientists) to study the social world. The class begins with a discussion of the fundamental concepts of social science research and the ethical issues involved. Students will learn how to conduct basic qualitative and quantitative research - the ability to formulate research questions, methods of research design, strategies for collecting information and data, as well as the ability to analyze and present statistical data. Great emphasis is placed on students doing research projects in and outside of class. Prerequisite(s): Any 200 Level Sociology course.
Course Offered: Fall, Spring
Credits:

SOC 407 Field Research in Sociology
This is an advanced course in qualitative research methodologies. Students read, design, and complete a field research project using their data from Sociological Research Methods or research internship. Students will learn advanced sociological analysis through the presentation of classic theories and case studies in class, and will apply them to their research projects.
Prerequisite(s): SOC 366 and Senior level status.
Credits:

SOC 480 Research Internship I
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): SOC 366 or ANT 366 with a grade of C or higher.
Credit:

SOC 481 Research Internship I
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): SOC 366 or ANT 366 with a grade of C or higher.
Credits:

SOC 482 Research Internship I
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper

or poster at the conclusion of their research internship. Prerequisite(s): SOC 366 or ANT 366 with a grade of C or higher.
Credits:

SOC 485 Research Internship II
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): SOC 366 or ANT 366 with a grade of C or higher.
Credit:

SOC 486 Research Internship II
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): SOC 366 or ANT 366 with a grade of C or higher.
Credits:

SOC 487 Research Internship II
The research internship provides students with insight into the personal qualities and skills that make a good researcher, as well as learning about the broader impact of scientific discovery. While working alongside a faculty member students will be able to hone their research and analytical skills, through hands-on experiences. Students will create a research plan in consultation with the faculty member and spend 45-135 hours during the semester working on research. While each course design will vary, students will be involved in library research, compiling literature reviews, data collection, and data analysis. Students must either complete a paper or poster at the conclusion of their research internship. Prerequisite(s): SOC 366 or ANT 366 with a grade of C or higher.
Credits:

SPANISH (SPA)

SPA 141 Spanish I (Elementary)
A beginning course in Spanish emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.Note: Students who have completed SPA 147 may not receive credit for SPA 141.
Course Offered: Fall, Winter, Spring, Summer
Credits:

SPA 142 Spanish II (Elementary)
A continuation of Spanish 141 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. Prerequisite(s): 2 or 3 years of high school Spanish or SPA 141 or SPA 147.
Course Offered: Fall, Winter, Spring, Summer
Credits:

SPA 145 Spanish for Medical Personnel
Conversational course for people who are working or are planning to work in the medical or allied medical field. The course includes structural review and realistic, practical dialogues dealing with the different situations that medical personnel encounter in the course of their work. A valuable course for those who intend to work in New York City or Long Island. Prerequisite(s): 2 or 3 years of high school Spanish or SPA 141 or SPA 147.
Course Offered: Fall, Spring, Summer
Credits:

SPA 146 Spanish for Medical Personnel II
Continuation of SPA 145. Prerequisite(s): 3 or more years of high school Spanish or SPA 145.
Course Offered: Fall, Summer
Credits:

SPA 147 Spanish for Business I
This is a beginning language course which covers basic linguistic structures of Spanish. The course differs from the traditional academic course only in its emphasis on developing vocabulary useful for careers in business, economics, or finance. Both oral and written communication skills will be developed. The course contains realistic dialogues focusing on business themes. Practical application of new structures is provided by vocabulary enrichment, role-playing situations, and other communicative activities. In addition, appropriate supplementary readings and practice in writing business letters, memos, and reports will be provided. Note: Students who have completed SPA 141 may not receive credit for SPA 147.
Course Offered: Fall, Winter, Summer
Credits:

SPA 148 Spanish for Business II
Continuation of SPA 147. Prerequisite(s): 3 or more years of high school Spanish or SPA 141 or 147.
Course Offered: Summer
Credits:

SPA 243 Spanish III (Intermediate)
A continuation of Spanish 142 for students who have had 2 or 3 years of high school Spanish. This course emphasizes the gradual development of the four language skills: listening, speaking, reading, and writing with stress on communicative competence and cultural awareness. A literary and cultural reader will be introduced. Prerequisite(s): SPA 142
Course Offered: Fall, Spring, Summer
Credits:

SPA 244 Spanish IV (Intermediate)
For those students that have taken SPA 243 of four or more years of high school Spanish. This course emphasizes structural review, intensified practice in oral expression with increased emphasis on reading and writing skills. Continued attention will be given to contemporary Spanish culture. Selections from Spanish and Latin American authors will be read. Prerequisite(s): SPA 243
Course Offered: Fall, Spring, Summer
Credits:

SPA 250 Spanish for Native Speakers
This course is designed to strengthen the linguistic ability of students of Hispanic background, born or educated in the United States, who speak Spanish at home and lack a formal knowledge of the language. All four skills - comprehension, speaking, reading and writing are highlighted but emphasis is given to reading, writing and vocabulary. Cultural, social and literary insights of the Hispanic world. Prerequisite(s): Native or near native command of Spanish.
Course Offered: Fall, Summer
Credits:

SPA 251 Spanish Composition and Conversation
This course is an upper intermediate level course for students who are already proficient speakers of Spanish and have formal knowledge to the language. The course emphasizes the mastery of writing, reading, and oral communication skills, with particular attention given to the issues of Anglicism and interference of English, code switching, vocabulary building, orthography, and reading comprehension. Students will write compositions, make oral presentations and read materials of a cultural/literary nature, emphasizing the relationship between the culture of the United States and Hispanic culture. Prerequisite(s): SPA 244
Credits:

SPA 301 Spanish V (Advanced)
An advanced conversation/composition course with intensive practice in oral and written Spanish. Selected representative works of Spanish authors will be read. Because the course deals mainly with Spanish fiction, emphasis will be given to familiarizing the student with this narrative in order to explore the connection between language and style as well as the literary trends and the social and cultural contexts of the periods for comparison and contrast. Prerequisite(s): 4 or more years of high school Spanish or SPA 244.

Course Offered: Fall, Summer
Credits:

SPA 302 Spanish VI (Advanced)
An advance conversation composition course with intensive practice in oral and written Spanish. Selected representative works of Spanish American fiction will be read. Because the course deals mainly with Spanish American fiction, emphasis will be given to familiarizing the student with this narrative in order to explore the connection between language and style as well as the literary trends and the social and cultural context of the periods for comparison and contrast. Prerequisite(s): 4 or more years of high school Spanish or SPA 301.
Course Offered: Fall, Summer
Credits:

SPA 303 Spanish and Latin American Cinema
In this course, representative Spanish and Latin American movies that cover periods from Romanticism to contemporary times will be analyzed, viewed and discussed. Films will be chosen to discuss social, philosophical, political and identity problems as well as its interpretation according to the artistic vision and directors' achievements and goals. Theory and history of film genres of Spain and Latin America cinema will be studied. Note: This course will be taught in Spanish only. Students taking this course cannot receive credit for MLG 302. Prerequisite(s): Permission from this department chair or SPA 302.
Course Offered: Summer
Credits:

SPA 305 Hispanic and Latin American Culture and Civilization
Civilization course: Provides a general perspective on the formation of the Latin American Culture through the centuries, with special emphasis on Spanish America. In parallel form, historical and cultural evolution of the New World and the Iberian Peninsula will be studied from their beginnings up to the present. Among other aspects, the course will give special attention to the rich multicultural heritage which has been maintained in Latin America through the centuries, as well as its achievements in Art and Literature. Note: This course will be taught in Spanish only. Students taking this course cannot receive credit for MLG 305. Prerequisite(s): Permission from this department chair or SPA 302.
Course Offered: Fall, Summer
Credits:

SPA 310 Latin American Women Writers
This course focuses on the works of major Latin-American women writers from the 17th to the 20th century. We will analyze poems, short stories and novels and how women have been portrayed in literature. The theoretical approach to this class will be based on contemporary feminist critics. We will study the works of the first 17th century Mexican feminist writer, The Nun, Sor Juana Ines De La Cruz, as well as the works of Elena Poniatowska, Julia Alvarez and Laura Ezquivel among others. Note: This course will be taught in Spanish only. Students taking this course cannot receive credit for MLG 310. Prerequisite(s): Permission from this department chair or SPA 302.
Course Offered: Fall
Credits:

SPA 312 Contemporary Latin American Short Stories
An introduction to different literary movements reflected in Latin American Short Stories in translation during the 20th Century. The emphasis will be the lyrical basis of the realistic, surrealistic and supernatural elements in the stories of Latin American Writers. Modern women writers' esthetics and poetic sensitivity as well as humor and sarcasm will be included in both the observation of individual psychology and tales of the absurd. Summarizing, and using Anderson Imbert's three basic definitions, the focus of this course will be a) reality (realism); b) the supernatural (literature of the fantastic); c) the strange (magic realism). Note: Course will be taught in Spanish only. Students taking this course cannot receive credit for MLG 312. Prerequisite(s): Permission from this department chair or SPA 302.
Course Offered: Summer
Credits:

SPA 315 Art, Culture and Civilization of Spain
Study of Spain, a multicultural and multilingual nation, not as a homogenous entity, but rather as a heterogeneous tapestry of various cultures and languages. The corpus of cultural texts studied will be derived from the realms of literature, film, architecture, music and the visual arts. They will be analyzed within their socio-historical context, as well as their aesthetic value. An integral component of the course will be the required trip to Spain (during spring break) to visit historical sites, works of art and architecture studied in the course. Note: This course will be taught in Spanish only. Students taking this course cannot receive credit for MLG 315. Prerequisite(s): Permission from this department chair or SPA 302.
Course Offered: Fall
Credits:

SPA 320 Latino Writers in the United States
The development of Latino literature and culture in the United States, with emphasis on the 20th century. Major writings of Mexican, Cuban, Dominican Republican, Puerto Rican and other Latinos will be analyzed in relation to each group's particular experience and its relation to main stream society. Particular attention given to how gender, race, ethnicity, and class interaction affects the formation of the diverse cultural experience of the U.S Latino. Note: This course will be taught only in Spanish. Students taking this cannot receive credit for MLG 320. Prerequisite(s): Permission from this department chair or SPA 302.
Credits:

SPEECH (SPE)

SPE 130 Public Speaking
This course prepares students in the following areas of effective expository and persuasive public speaking: audience analysis; topic selection; appropriate use and documentation of supporting material; organization and outlining techniques; aspects of delivery which include appropriate eye contact, posture, use of notes, elements of voice such as rate and volume, and the use of presentational visual aids. Group discussion and problem solving exercises will also be provided, and students will engage in peer feedback throughout the course.
Course Offered: Fall, Winter, Spring, Summer
Credits:

SPE 131 Voice and Diction
This course presents the processes involved in the production of voice and diction. It introduces the fundamentals of place and manner of production for the vowels and consonants of Eastern Standard Dialect. There is an emphasis on New York Regional Dialect and the influence of foreign accents and dialects as needed. This is a hands-on course in which each student receives an initial speech profile and then focuses on their speech pattern throughout the semester both individually and in groups. All in-class exercises and assignments are designed to achieve the goal of a clear, effective, and professional speech pattern.
Course Offered: Fall, Summer
Credits:

SPE 202 Interpersonal Communications
An Introduction to effective interpersonal communication skills covering areas such as effective and active listening, feedback techniques, the effects of self-concept and perception in daily communications, and non-verbal and cross-cultural communication. These skills will be developed through class lectures, group exercises, and individual activities and assignments. Prerequisite(s): EGL 101
Course Offered: Fall, Winter, Spring, Summer
Credits:

SPE 230 Effective Executive Speaking
A course designed to develop and refine the student's overall profile as an effective communicator in private and public settings. Articulation, listening skills, problem solving abilities, organizational skills and feedback techniques are stressed in interpersonal, group, and public speaking experiences.
Credits:

SPE 330 Professional and Technical Speech
A course designed to prepare students to develop and deliver oral presentations in a professional, business, scientific, or technical context, stressing methods of presenting information specific to students' disciplines. Students use audio-visual materials or technology to enhance their presentations. Prerequisite(s): EGL 102
Course Offered: Fall, Spring, Summer
Credits:

SPE 331 Advanced Oral Communications
This course is designed to develop effective and professional communication in the areas of communication theory, advanced

presentation skills, and voice and diction. A major component of the course provides students with a personalized voice and diction diagnostic profile which informs each student of specific speech characteristics they present that deviate from Standard Eastern Dialect. Particular attention is given to New York Regional Dialect and foreign accent reduction. The course also introduces various theoretical systems of communication. There is a strong focus on the development and effective application of presentational skills in both public and group/team environments with an emphasis on professional settings. All aspects of the course contain written components which include student readings and reports as well as comprehensive speech outlines. Prerequisite(s): EGL 102
Course Offered: Fall, Summer
Credits:

SCIENCE, TECHNOLOGY AND SOCIETY (STS)

STS 101 Gateway to Science, Technology, & Society
This course will provide students with a rich introduction to the field of Science, Technology, & Society (STS), paying particular attention to key concepts and methods such as the interplay between science, politics, economics, religion, and culture. STS studies the position of science in society as well as social and cultural aspects of the production of scientific knowledge. The course will also devote time to career development and explore fields where STS can provide entry. Prerequisite(s): EGL 101
Course Offered: Fall
Credits:

STS 200 Information Literacy in the Digital Era
The purpose of this course is to provide an introduction to research methods in the age of new media, focusing on the effective location and use of digital resources, including electronic databases, Web-based materials, e-books, etc. Course lectures will focus on the historical evolution of information-sharing tools and current controversies in authorship and research in the digital age, including the debate on plagiarism, issues associated with intellectual property, and questions about the authenticity of data. Prerequisite(s): EGL 101
Course Offered: Fall, Spring
Credits:

STS 201 Thinking Critically About Technology
Is more/better/faster technology always a good thing? This course will explore how society views technology and how technological advancements impact our everyday lives. The learner will then apply this knowledge to assess and engage arguments for and against major technological advancements including the emergence of cyberspace, "always-on" social media, artificial intelligence, transhumanism, and other radical evolutions in technology. Prerequisite(s): EGL 101
Course Offered: Summer
Credits:

STS 300 Special Topics: Science, Technology, & Society
This course offers instruction in special content areas that explore the intersection of scientific and technological advances, politics, culture, and society. Interdisciplinary in nature, Special Topics in Science, Technology, & Society will investigate contemporary issues such as ecology and environmental sustainability, the spread of information and communication technologies, privacy and surveillance, new technologies of war, and bioethics, among other fields of inquiry. This course will require extensive reading and research, focused on the selected topic. Students should consult the department before registering for any Special Topics course. Prerequisite(s): Any 100-level or higher SOC, HIS, or POL course.
Course Offered: Fall, Spring, Summer
Credits:

STS 303 Research Experience
This course awards credit for hands-on research experience with a faculty mentor to Science, Technology, & Society students. The course is specifically intended for those who participate in faculty-mentored research prior to their senior year capstone experience. Students will receive credit for research experiences on the Farmingdale Campus, or off-campus in major universities, research laboratories, businesses, industry, government, horticultural gardens, and other settings that fit their academic interests and career goals. Prerequisite(s): Junior Status in the STS program.
Course Offered: Summer
Credits:

STS 310 Surveillance Technology in Cinema
This course examines the issues raised by cinematic representations of the use of surveillance technology and their implications to our global society. Through critical analysis of assigned screenings and readings, you will explore the ways in which firm has represented the global surveillance culture that in recent years has increasingly become part of the public consciousness. Prerequisite(s): Junior Status in the STS program.
Course Offered: Fall, Summer
Credits:

STS 320 Technology and Humanity in Cinema
This course examines the issues surrounding cinema's portrayals of the impact that scientific and technological progress have upon humanity. Through critical analysis of assigned screenings and readings, students will explore the ways in which film articulates the shifting conception of what it means to be human in a world increasingly defines by our relationship with technology. Prerequisitie(s): Junior Status in STS program.
Course Offered: Fall, Spring, Summer
Credits:

STS 330 Frontiers of :Scientific Th
In this course students will be introduced to a method of problem solving characterized by critical thinking across multiple disciplines. The course will consist of two parts. In Part 1 students will revisit the scientific method to learn how to employ its tenets to solve unstructured, real-world problems encountered at the individual, local, and global levels. Students will be introduced to the concept of integrative thinking that draws on the multi-disciplinary nature of STS study and make solution-oriented connections across conventionally separate fields. In the process, students will gain familiarity with the methods in which data science may be employed to approach problem solving. In Part 2 students will be given the opportunity to apply the STS Skill-Set (developed in Part 1) to evaluate problems and synthesize solutions to issues specifically chosen due to their significant impact on the modern professional environment. Prerequisite(s): Junior Status and one General Education Science course with a lab. Open to students in the Science, Technology and Society program.
Course Offered: Fall
Credits:

STS 400W Senior Seminar in Science, Technology, & Society (Writing Intensive)
The Senior Seminar in Science, Technology, & Society is a capstone course for those students intending to graduate from the Science, Technology, & Society (STS) program. Students will participate in a reading and writing-intensive seminar organized around a common theme in the sciences and technologies, exploring how social, political, and cultural values affect the production and dissemination of knowledge and the development and use of new technologies. Students in the seminar will be required to complete a substantial research project integrating what they have learned during their course of study and their specific areas of interest. Students should consult the department before registering for any seminar course. This is a writing-intensive course. Note: Students cannot get credit for STS 400 and 400W; STS 400W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Science, Technology, & Society Department Prerequisite(s): Senior status in STS program and EGL 101 with a grade of C or higher.
Course Offered: Fall, Spring, Summer
Credits:

STS 401W Internship in Science, Technology, & Society (Writing Intensive)
This course is designed for Science, Technology, & Society (STS) majors who wish to complete a semester-long (or equivalent) internship as part of their course of study. Students may choose an internship at a corporation or a civic, educational, governmental, or not-for- profit organization after consultation with and permission of the department chair. Any internship should support learning outcomes and/or career development in the sciences, technology, and/or society. Enrollment in this course is restricted to students with senior status in the STS Program. Students enrolled in an internship will meet periodically with their advisor and will be required to submit internship notes and both a draft and final report of the internship experience at the end of the semester. This is a writing-intensive course. Note: Students cannot get credit for STS 401 and 401W; STS 401W can be used to fulfill the writing intensive requirement. Note: Offered at the discretion of the Science, Technology, & Society Department Prerequisite(s): Senior status in STS program and approval of Department Chair and EGL 101 with a grade of C or higher.
Course Offered: Fall, Spring, Summer

Credits:

STS 402 Internship in Science, Technology, & Society
This course is designed for Science, Technology, & Society (STS) majors who wish to complete a semester-long (or equivalent) internship as part of their course of study. Students may choose an internship at a corporation or a civic, educational, governmental, or not-for- profit organization after consultation with and permission of the department chair. Any internship should support learning outcomes and/or career development in the sciences, technology, and/or society. Enrollment in this course is restricted to students with senior status in the STS Program. Students enrolled in an internship will meet periodically with their advisor and will be required to submit internship notes and both a draft and final report of the internship experience at the end of the semester. Prerequisite: Senior status in STS program and approval of Department Chair.
Course Offered: Summer
Credits:

STS 403 Internship in Science, Technology, & Society
This course is designed for Science, Technology, & Society (STS) majors who wish to complete a semester-long (or equivalent) internship as part of their course of study. Students may choose an internship at a corporation or a civic, educational, governmental, or not-for- profit organization after consultation with and permission of the department chair. Any internship should support learning outcomes and/or career development in the sciences, technology, and/or society. Enrollment in this course is restricted to students with senior status in the STS Program. Students enrolled in an internship will meet periodically with their advisor and will be required to submit internship notes and both a draft and final report of the internship experience at the end of the semester. Prerequisite(s): Senior status in STS program and approval of Department Chair.
Course Offered: Summer
Credits:

STS 404 Internship in Science, Technology, & Society
This course is designed for Science, Technology, & Society (STS) majors who wish to complete a semester-long (or equivalent) internship as part of their course of study. Students may choose an internship at a corporation or a civic, educational, governmental, or not-for- profit organization after consultation with and permission of the department chair. Any internship should support learning outcomes and/or career development in the sciences, technology, and/or society. Enrollment in this course is restricted to students with senior status in the STS Program. Students enrolled in an internship will meet periodically with their advisor and will be required to submit internship notes and both a draft and final report of the internship experience at the end of the semester. Prerequisite(s): Senior status in STS program and approval of Department Chair.
Course Offered: Summer
Credits:

TELECOMMUNICATIONS TECHNOLOGY (TEL)

TEL 215 Introduction to Telecommunication Systems
An introduction and survey of the Telecommunications industry's fundamentals. This course will provide an introduction to Internet and Emerging Technologies as well as Fiber optics and Wireless networks. The basics of telephony, switching systems, multiplexing, analog and digital signaling principles, modulation principles, transmissions equipment, and data communication networks are covered. Voice and data communications systems and protocol as well as private and public networks are studied. Prerequisite(s): EET 105, 200 and MTH 129
Course Offered: Summer
Credits:

TEL 305 Communication Circuits and Systems
Fundamental concepts in communications. Topics include: Tuned Amplifiers, RC and LC oscillators, Fourier Series and the spectral content of signals. Amplitude and Frequency modulation, and signal recovery circuits. Single-sideband communication systems. Digital Communications: encoding technique and transmissions. Prerequisite(s): TEL 215 Corequisite(s): TEL 305L
Course Offered: Fall
Credits:

TEL 320 Wireless Communications
This course will concentrate on the Radio Frequency properties of wireless communications systems. After an introduction to the basics of high frequency signal behavior on transmissions lines and the nature of electromagnetic propagation, the course will examine the various modulation modes used in today's wireless systems. This will include modes such as CDMA, TDMA, and OFDM. Laboratory experiments will study the effects of fading and multipath. Prerequisite(s): TEL 305, EET 223 and MTH 130 Corequisite(s): TEL 320L
Course Offered: Fall, Summer
Credits:

TEL 325 Optical Communications and Systems
This course introduces the students to the principles of optical communications systems. Topics include: Optical fibers; attenuation and dispersion; optical sources such as light emitting diodes (LEDs) and laser diodes; optical amplifiers; passive components; photodetectors; PIN and avalanche photodiodes; optical receivers and sensitivity; optical system design issues including power budget, bandwidth, Q-factor, and bit error ratio (BER); Wavelength Division Multiplexing (WDM); introduction to optical networks. Laboratory experiments and simulations reinforce the theoretical concepts and include the design and simulation of a point-to-point optical link. Prerequisite(s): TEL 305, MTH 130 and PHY 136
Course Offered: Summer
Credits:

TEL 420 Emerging Communication Technologies
This course will concentrate on current and emerging telecommunications technologies. Signaling protocols for call processing for both circuit switched and packet switched communications as well as advance voice coding (e.g., G729) for wireless and VoIP systems will be covered. The course will also cover other technologies such as ISDN, Frame Relay, and Residential Broadband including DSL.SONET networks, ATSC video standards including IPTV, HDTV as well as some modern Satellite communications will be included. Prerequisite(s): TEL 320, 325 and EET 440
Course Offered: Fall, Summer
Credits:

TEL 450 Telecommunications Senior Project Seminar
The Senior Project Course is the first course in a two course sequence that provides telecommunications technology students the opportunity to integrate critical thinking and technical knowledge learned throughout the program in the identification, design, development and evaluation of a telecommunication related project. Case studies are included to illustrate different design and product development strategies used in the solution of various telecommunication design problems. Students are required to submit a preliminary senior design project proposal by the conclusion of this course. Prerequisite(s): Completion of junior level Telecommunications Technology courses or Department approval.
Course Offered: Fall
Credits:

TEL 452 Telecommunications Senior Project
The Senior Project Course is the capstone course for telecommunications technology students. It is the second course in the telecommunications senior project course sequence in which students work under the supervision of a faculty member in the implementation of an approved design project proposal. Students are required to provide a written report and make an oral presentation that addresses areas such as the design process implemented, product specifications, cost analysis, testing and/or computer simulation procedures used in the verification of results obtained as well as ethical and product liability issues addressed. Prerequisite(s): TEL 450
Course Offered: Summer
Credits:

TEL 460 Mobile and Cellular Communication Systems
This course covers the fundamental concepts used in cellular and mobile communication systems such as propagation, link budget, handoffs, power control, and access protocols. The course also introduces the modern cellular network standards such as AMPS, TDMA, GSM, CDMA, 3G/4G with emphasis on different technologies and applications used by these standards. Prerequisite(s): TEL 305 Corequisite(s): TEL 460L
Course Offered: Summer
Credits:

TEL 470 Telecommunications Policy and Standards
This course covers telecommunications policies and issues with special emphasis on domestic policy, regulation and law. Current issues, trends and standards will also be discussed. The course starts with a basic

definition of telecommunications and why policies, regulation/deregulation and law are important to understand. It then moves to the history of US telecommunications development with emphasis on the regulatory environment and continues with discussions of current US regulatory policy at the state and federal levels. Current sweeping changes in the regulatory and legal arenas and the move to a new US and world model will be discussed. The importance of standards for domestic and international telecommunications will be studied along with a description of the standards definition process. Prerequisite(s): Junior status in the Telecommunications Technology Program.
Course Offered: Fall, Summer
Credits:

THEATRE (THE)

THE 233 Introduction to Theatre
A survey of the elements of theatrical art, including script, acting, scenery, lighting, costumes, and the roles of the various members of professional production: producer, actor, and audience. Representative plays, playwrights, and styles from ancient Athens to off-Broadway are examined.
Prerequisite(s): EGL 102
Course Offered: Fall
Credits:

VISUAL COMMUNICATIONS (VIS)

VIS 101 Introduction to Drawing
Students will be introduced to basic observational freehand drawing techniques, including line, form, light and shade and composition. Students will study examples of work from various artists and have an opportunity to apply this knowledge in the studio and in outdoor settings.
Course Offered: Fall, Winter, Spring, Summer
Credits:

VIS 102 The Interrelationship of Art and Music
In an effort to foster in students a broad appreciation of the arts, this course will expose students to the fundamentals of art and music and will explore historic trends and compositional techniques common to both genres. The course will be presented in seminar format and will include lecture, class discussion, listening to music, viewing examples of art, and analyzing representative examples of music and art.
Credits:

VIS 103 Introduction to Watercolor
Students will be introduced to basic watercolor techniques, including color, value, shape and composition. Students will study examples of work from various watercolor artists and have an opportunity to apply this knowledge in the studio and outdoor settings.
Course Offered: Fall, Spring, Summer
Credits:

VIS 104 Introduction to Calligraphy
An introduction to the history and technique of the calligraphic arts. Students will gain insight into the origins and development of hand-lettered communication throughout history. Topics will range from illuminated manuscripts to contemporary calligraphic artists. Students will apply this knowledge to their own calligraphy projects.
Course Offered: Fall, Spring
Credits:

VIS 105 Introduction to Photography
This course is an introduction to the history, art and technique of photography. By utilizing their own cameras and commercial processing, students will acquire the knowledge and skills necessary to produce well-composed and properly exposed creative photographs. The estimated student cost for materials, including film, processing and other supplies is approximately $200 (not including camera).
Course Offered: Fall, Winter, Spring, Summer
Credits:

VIS 106 Introduction to Pastels
Students will be introduced to a vast array of pastel techniques including linear strokes, side strokes, blending, feathering, cross hatching, scumbling, and pointillism. Drawing and compositional skills such as an understanding of value, color, and line will also be stressed. Students will study examples of work from various artists and apply this knowledge in the studio and in outdoor settings.
Course Offered: Fall, Spring
Credits:

VIS 110 Drawing I
Drawing is the foundation for all other applications of design. To that end, this course explores the principles of freehand drawing, and emphasizes the use of line, light and shade, perspective, proportion and pictorial composition. Subject matter in class will include both still-life (natural and fabricated) and an introduction to drawing the figure. Students will experiment with a variety of black and white media as they learn about drawing and all its possibilities, both creative and analytical.
Course Offered: Fall, Spring
Credits:

VIS 112 Two-Dimensional Design
This course is an in-depth examination of the elements and principles of design and how they influence the creation of two-dimensional compositions. Students will acquire vocabulary and concepts that will be used throughout their careers. Individual visual expression will be emphasized through design assignments that allow the exploration of a variety of media and tools. Contemporary and historically significant works of art and design will be utilized. This will help students recognize the successful application of the elements and principles of design for evaluating their own work and that of their peers.
Course Offered: Fall, Spring
Credits:

VIS 114 Principles of Color
This course will explore the vast visual language of color including its characteristics, properties, and schemes, as well as its expressive and symbolic usage. An understanding of the rich vocabularies of both color and design will be enforced. Students will increase their skills in the identification and interpretation of design principles in contemporary and historically significant works of art. Students will experiment with color in many mediums as an avenue to recognizing the power of color.
Course Offered: Fall, Spring
Credits:

VIS 115 Three-Dimensional Design
Three-dimensional is the foundation for many of the specialized areas of graphic design, including package design, product design, environmental graphics, animation and three-dimensional modeling. Thus, this course stresses the application and appreciation of the principles and elements that make successful three-dimensional designs. Study will include: mass, volume, line, surface, plane, space, time and motion. In the design and construction of three-dimensional objects, students will explore a variety of materials and construction methods. Constructions will be made typically of wood, paper, bristol board, foam core, corrugated board, plaster and other three-dimensional materials. The course will also stress the efficient and safe use of tools and materials.
Course Offered: Fall, Spring
Credits:

VIS 116 Digital Media and Methods
The concepts and techniques of digital media are essential for the modern graphic designer. This course serves as an essential foundation for all subsequent courses in computer graphics. Students will gain an understanding of how this evolving technology applies to the visual communication industry and will be introduced to the hardware and software utilized within the field. The terminology that we use as designers when dealing with technology will also be stressed. Networking, printing, file sharing, on-line course management tools, etc., specific to the Visual Communication Department and Farmingdale State College campus will be covered. This course is required and must be taken in residence at Farmingdale.
Course Offered: Fall, Spring, Summer
Credits:

VIS 118 Creative Concepts Seminar
This course will be presented by instructors and guest lecturers in a seminar format that will integrate a series of topics and contemporary issues pertaining to creativity. The objective of this course is to further develop each artist's ability to conceptualize and creatively apply solutions to visual arts projects.
Course Offered: Fall, Spring

Credit:

VIS 120 Drawing II
This course furthers the investigations of drawing as the foundation for all other applications of design. Students will expand their understanding of perspective and structural drawing, and continue the development of the perception, skill and knowledge necessary to draw the human figure. In addition to working in graphite and charcoal, students will also experiment with a variety of drawing surfaces and media, including ink wash and watercolor. Prerequisite(s): VIS 110
Course Offered: Fall, Spring
Credits:

VIS 122 Typography I
Typography is the formal study of letterform. Each typeface has qualities that allow it to be identified, classified and appreciated for its own individual beauty. In this course, students will gain perspective into this important field by starting with a focus on early visual communication, symbols handwritten letterforms, calligraphy and the development of movable type. Students will then explore ways to categorize type into families and identify and define the similarities and subtle differences in classical typeface. Class discussions, projects, critiques and lectures will focus on typographic terminology and vocabulary, as well as the aesthetic discipline of using type effectively as a designer. An emphasis will be placed on typography as an essential element of graphic design. Prerequisite(s): VIS 112 and 116
Course Offered: Fall, Spring
Credits:

VIS 140 Introduction to Graphic Design
An introduction to the fundamental concepts of design as applied to the communication of information. The primary objective of this course is to develop the students' perceptual and technical skills. Class discussions and hands-on projects will stress the effective use of typography, images, and page layout principles to achieve a balance between the design and readability of documents.
Credits:

VIS 150 Computing and Internet Essentials
An introduction to computer operation on both the Macintosh and Windows computer platforms. This course is intended to give students an understanding of fundamental use of computers and cross-platform issues, especially as they pertain to the Internet. File management, scanning, fonts, communications, application software and web browsers will be some of the topics covered.
Credits:

VIS 188 Advertising Practices and Applications
This course will combine basic advertising principles with practical media application. This course shall introduce students to the business of advertising in a contemporary global environment. The course will explore concepts of advertising, including elements of media selection and copywriting within the parameters of internal budgets, management and the application of actual advertising creation. In addition, students will create advertising, integrating the roles of the creative director and marketing manager. Note: Students completing this course may not receive credit for BUS 188.
Course Offered: Fall, Spring
Credits:

VIS 200 Survey of Graphic Design
A survey of the history of graphic design from the Graphic Renaissance to the Digital Age. Special attention will be paid to how this history both reflects and influences our society and culture. Lectures, slides and texts will be used in the exploration of each of the following periods: Graphic Renaissance, The Industrial Revolution, Mid-Century Modern, Late-Modernism, Post-Modernism, and the Digital Age.
Credits:

VIS 214 Figure Drawing I
Introduce design and illustration students to the basic concepts of drawing the human figure from life. Two thirds of the semester will be devoted to drawing the nude model in the studio, while one third of the course will be devoted to drawing the clothed figure in the studio. Prerequisite(s): VIS 120
Credits:

VIS 215 Introduction to Animation
The course will provide an exploration of animation techniques and applications from early development through digital media. Students will study selected traditional and electronic animation techniques from storyboard through the final animated production. The course will concentrate on storytelling using different animation methods in a digital environment.
Course Offered: Spring
Credits:

VIS 216 Painting I
This course will introduce students to the basic principles of painting. All students will work in the medium of oil paint. Because drawing is the basis of all visual means of expression, this course will incorporate an analytical approach to seeing and drawing from life and will quickly progress to working with paint. This course will be conducted through lectures, demonstrations, critiques and predominantly through the interaction between instructor and student. Each student will be asked to complete approximately seven paintings by the end of the semester.
Course Offered: Fall, Spring
Credits:

VIS 217 Introduction to Printmaking
This mixed–media course introduces the student to the basic fundamentals and concepts of non-toxic printmaking: the development of an image on a printing plate, the transfer of the image to paper, edition printing, matting and presentation. Media will include photo and digital transfer, woodcut prints, silkscreen, intaglio, collagraphs and monoprints. Emphasis is placed on the student's exploration of this creative process to produce and develop exciting prints.
Course Offered: Spring
Credits:

VIS 222 Graphic Design I
The graphic designer conceives, plans, and executes a design that communicates a direct message to a specific audience. It is through a formal understanding of this design process that students learn to create successful designs. The general principles studied and practiced in this course are based on the integration of type and image to convey meaning. The student will begin the process of defining a personal design aesthetic and will work with a variety of traditional and digital media. Prerequisite(s): VIS 122
Course Offered: Fall, Spring
Credits:

VIS 225 Photography I
This course introduces photographic principles with the primary emphasis on the technical issues of photography in studio and natural lighting conditions. Students will learn the concepts and techniques for proper lighting, exposure, focus, depth-of-field, and creative composition. The methodology for the creation of compelling and original photographic images will be covered as it applies to graphic design projects. Image management software, archival storage solutions, and presentation techniques will be explored. Students must supply their own digital camera (see department web page for current specific equipment requirements). Prerequisite(s): VIS 112 and 116
Course Offered: Fall, Spring
Credits:

VIS 226 Design Production I
Design Production deals with how to professionally execute Graphic Design concepts. As designers we use a vast array of tools and technology and this course introduces students to the primary software used to create those designs. Students will utilize texts and online resources for software training and the instructor will provide additional training in realistic situations and troubleshooting the use of the software relative to specific tasks. Software will include solutions for vector illustration, bitmap image manipulation, layout and print production as they pertain to design decisions. This is not software training (menu by menu, feature by feature) rather it is a focus on the software in terms of the tasks that the student is likely to encounter in a real world print environment. Prerequisite(s): VIS 116
Course Offered: Fall, Spring
Credits:

VIS 228 Four-Dimensional Design
4 D (4-Dimensional) design will explore the process of designing user experiences that rely heavily on time, space and motion to communicate

an idea. In this course students will examine the increasingly important role time-based media plays in the world of graphic design. Applications may include web design, video, animation, storyboards and sequential narratives. Students will concentrate on using storytelling techniques and experiential structures to provide a viewer with an immersive experience. Prerequisite(s): VIS 116 and VIS 122
Course Offered: Fall, Spring
Credits:

VIS 232 Graphic Design II
Students will continue to explore the creative process that helps them communicate ideas and information to a target audience. The general principles studied and practiced in this course are based on the formal integration of type and image to convey meaning. A further refinement of the student's personal aesthetic will be encouraged. Graphic Design II will introduce higher level, theoretical ideas related to communication, design and cognitive theories. Students will work with a variety of traditional and digital media. Prerequisite(s): VIS 222
Course Offered: Fall, Spring
Credits:

VIS 234 Design Production II
Design Production II continues to deal with how to professionally execute Graphic Design concepts with more advanced ideas and technology. The primary software tools include advanced print, web, rich-media and interactive design, with more emphasis placed on web-oriented projects. Outside resources will be used for general software instruction. Classroom focus will be on the use of the best practices with emphasis on the use of the software in the production of real world projects and problems. Prerequisite(s): VIS 226
Course Offered: Fall, Spring
Credits:

VIS 236 Typography II
This course will offer the students the opportunity to refine their skills in typographic design and application using digital technology. Class discussions, projects and critiques will concentrate on the crucial role of typography and the relationship of type as image in contemporary graphic design. Students will learn advanced techniques and refine typographic design skills while exploring the many ways in which typography can be utilized to express the message of design. Prerequisite(s): VIS 222, VIS 226
Course Offered: Fall, Spring
Credits:

VIS 238 Illustration for Graphic Designers
An understanding of illustration can help graphic designers to create more conceptually powerful designs and to differentiate their work from the competition. This course will focus on sketching and drawing to facilitate the efficient communication of ideas from the initial thumbnail sketch through to a finished piece. Design projects will be solved through the integration of traditional design skills, with illustrations created in a variety of media. It will provide insight into the language and practice of illustration while offering graphic design students the opportunity to develop a personal approach to illustration that can become integral to their design work. Prerequisite(s): VIS 120 and 222
Course Offered: Fall, Spring
Credits:

VIS 240 Publication Design I
A survey of the concepts and applications of graphic design, typography and page layout as they pertain to publication design. This course is intended for students enrolled in the Professional Communications curriculum. Emphasis will be placed on effective communication, aesthetics, and conformity to corporate identity guidelines. Prerequisite(s): BCS 102
Credits:

VIS 242 Publication Design II
The continuing exploration of graphic design, typography and page layout as they pertain to publication design. This course is intended for students enrolled in the Professional Communications curriculum. Students will apply the concepts learned in prerequisite coursework to a variety of publication projects utilizing professional page layout software. Prerequisite(s): VIS 116
Course Offered: Fall, Spring
Credits:

VIS 250 Photography II
Students will continue to examine the concepts and techniques for proper lighting, exposure, focus, depth-of-field, and creative composition. Using electronic media, students explore the production and processing of digital image making and the application of studio techniques. Advanced technical skills for digital photography are covered to increase student awareness of photographic methods necessary for commercial communication, advertising, and photojournalism. Using digital photographic technologies, students experiment and further develop their understanding of the photograph as a vehicle for communicating ideas. Prerequisite(s): Department approval or VIS 225.
Course Offered: Fall, Spring
Credits:

VIS 252 Drawing and Painting Techniques
This course will offer an advanced study and exploration of painting and drawing techniques. Students will be expected to enter the course with a proficiency of drawing skills having completed Drawing I, Drawing II and Figure Drawing as prerequisites. Students will acquire a wide range of skills related to drawing and painting. Advanced techniques and media will enable students to attain a higher level of artistic self-expression. Prerequisite(s): VIS 120
Course Offered: Fall, Summer
Credits:

VIS 254 Package Design
This course applies the principles of graphic design, typography and three-dimensional design to the specialized area of package design. Students may design labels, boxes, containers and other types of consumer packaging materials, in addition to point-of-purchase displays. Factors influencing the designs will include manufacturing, printing, digital technology, consumer appeal and tampering and label regulations. Prerequisite(s): VIS 112, 122 and 210
Credits:

VIS 256 Foundations of Illustrations
Foundations of Illustration is a course which teaches the multiple stages of the creative process of picture making. Study will explore research of conceptual ideas to effectively precede the execution of a successful illustration. The formal issues of color, light, structure, space and composition are emphasized. Developing an illustration will entail the conceptual thought process to the visual execution of the idea. Preliminary drawings, reference material and photographic sources are combined to assist the student in creating illustrated work. Prerequisite(s): Department approval or VIS 214.
Credits:

VIS 260 Graphic Design for Non-Majors
Graphic Design for Non-Majors introduces the principles and processes of graphic design. Emphasis will be on conceptual development, organization of information and effective communication with the formal integration of type and imagery. Students will learn to think critically, make aesthetic judgments, and become familiar with a variety of tools and techniques used to produce work in the fields of design.
Course Offered: Spring
Credits:

VIS 265 Web Design for Non-Majors
Web design encompasses many different skills and disciplines in the production and maintenance of websites. This course will introduce students to the planning, designing and constructing of layouts in web development and interactive design for the internet and screen devices. Course content includes discussions of layout, composition, planning, constructing and maintaining a website.
Course Offered: Fall
Credits:

VIS 280 Introduction to Illustrator
Adobe Illustrator graphic design software is used by graphic designers, web designers, and artists to create vector drawings and imagery for use in different media and platforms. This course will introduce students to the creation of original vector images and artwork, and explore digital illustration techniques to create imagery for a variety of projects and products. These skills will enable the student to properly use the industry's premier vector drawing program. This course runs for five (5) weeks. Registration must be completed during normal registration period.
Credit:

VIS 281 Introduction to Photoshop
Adobe Photoshop is the industry standard photo editing software used by photographers, graphic and web designers, videographers, and artists to enhance and manipulate photos and create original digital artwork. This course will introduce students to the use of this software to create original artwork, edit, restore and retouch existing photography, correct and modify color and explore different digital image techniques to create composites and simulating a variety of special effects. This course runs for five (5) weeks. Registration must be completed during normal registration period.
Credit:

VIS 282 Photoshop for the Web
Adobe Photoshop is a powerful photo editing software package used by web designers to create original imagery and artwork for web sites and development. This course will further enhance students understanding of this software to create original artwork and prepare it for use on the Internet and screen devices. This course runs for five (5) weeks. Registration must be completed during normal registration period. Prerequisite(s): VIS 281
Credit:

VIS 283 Introduction to Dreamweaver
Adobe Dreamweaver is the industry-leading web authoring and editing software providing both visual and code-level capabilities for web development and design. This course will introduce students to the use of the fundamentals of Dreamweaver to create and manage web pages and fully functional web sites with an emphasis on best practices and current web standards. This course runs for five (5) weeks. Registration must be completed during normal registration period.
Credit:

VIS 284 Introduction to InDesign
Adobe InDesign is a design and layout program used to create publications for print, interactive pdf documents, digital magazines, and EPUBs. By combining text, imagery, and graphic elements created from a variety of sources InDesign allows you to create engaging layouts from single pages to multiple page documents and publications. In this introductory course, you will discover the flexibility and outstanding typography features of this program, work with color, imagery and graphics, and prepare professional-level publications for output for multiple platforms. This course runs for five (5) weeks. Registration must be completed during normal registration period.
Credit:

VIS 285 Basic HTML/CSS Graphic Design
Understanding the principles behind web design as expressed through HTML and CSS is a necessity for designers. Having an understanding of HTML/CSS translates to designs and interfaces that function well. This course will introduce the language, structure and semantic language of HTML and CSS. It will also include instruction on how to utilize and style text, images, forms, and layout. This course runs for five (5) weeks. Registration must be completed during normal registration period.
Credit:

VIS 312 Art and Creative Direction
The goal of the course will be to explore the skills and responsibilities demanded for a position as an Art Director or Creative Director as it pertains to working in advertising or editorial design. Students will explore different approaches to creative problem solving combining words and images resulting in strong conceptual work. Students will complete their designs toward a client presentation, and make critical decisions along the way on how the work would ultimately be produced. Prerequisite(s): VIS 222
Credits:

VIS 328 Industry Topics Seminar
Presented by instructors and guest lecturers in a seminar format that will integrate a series of relevant topics and issues that students will encounter in their career. The objective of this course is to provide varied perspectives and insights to supplement the learning experiences the students have encountered throughout the curriculum.
Credit:

VIS 332 Graphic Design III
Students will combine their knowledge of type and image, communication theories, problem solving techniques and conceptual skills developed in Graphic Design I and II to create integrated solutions to multi-part, sophisticated design and communication problems. Students will be introduced to Strategic Design concepts that help produce successful solutions to complex design problems. Prerequisite(s): VIS 232
Course Offered: Fall, Spring
Credits:

VIS 334 Design Production III
Design Production III, will be the culmination of the student's Design Production studies where tools and technology are utilized to professionally execute advanced design projects. Outside resources will be used for software training and classroom time will focus on software integration and workflow, advanced web concepts and execution of sophisticated communication concepts. The primary focus on software will continue to include both print and web, rich-media and interactive. Prerequisite(s): VIS 234
Course Offered: Fall, Spring
Credits:

VIS 336 Advertising I
Advertising is the art of persuasion and as designers we greatly influence the choices made by consumers. In this course students will learn the fundamental aspects of this significant field with an emphasis on the conceptual development, design methodology, creative writing and clear communication necessary to motivate the consumer to action. The basic principles of advertising will be presented, from creative writing to branding consistency and integrity. Graphic design skills in conjunction with these advertising essentials will be encouraged and expected. The hierarchy and structure of an advertising agency will be discussed to provide students with a realistic view of the industry. Prerequisite(s): VIS 232 and 234
Course Offered: Fall, Spring
Credits:

VIS 340 Industry Preparation
Students will explore and develop professional practices to gain future employment in the design field and attain professional success. While students will not be creating a portfolio in this class, they will be introduced to the varied options available for multifunctional portfolios and will choose which option would best promote their work. An emphasis will be placed on defining, organizing, and developing self-promotion, as well as marketing materials. It will also encompass job search strategies, interview skills, and industry best practices. Prerequisite(s): VIS 332 and 334 or IxD 320 and IxD 322
Course Offered: Fall, Spring
Credits:

VIS 346 Advertising II
This course builds upon the principles that were studied in Advertising I and allows for a more concentrated exploration into the myriad of ways to reach a consumer. This course encompasses conceptualization, design and production of actual advertising campaigns. Students will work individually and in teams to complete projects based on client direction and budget restrictions. Traditional and developing media venues will be considered with an emphasis on appropriate and unique creative solutions to advertising problems. Prerequisite(s): VIS 336
Course Offered: Fall, Spring
Credits:

VIS 353 Editorial Design
Emphasis in this class will be on the creation of multiple page documents for the editorial design market. Students will explore numerous avenues for editorial design including, magazine, catalog, newspaper and book design, while gaining the advanced software skills needed for the creation of these documents. Prerequisite(s): VIS 370
Credits:

VIS 354 Corporate Identity
This course will explore the visual components behind creating and establishing a corporate identity. Corporations require logos, signs and symbols as part of an elaborate identification system. Visual imagery related to the corporation projects a positive image and public perception of a corporation's identity. This class will explore creative solutions that define and present "corporate identity" through visual imagery. Prerequisite(s): VIS 222 and 230
Credits:

VIS 355 Advanced Package Design
The design of consumer product packaging must meet the complex and sometimes conflicting needs of manufacturers, distributors, retailers and

consumers. Building upon the fundamental package design concepts and problem-solving skills developed in prerequisite coursework, students will learn advanced techniques for the creation of sophisticated package designs through the use of both traditional and digital layout, typography, graphics, photography, as well as two-dimensional and three-dimensional design techniques. Prerequisite(s): VIS 254
Credits:

VIS 356 Internship I
A select number of students who meet specific standards will be given the special opportunity to intern at industry related companies and organizations. Students will adhere to strict guidelines completing their internship in a professional environment. Students will gain valuable knowledge and typically improve their technical skills. Prerequisite(s): Completion of 60 credits with a GPA of 3.0 in the Visual Communications curriculum and department approval required.
Course Offered: Fall, Spring, Summer
Credits:

VIS 357 Internship II
This special elective, available to individually selected students, offers an additional education/work combination that provides valuable professional experience within the art field. This is a unique opportunity to gain knowledge that may not otherwise be attainable within a traditional educational setting. Prerequisite(s): Department approval.
Course Offered: Fall, Spring, Summer
Credits:

VIS 371 Animation
An exploration of animation techniques and applications from early development to current works and future trends. Students will study selected traditional and electronic animation sequences from the initial storyboard stage through the finished production. The emphasis of this course will be on computer animation with application to interactive presentation, CD-ROMs and the Internet. Prerequisite(s): VIS 210 and 230
Credits:

VIS 373 Multi-Media
Students will learn to combine graphics, animated "gif" files, video and sound files to create linear and interactive presentations. Graphic design, typography, interface design and information organization will be emphasized. Prerequisite(s): VIS 310
Credits:

VIS 380 Illustrative Style I
Students explore new styles and media. Reference and support material coursework will be acquired though research of reading materials pertaining to illustration techniques. In and out of class research will be applied through recreating the process and procedures utilized by illustration professionals to solve specific problems. Prerequisite(s): VIS 252 or 256
Credits:

VIS 381 Figure Drawing II
A drawing class designed for the illustration track student that will expand on many of the concepts first introduced in the Figure Drawing I (VIS 214) class. A variety of mediums will be incorporated including pencil, charcoal, conte, ink pastel, among others. Prerequisite(s): VIS 214
Credits:

VIS 382 Illustrative Style II
Continue to encourage experimentation in solving pictorial problems. By semester's end, each student's goal will be to visually communicate with a consistent medium and personal style to their work. Prerequisite(s): VIS 380
Credits:

VIS 383 Sculpting and Painting the Figure
This course builds on the prerequisites VIS 214 and VIS 381. However, the medium of paint and clay are introduced into this class to expose the student to a new medium approach to representing the human figure. Approximately one-quarter of the class is devoted to three-dimensional representation of the figure through modeling the nude figure in clay. The remaining three-quarters of the class are devoted to the medium of painting the nude and clothed human figure. Prerequisite(s): VIS 214
Credits:

VIS 410 Digital Imaging II
This course will build upon prior knowledge and experience with digital images to help students broaden their understanding and creative use of digital imaging concepts and techniques. Topics will relate to graphic design, illustration, print production and web page design applications. Prerequisite(s): VIS 310
Credits:

VIS 412 Web Page Design
The theoretical and practical exploration of the fundamentals of two dimensional design, layout and typography as they pertain to web site design. Students will visit many different types and styles of web sites and learn to analyze them for creative design, organization of content, flow and navigation. By visiting and discussing sites that are well-designed as well as those that are poorly designed, students will themselves become better web site designers. Prerequisite(s): VIS 150 or 210 and VIS 310
Credits:

VIS 414 Interaction Design
Interaction Design is an advanced course that pushes students understanding of web page creation to include the methodologies, concepts and strategy of designing user experiences. Interaction Design will stress the planning, design, and production of effective user interface design, information design and information architecture based upon web standards and best practices. The course will also introduce the student to advanced web creation tools including the design for specific digital devices. Students will produce a variety of concepts-from rough pencil sketches to digital prototypes-in a rigorous environment. Prerequisite(s): VIS 332, 334 both with a Grade of C+ or higher
Course Offered: Fall, Spring
Credits:

VIS 416 Senior Project I
The Senior Project I class is the capstone of the Visual Communications baccalaureate experience. In this course students will be developing and defining their own voice in both written and visual form. Students will begin to develop a self-directed project that will culminate in Senior Project II, VIS 426, with a book, portfolio and exhibition. The individual creative process will be encouraged through research, experimentation, writing and critique. Prerequisite(s): VIS 414 with a grade of C+ or better
Course Offered: Fall, Spring
Credits:

VIS 418 Portfolio
The Portfolio class is one of the capstone courses of the Visual Communications baccalaureate experience. In this final semester students will produce a series of professional quality works of art, which will be displayed in a senior exhibition and portfolio. A series of group critiques with both internal and external reviewers will aid in the development of this body of work as well as strengthen the students' ability to professionally present and defend their artwork. Prerequisite(s): VIS 416 with a grade of C+ or higher Corequisite(s): VIS 426
Course Offered: Fall, Spring
Credits:

VIS 426 Senior Project II
The Senior Project II class is one of the capstone courses of the Visual Communications baccalaureate experience. In this final semester students will produce a series of professional quality works of art, which will be displayed in a senior exhibition and book. A series of group critiques with both internal and external reviewers will aid in the development of this body of work as well as strengthen the students' ability to professionally present and defend their artwork. Prerequisite(s): VIS 416 Corequisite(s): VIS 418
Course Offered: Fall, Spring
Credits:

VIS 474 Agency I
In this course, students will gain valuable experience by working on actual projects for selected not-for-profit clients. This pro-bono work will provide students the opportunity to develop professional quality samples for their portfolios, while further developing skills in design, production, presentation and job-tracking. Interpersonal and communication skills within a corporate environment will be emphasized. Enrollment in this course requires portfolio review by a faculty committee. Prerequisite(s): VIS 372
Course Offered: Fall
Credits:

VIS 476 Agency II
As a continuation of Agency I, this course will enable students to follow through on long-term or large projects to completion. Students will continue to gain valuable experience by working on actual projects for selected not-for-profit clients. Enrollment in this course requires a portfolio review by a faculty committee. Prerequisite(s): VIS 372
Course Offered: Spring
Credits:

VIS 484 Illustration Portfolio I
In this course, students will use all the technical skills, conceptual abilities and general knowledge accumulated throughout their illustration education, to develop their illustration portfolios. Presentation, marketing and business issues facing today's illustrator will be discussed. Prerequisite(s): VIS 382
Credits:

VIS 485 Illustration Portfolio II
Techniques for illustrating ideas, concepts or emotions. Elicit a personal, creative interpretation of words and ideas from literature, music, film and editorial text. The goal will be to transform one form of art into another, from verbal to visual. Selection of the most appropriate medium and style to make text and art come together for a highly effective interpretation. Prerequisite(s): VIS 382
Credits:

VIS 487 Drawing and Painting Studio
A class designed for Senior Illustration students. A series of specific advanced projects will be assigned in order for the Senior Illustration student to produce a portfolio of high quality works which display an acute awareness of contemporary trends.
Credits:

WIND TURBINE TECHNOLOGY (WTT)

WTT 101 Introduction to Wind Energy and Turbine Technology
This course introduces students to the fundamentals of wind turbine mechanical systems, including wind energy potential and application to power generation. Topics include wind energy principles, wind site assessment, wind turbine components, power generation machinery, control systems, connection to the electric grid, and maintenance. Laboratory assignments will reinforce the topics covered by theory through relevant experiments performed by the students. Corequisite(s): MTH 129, WTT 101L
Credits:

WTT 301 Wind Turbine Mechanical Systems
This course provides students with an in-depth knowledge of wind turbine mechanical systems. The course covers types of industrial fasteners, crane and rigging, power transmission systems, and rotating equipment that are utilized in wind turbines. Laboratory assignments will reinforce the topics covered by theory through relevant experiments performed by the students. Prerequisite(s): WTT 101 Corequisite(s): WTT 301L
Credits:

WTT 307 Principles of Fluid Systems
This course covers the fundamentals and basic principles of fluid (hydraulic) power systems and their control circuits. Hydraulic components such as directional control valves, flow control valves, and pressure control valves will be covered. Accumulators, linear/rotary actuators and hydraulic pumps will be discussed along with practical applications and examples related to Wind Energy technology. Student will also acquire knowledge to read and draw hydraulic circuit schematics. Additionally a simulation software will be introduced to complement laboratory activities and examine hydraulic circuits. Prerequisite(s): EET 104 Corequisite(s): WTT 307L
Credits:

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Admissions

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General Admission Procedures

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Transfer Students

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PROGRAM LIST

Dental Hygiene

Associate in Applied Science Degree

The dental hygiene program prepares students for licensure and entry into the profession of dental hygiene, as well as certification in the administration of local infiltration anesthesia/nitrous oxide analgesia. The program in dental hygiene is accredited by the Commission on Dental Accreditation and is granted the accreditation status of "Approval without Reporting Requirements." The program will be reviewed again at the next scheduled site visit in 2022. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is: www.ada.org/coda. Graduates receive an Associate in Applied Science degree and are eligible to sit for the National Board Examination in Dental Hygiene, as well as State and Regional Practical Board Examinations for dental hygienists.

As the need for dental hygiene care continues to grow in the Nation, many new and varied opportunities are available for graduates in a wide array of work settings. Although the clinical role is most closely associated with dental hygiene, it is only one of six roles officially designated for the hygienist, which include educator, researcher, administrator, change agent, and consumer advocate. Although special emphasis is placed on educating the clinical hygienist, all the roles are incorporated into the theoretical framework and practical experiences of the curriculum. The program provides general education, as well as specialized courses in the biomedical and oral sciences.

Students perform a variety of comprehensive services at the College's technologically advanced Dental Hygiene Care Center. Among these services are thorough assessment of oral conditions, non-surgical periodontal therapy (scaling and root planing of teeth), exposing, processing and interpreting oral x-rays, patient education and nutritional counseling.

The Dental Hygiene Care Center is in compliance with all Occupational and Safety Health Administration (OSHA)/Infection Control regulations regarding infectious diseases and bloodborne pathogens.

As a condition for acceptance into the dental hygiene program all applicants are required to submit evidence of satisfactory health. Evidence of immunization and adequate titers for measles, mumps, rubella and varicella must be provided. In addition, matriculated students will be required to take a yearly Mantoux test for tuberculosis. Students are strongly urged to submit evidence of immunization and titer for Hepatitis B. It is recommended that students who test negatively for Hepatitis B receive the appropriate vaccine. Students who decline this recommendation will be required to sign a waiver of responsibility. All Dental Hygiene students are required to participate in the group liability policy, provided by the college, which will afford malpractice coverage during the time enrolled in the Dental Hygiene curriculum.

Individuals who have been found guilty, or pleaded guilty to a felony, may not be eligible for dental hygiene licensure. The State Certifying Board may

grant a waiver based upon mitigating circumstances. Contact NYS Office of the Professions for further information at www.op.nysed.gov.

Typical Employment Opportunities

Private Dental Offices
Geriatric Facilities
Public Health Agencies
Research Laboratories
School Health Services
Pharmaceutical Corporations
Private Care Center
Dental Supply Companies
Hospitals
Armed Forces
Insurance Companies
Managed Care Facilities

Dental Hygiene (AAS) Program Outcomes:

- Graduates will have the knowledge and skills necessary to provide comprehensive dental hygiene care to the general population including the adolescent, geriatric and special needs patient.
- Graduates will develop an expertise in the area of health promotion and disease prevention through assessment, planning, implementation and evaluation of community based oral health programs and effective interaction with diverse population groups.
- Graduates will develop a sense of professionalism as health care providers including self assessment, recognition and management of ethical, legal and regulatory issues, and evaluation of scientific literature as it relates to the profession of dental hygiene.

Special Opportunities

As a student in the Dental Hygiene Associate in Applied Science Degree Program you are eligible to participate in the Student American Dental Hygienists' Association (SADHA) which promotes student leadership through community outreach, lunch and learn programs and various campus activities.

Liberal Arts and Sciences	(20 credits)
*BIO 166 Anatomy & Physiology (GE)	4
BIO 220 Medical Microbiology	4
*EGL 101 Composition I: College Writing (GE)	3
PSY 101 Introduction to Psychology (GE)	3
SOC 122 Introductory Sociology or SOC 228 Society and Health (GE)	3
SPE 202 Interpersonal Communications (GE)	3

Required: Dental Hygiene	(50 credits)
DEN 102 Dental Materials & Expanded Functions	3
DEN 105 Dental & Oral Anatomy	3
DEN 106 Oral Radiology I	3
DEN 108 Oral Histology & Embryology	2
DEN 110 Preventive Oral Health Concepts I	2
DEN 115 Clinical Dental Hygiene I	3
DEN 126 Periodontology	2
DEN 201 Pain Management	2
DEN 203 Principles of Nutrition for Oral Health Professionals	2
DEN 205 Oral Pathology	3
DEN 207 Oral Radiology II	1
DEN 212 Pharmacology	2
DEN 220 Preventive Oral Health Concepts II	2
DEN 221W Community Oral Health I	2
DEN 222 Community Oral Health II	2
DEN 225 Clinical Dental Hygiene II	3
DEN 230 Preventive Oral Health Concepts III	2
DEN 235 Clinical Dental Hygiene III	4
DEN 240 Dental Practice Management, Ethics & Jurisprudence	2
DEN 245 Clinical Dental Hygiene IV	5
Total Credits:	**70**

Once a student has been admitted to DEN 105, courses must be completed in semester sequence, without interruption. Any student who misses a semester will not be permitted to continue in the program until approval has been obtained (if granted) from the Admissions and Academic Standards Committee of the Dental Hygiene Department. Students who have been given permission to continue in the program will be required to take the skills refresher course DEN 015. Procedural information may be obtained from the Department Chair of Dental Hygiene in Gleeson Hall.

Dental Hygiene Admission Requirements from High School:

High School Diploma or GED
Integrated Algebra and Geometry
Laboratory Biology
Laboratory Chemistry

* In addition to the high school requirements, applicants not applying directly from high school are required to complete the following courses prior to admission:

- EGL 101
- BIO 166

Degree Type: AAS
Total Required Credits: 70

Notes: The nature of this program will expose students to bodily fluids and blood borne pathogens. The Dental Hygiene Department adheres strictly to the Occupational and Safety Health Administration (OSHA) Guidelines for infectious disease control. Students must be certified in basic life support procedures prior to entering the clinical sequence. Students are required to provide their own transportation to off campus field experiences. For all field experiences, student dress must conform with field agency protocol. Students are required to purchase their own instruments and specific clinically related supplies. A grade of "C" (2.0) or better must be maintained in all courses with a DEN, BIO or CHM prefix. A failure in a clinically related area constitutes withdrawal from the Dental Hygiene curriculum. Students are also required to provide their own patients (approximately 8) for clinic during the second semester of the program. A TOEFL (Test of English as a Foreign Language) Examination with a minimum score of 550 (paper), 213 (computer), or 79 (internet) will be required as a condition for entrance into the Dental Hygiene program for: a) applicants who are foreign born high school seniors and have had ESL (English as a Second Language) courses in high school or b) applicants with secondary credentials from a foreign country whose language of instruction was not English, regardless of any coursework completed in the United States.

Science, Technology, & Society

Bachelor of Science Degree

The Science, Technology, & Society Bachelor of Science (BS) degree is a customizable interdisciplinary program that prepares students to confront complex issues and address emerging challenges which have arisen as a consequence of the interconnectedness of systems in the current era. Students in the Science, Technology, & Society program learn to apply methods of scientific thinking and integrative analysis to solve unstructured, real-world problems faced by individuals, organizations, industries, and societies in ways which cut across traditional boundaries of disciplinary thought.

Upon completing the degree, Science, Technology, & Society graduates will have obtained a broadly applicable set of high-value skills necessary to adapt and thrive in the ever changing workforce of the modern age. These skills are honed through upper-division courses in technical communication, data science, geographical information science, and organizational leadership. This STS skill-set is then applied in courses covering contemporary topics best addressed through a multi-perspective, interdisciplinary approach. Topics include the societal impact of technological change, environmental science, global affairs, and gender, race, and culture. The degree culminates in an applied learning capstone experience in which students can choose to enroll in a senior seminar or an internship relevant to their studies.

The Science, Technology, & Society curriculum is designed to develop within the students a problem solving skill-set defined by critical, integrative analysis. Such a skill-set will prepare students to engage head-on the challenges faced by future employers in the Long Island region and beyond. Further, the STS skill-set cultivates the intellectual agility required to succeed in the rapidly evolving professional landscape of the 21st century. By focusing on the interplay between science, technology, and social change, students graduate better equipped to anticipate emerging trends in the workforce and their impact on the future. The skills acquired in the Science, Technology, & Society program may be applied to a range of careers including those in the health professions, social welfare, science policy, and business.

Science, Technology, & Society (BS) Program Outcomes:

At the completion of any of the concentrations within the Science, Technology, & Society program:

- Graduates will be able to synthesize solutions to 21st century problems on the local and global scale through the utilization of scientific thinking and integrative analysis.
- Graduates will be able to critically assess issues relevant to the modern workforce and identify internal and external drivers of change.
- Graduates will demonstrate an ability to effectively communicate ideas of a technical nature and be able to appraise and anticipate their impact on society.
- Graduates will demonstrate an understanding of the methods by which data science and geographical information science can provide valuable insight when addressing modern problems.

Liberal Arts & Sciences	**(61-62 credits)**
Communications (GE—other than EGL 101)	3
Humanities (GE)	3
Arts (GE)	3
American History (GE), Other World Civilizations (GE), Western Civilizations (GE), Select 2	6
Mathematics (GE—110 or higher)	3
Foreign Language—Level I & II (GE)[1]	6
Social and Behavioral Sciences (GE)	3
Natural Science (GE)	4
Natural Science Elective/Lab	3-4
EGL 101—Composition I: College Writing	3
EGL 102—Composition II: Writing about Literature	3
Liberal Arts & Science Electives	21
Free Electives	**(15 credits)**
300+ Electives	**(15 credits)**
STS Technology Requirements	**(6 credits)**
STS 330 Scientific Thinking	3
STS 400W—STS Seminar or STS 401W—Internship[2]	3
STS Restricted Technical Electives (RTE)	**(24 credits)**
RTE Category 1: Technical & Scientific Communication	3
RTE Category 2: Data Science	3
RTE Category 3: Geographic Information Systems	3
RTE Category 4: Organizational Leadership	3
RTE Category 5: Impact of Technological Change	3
RTE Category 6: Energy, Environment and Sustainability	3
RTE Category 7: Global Connections	3
RTE Category 8: Gender, Race, and Culture	3

[2]A grade of C or higher is required in the Capstone Course (STS 400W or 401W)

All graduates must have 30 credits in residency and a total of 15 credits of Upper Division (300-level or higher) courses in residency.

A full list of STS Restricted Technical Electives is available in the department. The list below is a sample of just some of the RTE's available to take:

Technical & Scientific Communication
EGL 310 – Technical Writing (EGL 102)
PCM 324 – Report Writing and Technical Communication (UDS)
PCM 325 – Writing in Health and Disease (EGL 102)
SPE 330 – Professional and Tech. Speech (EGL 102)
SPE 331 – Advanced Oral Communications (EGL 102)
STS 300 – Science Communication (EGL 102, UDS)

Data Science
BUS 345 – Foundations of Business Analytics (BUS 240 or MTH 110)
PCM 315 – Research Techniques (UDS)
PSY 324 – Psychological Measurement and Assessment (PSY 101)
PSY 348 – Statistics for Psychologists (PSY 101, MTH 110)
SOC 366 – Sociological Research Methods (200–level SOC)

Geographical Information Science
GEO 323 – Urban Geography (100–level HIS/POL/GEO)
GIS 301 – GIScience (MTH 110)
GIS 302 – Remote Sensing (MTH 110 or above)
GIS 351 – GIS and Public Health (MTH 110 & UDS)

Organizational Leadership

BUS 311 – Organizational Behavior (BUS 109 or PSY 101)
PSY 311 – Organizational Behavior (BUS 109 or PSY 101)
PSY 331 – Industrial/Organizational Psychology (PSY 101)
SOC 303 – Sociology of Work and Occupation (SOC 122 & EGL 102)

Impact of Technological Change
ECO 358 – Economics of Labor (ECO 156 or 157)
PHI 307 – Philosophy of Sci. and Tech. (Nat. Sci & EGL 102)
HIS 320 – Europe Since the Industrial Revolution (100–level HIS)
POL 393 – Politics and Popular Culture (100–level HIS/POL)
STS 300 – New Paths for Cancer Research (EGL 102, UDS)
STS 310 – Surveillance Technology in Cinema (EGL 102, UDS)
STS 320 – Technology and Humanity in Cinema (EGL 102, UDS)

Energy, Environment, & Sustainability
BIO 355 – Ecological Topics: Struc./ Func. of Nature (BIO 131 or 192 or 198)
GEO 325 – Globalization and Sustainability (200–level HIS/POL/GEO)
GEO 330 –Environmental Interactions (200–level Soc. Sci)
STS 300 – Sustainable Food Systems (EGL 102, UDS)
STS 300 – Food and Nutrition Policy in the U.S. (EGL 102, UDS)

Global Connections
HIS 307 – Germany in the Modern Age (100–level HIS)
HIS 315 – Imperialism: A Modern History (100–level HIS)
POL 370 – International Relations (100–level HIS/POL)
POL 371 – Geopolitics (100–level HIS/POL)
SOC 350 – Global Social Change (SOC 122 & EGL 102)

Gender, Race, and Culture
HIS 322 – American History Through Film (HIS 121, HIS 122, or HIS 125)
HIS 335 – Gender and Technology (100–level HIS)
MLG 300 – International Cinema (EGL 102)
MLG 306 – Italian Culture and Civilization (EGL 102)
MLG 308 – Arabic Culture and Civilization (EGL 102)
MLG 311 – Italian American Experiences (EGL 102)
MLG 305 – Hisp. and Latin Am. Culture and Civilization (EGL 102)
MLG 313 – Sci, Lit, and Film in the Hispanic World (EGL 102)
MLG 317 –The Arab–American Experience (EGL 102)
MLG 321 – Chinese Culture and Civilization (EGL 102)
PCM 426 – Culture and Communication (any SOC course & EGL 102)
PSY 307 – Psychology of Women (PSY 101)
PSY 365 – Culture and Cognition (PSY 101)
SOC 325 – Social Inequality (200–level SOC course)

Degree Type: BS
Total Required Credits: 121-122

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Health Promotion and Wellness

Bachelor of Science Degree

The Bachelor of Science degree in Health Promotion and Wellness through the School of Health Sciences is ideal for students who want an interdisciplinary approach to helping others achieve healthy lifestyles. Students will develop a strong foundation in administrative and technical skills to successfully implement health promotion and wellness programs. The pursuit of wellness in all dimensions of life - social, physical, emotional, occupational, intellectual, environmental and spiritual - is emphasized throughout the curriculum.

Graduates from the BS in Health Promotion and Wellness will acquire leadership, management, and collaborative skills to apply a multidisciplinary approach to the health promotion planning process. Graduates can work in local, regional and national settings and are also prepared for graduate-level programs in numerous health-related areas.

Typical Employment Opportunities

- Public Health Educator
- Health Coach
- Corporate Wellness Coordinator
- Director of Fitness / Wellness
- Community Health Director
- Health Services Manager

Health Promotion and Wellness (BS) Program Outcomes:

- Graduates will use leadership, management, and collaborative skills to apply a multidisciplinary approach to the health promotion planning process through the incorporation of health enhancement interventions. (Professional/Leadership)
- Graduates will serve as a health promotion resource by effectively promoting or advocating for healthy lifestyles and the profession in oral and written form through any variety of sources. (Communication/Marketing)
- Graduates will apply knowledge and experience from course work in the arts, science, and humanities into the field of Health Promotion and Wellness. (Knowledge)
- Graduates will demonstrate proficiency at interpreting one-on-one and group health assessments to achieve improved quality of life for themselves and the people they educate. (Critical Thinking)

Liberal Arts and Sciences	**(50 credits)**
EGL 101 Composition I: College Writing (GE)	3
American/Western/Other World Civilizations (GE)	3
PSY 101 Introduction to Psychology (GE)	3
Foreign Language I (GE)	3
EGL 102 Composition II: Writing About Literature	3
SOC 122 Introductory Sociology (GE)	3
MTH 110 Statistics (GE)	3
BIO 125/NTR 110 Principles of Nutrition (GE)	3
BIO 123 Human Body in Health and Disease OR	
BIO 130 Biological Principles I OR	
BIO 166 Principles of Human Anatomy and Physiology	4
SOC 228 Society and Health	3
Humanities (GE)	3
CHM 124 Principles of Chemistry (GE)	4
Arts Elective (GE)	3
Liberal Arts and Sciences Electives	6
SPE 202 Interpersonal Communications OR	
SPE 330 Professional and Technical Speech	3

Required: Lower Division	**(25 credits)**
HPW 101 Perspectives of Health and Wellness	3
PSY 240 Health Psychology	3
HPW 200 Lifespan Health and Wellness	3

BUS 131 Marketing Principles OR	
ECO 156 Principles of Economics (Macroeconomics) OR	
SMT 225 Sport Marketing	3
Technical Elective I	3
BIO 220 Medical Microbiology	4
BIO 240 Bioethics	3
HPW 225 Fitness Health and Coaching	3

Required: Upper Division	**(49 credits)**
HPW 300 Evaluation of Health Promotion	3
HPW 325 Mental Health Wellness	3
NTR 305 Weight Management & Obesity	3
NTR 365 Sports Nutrition	3
HPW 330 Concepts in Public Health	3
HPW 400 Community Health	3
HPW 410 Seminar in Health Promotion	3
HPW 420 Addictive Behaviors	3
SOC 303 Sociology of Work and Occupations	3
HPW 425 Sport & Exercise Physiology	3
HPW 430 Research Methods in Health Sciences	3
HPW 435 Health Care Administration	3
HPW 440 Holistic & Integrative Health	3
HPW 405 Exercise Science (w/lab) OR	
HPW 450 Health & Wellness Internship	4
HPW 470 Healthy America	3
Technical Elective II	3

Total Credits	**124**

Degree Type: BS
Total Required Credits: 124

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Technical Elective I

BUS 109 Management Theories & Practices

SMT 110 Introduction to Sport Management

Technical Elective II

PSY 315 Abnormal Psychology

SOC 309 Sport in Society

SOC 350 Global Social Change

SOC 360 Sociology Theory

SOC 366 Sociological Research Methods

Management Certificate

Certificates in Business Management are offered in Accounting, Marketing, Management and International Business. Certificates are designed to provide a general exposure to a field for students not seeking a degree.

***Gainful Employment Mandatory Disclosure Statement**

BUS 101 Accounting I	3
BUS 102 Accounting II	3
BUS 109 Management Theory and Practices	3
BUS 111 Introduction to Business	3
BUS 131 Marketing Principles	3
BUS 141 Business Communications	3
BUS 266 Personnel/Human Resources Management	3
BUS 301 Corporate Finance	3

Four additional courses (12 credits) in Business

Total Required Credits: 36

Notes: 1. Students planning to pursue a degree program after completing the certificate program are urged to select elective courses applicable to the degree program.

Required:	
AVN 104 Private Pilot Ground	3
AVN 105 Private Pilot – Flight to Solo	1
AVN 106 Private Pilot – Flight to Certificate	1
AVN 201 Safety Ethics	3
AVN 202 Aviation Meteorology	3
AVN 321 Physiology of Flight	3
Aviation Elective (200 level or above)	3

Nursing

Bachelor of Science Degree

The Nursing program prepares students for entry into the profession of Nursing. Upon graduation, students receive the Bachelor of Science degree with a major in Nursing and are eligible to take the National Council of State Board Licensing Exam for RNs (NCLEX-RN).

The curriculum will prepare graduates to provide professional nursing skills to individuals, families and groups in a variety of structured and unstructured healthcare settings, as well as the leadership skills needed to supervise nursing care delivered in community settings. The curriculum offers a balance of courses in general education and nursing. The students are provided with the theoretical knowledge and clinical practice needed

to administer care for individuals throughout the life cycle. Graduates are prepared as beginning practitioners to help address the regional need for nurses. Learning experiences take place in the classroom, College nursing laboratory and in a variety of clinical settings. All students are assisted in the development of their potential with guidance offered by faculty who possess broad nursing experience and academic preparation in the field. Students participate in the Student Nurse Association and have opportunities to volunteer through the Department's Student Nurse Civic Engagement Program.

Advanced Standing status is available.

(All applications submitted for the program by December 15 receive equal consideration.)

The baccalaureate degree in nursing programs at Farmingdale State College, SUNY is accredited by the Commission on Collegiate Nursing Education (CCNE). CCNE is located at 655 K Street NW, Suite 750, Washington DC 20001; phone 202-887-6791 and registered and accredited by the New York State Education Department Office of the Professions.

Typical Employment Opportunities

First level nursing positions in hospitals, home health agencies, long-term facilities, and primary and preventive care throughout the community.

Nursing (BS) Program Goals:

- Contribute to meeting current and future health care needs of diverse populations of the region by educating students to provide safe, evidence-based, and patient-centered professional nursing services that reflect ethical clinical judgment and interprofessional collaboration in varied settings.
- Provide a quality program in nursing education including, activities, and service programs that are supportive of the learning needs of diverse students so that they may accomplish their educational goals and encourage lifelong learning.
- Use health care technologies, information systems, and technological innovations to create stimulating environments that support and enrich learning and prepare graduates for changes in the health care environment.
- Provide an environment that supports academic and teaching excellence, scholarly activities, and opportunities for leadership and contributions to the nursing profession.
- Educate students to become self-aware, ethical, caring, collaborative, and clinically and culturally competent practitioners prepared to engage in nursing as caregivers and leaders.

Nursing (BS) Program Outcomes:

At the completion of the BS nursing program, graduates will:

- Synthesize knowledge from liberal arts and sciences, humanities and nursing to provide holistic and patient centered care that promotes empowerment and optimal well-being of individuals, families and communities.
- Practice professional nursing incorporating caring, respect, diversity, integrity, ethics, and the influences of human responses on illness, suffering and healing to assist individuals, families and communities to achieve maximal fulfillment.
- Demonstrate knowledge, critical thinking, and evidence-based clinical judgments to provide therapeutic nursing care interventions for patients throughout the lifespan, for families and communities with multiple and complex health stressors in a variety of settings.
- Use effective communication to collaborate with patients, colleagues, and members of the interprofessional health team to improve health care outcomes for patients, families and communities.
- Incorporate principles of safety, health information technology, organizational and health care systems theory, quality improvement, and political trends in the provision of high quality and safe patient care.
- Express an identity of self as a bachelor prepared nurse and exhibit professional values and behaviors as described by ethical, legal, and professional standards of practice.
- Apply leadership, advocacy, and management strategies in multiple settings to advocate for high quality, safe, accessible, and fiscally responsible healthcare.
- Participate in activities that contribute to advancement of the profession including developing autonomy, advocacy, activism, change, and responsible citizenship.
- Integrate evidence-based findings, research, and nursing theory in decision making in nursing practice.
- Engage in self-reflection and life-long learning to maintain competence as a member of the profession and to achieve personal goals for professional development.

Curriculum Patterns

- BS Nursing Prelicensure BS 4 Year Program
- BS Advance Standing 3 Year BS Program

Liberal Arts and Sciences	(60 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
BIO 170 Human Anatomy and Physiology I (GE)	4
BIO 171 Human Anatomy and Physiology II (GE)	4
BIO 220 Medical Microbiology	4
BIO 240 Bioethics	3
American/Other World/Western Civilization History (GE)	3
MTH 110 Statistics (GE)	3
Foreign Language – Level II (GE)	3
PSY 101 Introduction to Psychology (GE)	3
PSY 232 Child Development	3
SOC 228 Society and Health	3
SPE 202 Interpersonal Communications (GE)	3
The Arts (GE)	3
Humanities (GE)	3
Liberal Arts Elective	12

Required: Nursing	(66 credits)
NUR 100 Health Assessment	3
NUR 114 Clinical and Theoretical Foundations of Baccalaureate Nursing Practice	7
NUR 215W Developing Nurses' Ways of Knowing	3
NUR 216 The Art of Nursing	2
NUR 217 Care of Individuals Experiencing Acute Health Changes	6
NUR 302 Pathophysiology	3
NUR 305 Health Promotion and Patient Education	3
NUR 306 Care of Individuals Experiencing Chronic Health Challenges	6
NUR 307 Nursing Care of Children and the Child Bearing Family	6

NUR 311 Clinical Pharmacology for Nursing	3
NUR 401 Modes of Inquiry	3
NUR 402 Community and Mental Health Nursing	6
NUR 404 Nurse as Advocate and Change Agent	3
NUR 405 Nursing Practicum	9
HST 301 Healthcare Organization	3

Total Credits:	**126**

To continue in the nursing program a grade of C+ or better must be maintained in all nursing courses. A grade of B or better is required in BIO 170 and BIO 171, and a C is required in BIO 220 to remain in the nursing program.

Degree Type: BS
Total Required Credits: 126

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Nursing RN to BS Completion - Online

Bachelor of Science Degree

The Nursing RN to BS Completion Program will prepare licensed registered nurses to provide professional nursing skills to individuals, families and groups in a variety of structured and unstructured healthcare settings, as well as the leadership skills needed to supervise nursing care delivered in acute and community settings. The curriculum offers a balance of courses in general education and nursing. Students are provided with the theoretical knowledge and clinical practice needed to administer care for individuals throughout the life cycle. Learning experiences take place in the online environment and a variety of clinical settings. All students are assisted in the development of their potential with guidance offered by faculty who possess broad nursing experience and academic preparation in the field.

Baccalaureate prepared nurses are equipped with the knowledge, skills, and attitudes to meet complex health care challenges. Building on initial nursing preparation, the RN to BS Completion program will prepare graduates for a broader scope of practice, enhanced professional development, and better understanding social, economic, cultural, and political issues that affect health care delivery. Inclusion of leadership and public and community health concepts foster stronger clinical reasoning and analytic skills which promote career advancement.

The baccalaureate degree in nursing programs at Farmingdale State College, SUNY is accredited by the Commission on Collegiate Nursing Education (CCNE). CCNE is located at 655 K Street NW, Suite 750, Washington DC 20001; phone 202-887-6791 and registered and accredited by the New York State Education Department Office of the Professions.

Typical Employment Opportunities

Registered nurses with a Bachelor degree are prepared to assume leadership responsibilities in the roles of provider of care, manager of care, and member of the profession.

Nursing RN to BS Completion Program Goals:

Contribute to meeting current and future health care needs of diverse populations of the region by educating students to provide safe, evidence-based, and patient-centered professional nursing services that reflect ethical clinical judgment and interprofessional collaboration in varied settings.

Provide a quality program in nursing education including, activities, and service programs that are supportive of the learning needs of diverse students so that they may accomplish their educational goals and encourage lifelong learning.

Use health care technologies, information systems, and technological innovations to create stimulating environments that support and enrich learning and prepare graduates for changes in the health care environment.

Provide an environment that supports academic and teaching excellence, scholarly activities, and opportunities for leadership and contributions to the nursing profession.

Educate students to become self-aware, ethical, caring, collaborative, and clinically and culturally competent practitioners prepared to engage in nursing as caregivers and leaders.

Nursing RN to BS Completion Program Outcomes:

At the completion of the RN to BS Completion Program, graduates will:

- Synthesize knowledge from liberal arts and sciences, humanities and nursing to provide holistic and patient centered care that promotes empowerment and optimal well-being of individuals, families and communities.
- Practice professional nursing incorporating caring, respect, diversity, integrity, ethics, and the influences of human responses on illness, suffering and healing to assist individuals, families and communities to achieve maximal fulfillment.
- Demonstrate knowledge, critical thinking, and evidence-based clinical judgments to provide therapeutic nursing care interventions for patients throughout the lifespan, for families and communities with multiple and complex health stressors in a variety of settings.
- Use effective communication to collaborate with patients, colleagues, and members of the interprofessional health team to improve health care outcomes for patients, families and communities.
- Incorporate principles of safety, health information technology, organizational and health care systems theory, quality improvement, and political trends in the provision of high quality and safe patient care.
- Express an identity of self as a bachelor prepared nurse and exhibit professional values and behaviors as described by ethical, legal, and professional standards of practice.
- Apply leadership, advocacy, and management strategies in multiple settings to advocate for high quality, safe, accessible, and fiscally responsible healthcare.
- Participate in activities that contribute to advancement of the profession including developing autonomy, advocacy, activism, change, and responsible citizenship.
- Integrate evidence-based findings, research, and nursing theory in decision making in nursing practice.
- Engage in self-reflection and life-long learning to maintain competence as a member of the profession and to achieve personal goals for professional development.

Curriculum Pattern

- Online RN to BS Completion

Liberal Arts and Sciences	(60 credits)
EGL 101 Composition I: College Writing	3
EGL 102 Composition II: Writing About Literature	3
BIO 170 Human Anatomy and Physiology I (GE)	4
BIO 171 Human Anatomy and Physiology II (GE)	4
BIO 220 Medical Microbiology	4
BIO 240 Bioethics	3
American/Western/Other World Civilizations (GE)	3
MTH 110 Statistics (GE)	3
Foreign Language - Level II (GE)	3

PSY 101 Introduction to Psychology	3
PSY 232 Child Development	3
SOC 228 Society and Health	3
SPE 202 Interpersonal Communications (GE)	3
The Arts (GE)	3
Humanities (GE)	3
Liberal Arts & Sciences Electives	12

Required: Nursing	**(60 credits)**
NUR 215W Developing Nurses' Ways of Knowing	3
NUR 216 The Art of Nursing	2
NUR 301 Caring for Populations in the Community Setting	4
NUR 305 Health Promotion and Patient Education	3
NUR 401 Modes of Inquiry	3
NUR 404 Nurse as Advocate and Change Agent	3
NUR 406 Senior Leadership Practicum	5
HST 301 Healthcare Organization	3
Nursing Transfer Credits	34

Total Credits	**120**

Degree Type: BS
Total Required Credits: 120

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes:

Applied Economics

Bachelor of Science Degree

The Bachelor of Science program in Applied Economics is a comprehensive course of study that prepares students for careers in business, financial institutions, national, state, and local government, public and private research organizations and nonprofit organizations. Consistent with the mission of the College, the program trains students to be real-life problem solvers so that upon graduation they are ready to be employed in entry and junior-level positions in business and industry, the public sector, and non-profit sector.

Graduates will have the skills and abilities to meet the diverse needs of regional, national, and international employers in both the private and public sectors, working in occupations such as entry-level economist, quantitative analyst, business analyst, financial analyst, regional planner, manager, and research analyst. The program exposes students to a broad spectrum of economic concepts and applications, providing them with a strong background from which to pursue graduate study in economics and the social sciences, business and finance, law, public administration, journalism, and education.

Students must complete 60 hours in the liberal arts (inclusive of the general education core). In their first two years of the program, students will complete their general education requirements including mathematics, the two introductory courses in economics, and begin to take courses in the economics core.

The program culminates with a capstone course sequence of Economics Research and Reporting followed by Applied Economic Analysis/Senior Project. In the first course, students receive extensive instruction in the methods and techniques of economic research and report writing, including data and statistical analysis, and the generation and presentation of reports for the general public. Students, in Applied Economic Analysis/Senior Project are asked to undertake, complete, and present the results of an applied research project.

Typical Employment Opportunities:

Market Research Analysts
Quantitative Analysts for National, State, Local Governments
Financial Analysts for Banks and Other Financial Institutions
Budget Analysts
Insurance Agent
Data Analysts

Applied Economics (BS) Program Outcomes:

- Graduates will be able to understand basic economics principles, important economic issues, and major economic institutions.
- Graduates will be able to comprehend economic concepts and analytical techniques and apply them to a wide variety of economic issues and problems of the U.S. and world economies.
- Graduates will be trained to read and understand economic literature.
- Graduates will have the opportunity to compile and analyze complex economics data to address real-life economics issues.
- Graduates will be trained to write economics reports and present economic analysis in comprehendible terms.

Liberal Arts and Sciences	**(36 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Speech (any SPE Course) (GE)	3
Humanities (GE)	3
The Arts (GE)	3
American/ Other World / Western Civilization (GE)	6
Foreign Language (GE)	3
ECO 156 Principles of Economics - Macro (GE)	3
ECO 157 Principles of Economics - Micro (GE)	3
Natural Science (GE)	3
MTH 110 Statistics (GE)	3
Additional Required Courses	**(10 credits)**
MTH 129 Precalculus or MTH 117 Precalculus with Applications	4
Social Sciences Electives (ANT, POL, PSY, SOC)	6
Required: Economics	**(33 credits)**
ECO 250 Quantitative Analysis for Economics	3
ECO 260 Intermediate Microeconomics OR ECO 262 Managerial Economics	3

ECO 270 Intermediate Macroeconomics OR ECO 255 Money and Banking	3
ECO 380 Econometrics	3
ECO 490W Economic Research and Reporting	3
ECO 491 Applied Economic Analysis /Senior Project	3
Upper level Economics Electives (300 level and above)	15
Additional Electives	**(41 credits)**
Additional free electives	41
Total Credits:	**120**

Degree Type: BS
Total Required Credits: 120

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

1. Students must take at least two 400 level Economics electives 2. Students must receive a grade of C or better in required core courses.

Computer Information Systems Certificate

A Certificate program in Computer Information Systems is available for those students who do not wish to work toward a degree. The following is a list of courses which a student must take in order to be eligible for the Certificate. Students with experience in the computer field may be excused from specific required courses, but will have to take replacement courses in their stead.

***Gainful Employment Mandatory Disclosure Statement**

BCS 120 Foundations of Computer Programming I	3
BCS 160 Computers, Society, and Technology	3
BCS 215 UNIX Operating System	3
BCS 230 Foundations of Computer Programming II	3
BCS 260 Data Base	3
BCS 262 Data Communications	3
BCS 300 Management Information Systems	3
BCS 301 Systems Analysis and Design	3
BCS/BUS elective	3
BUS 109 Management Theories and Practices	3
BUS 101 Accounting I	3

Total Required Credits: 33

Dental Hygiene

Bachelor of Science Degree

The Bachelor of Science in Dental Hygiene program prepares students for licensure and entry into the profession of dental hygiene, as well as certification in the administration of local infiltration anesthesia/nitrous oxide analgesia. This optional BS program will offer students a broad foundation of knowledge that will prepare them for the emerging roles within oral healthcare. The optional BS program in Dental Hygiene is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of "Approval without Reporting Requirements." Since the optional BS program is a new program at Farmingdale State College, the Commission on Dental Accreditation will review this program at the next accreditation site visit scheduled for 2022. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is: www.ada.org/coda. Graduates receive a Bachelor of Science degree and are eligible to sit for the National Dental Hygiene Board Examination, as well as State and Regional Practical Board Examinations for dental hygienists.

As the dental hygiene profession continues to expand, career opportunities beyond clinical practice will require a higher level credential such as a bachelor's degree. Emphasis is placed on broadening the career paths for practicing hygienists. Foundation courses are in the areas of teaching, research and public health with an emphasis on service learning and inter-professional collaboration. Although the clinical role is most closely connected with dental hygiene, it is only one of six roles formally designated for the hygienist, which include educator, researcher, administrator, change agent, and consumer advocate. The Bachelor of Science Degree in Dental Hygiene is designed to provide comprehensive upper-level studies that will prepare dental hygienists to adapt to the emerging new roles in oral healthcare. All aspects of dental hygiene are incorporated into the theoretical framework and practical experiences of the curriculum. The program includes general education as well as specialized coursework in the biomedical and oral sciences.

Students perform a variety of comprehensive services at the College's technologically advanced Dental Hygiene Care Center. Among these services are thorough assessment of oral conditions, non-surgical periodontal therapy (scaling and root planing of teeth), exposing, processing and interpreting oral x-rays, patient education and nutritional counseling. In addition students in the Bachelor curriculum will participate in a number of off campus clinical rotations in hospital settings.

The Dental Hygiene Care Center is in compliance with all Occupational and Safety Health Administration (OSHA)/Infection Control regulations regarding infectious diseases and bloodborne pathogens.

As a condition for acceptance into the dental hygiene program all applicants are required to submit evidence of satisfactory health. Evidence of immunization and adequate titers for measles, mumps, rubella and varicella must be provided. In addition, matriculated students will be required to take a yearly Mantoux test for tuberculosis. Students are strongly urged to submit evidence of immunization and titer for Hepatitis B. It is recommended that students who test negatively for Hepatitis B receive the appropriate vaccine. Students who decline this recommendation will be required to sign a waiver of responsibility. All Dental Hygiene students are required to participate in the group liability policy, provided by the college, which will afford malpractice coverage during the time enrolled in the dental hygiene curriculum.

Individuals who have been found guilty, or pleaded guilty to a felony, may not be eligible for dental hygiene licensure. The State Certifying Board may grant a waiver based upon mitigating circumstances. Contact NYS Office of the Professions for further information at www.op.nysed.gov.

Typical Employment Opportunities

Private Dental Offices
Geriatric Facilities
Public Health Agencies
Research Laboratories
School Health Services
Pharmaceutical Corporations
Private Care Center
Dental Supply Companies
Hospitals
Armed Forces
Insurance Companies
Managed Care Facilities

Dental Hygiene (BS) Program Outcomes:

- Graduates will have the knowledge and skills necessary to provide comprehensive dental hygiene care to the general population including the adolescent, geriatric and special needs patient.
- Graduates will develop an expertise in the area of health promotion and disease prevention through assessment, planning, implementation and evaluation of community based oral health programs and effective interaction with diverse population groups.
- Graduates will understand the role of leadership, management, and technology as it applies to dental hygiene practice.
- Graduates will develop the skills necessary to analyze and apply scientific literature in the dental hygiene process of care.
- Graduates will demonstrate an understanding of the learning process, various teaching methodologies and evaluation techniques as they apply to the dental hygiene educator.
- Graduates will utilize professional judgment and critical thinking skills for recognition and management of ethical, legal and regulatory issues.
- Graduates will develop a sense of professionalism as health care providers including self-assessment and will seek educational advancement for continued growth and development following commencement.

Special Opportunities

As a student in the Dental Hygiene Bachelor of Science Degree Program you are eligible to participate in the Student American Dental Hygienists' Association (SADHA) which promotes student leadership through community outreach, lunch and learn programs, and various campus activities.

Liberal Arts and Sciences	**(60 credits)**
BIO 166 Anatomy & Physiology (GE)	4
CHM 140 Intro to General, Organic & Biochemistry (GE)	4
BIO 220 Medical Microbiology	4
EGL 101 Composition I: College Writing	3
EGL 102 Composition II: Writing About Literature	3
MTH 110 Statistics (GE)	3
PSY 101 Introduction to Psychology (GE)	3
SOC 228 Society & Health	3
SPE 202 Interpersonal Communications (GE)	3
SPE 330 Professional and Technical Speech	3
American/Other World/Western Civilization History Elective (GE)	3
The Arts (GE)	3
Foreign Language Level I	3
Foreign Language Level II (GE)	3
Humanities (GE)	3
Upper Level Liberal Arts & Science Elective (300 level & above)	12

Required: Dental Hygiene	**(65 credits)**
DEN 102 Dental Materials & Expanded Functions	3
DEN 105 Dental & Oral Anatomy	3
DEN 106 Oral Radiology I	3
DEN 108 Oral Histology & Embryology	2
DEN 110 Preventive Oral Concepts I	2
DEN 115 Clinical Dental Hygiene I	3
DEN 126 Periodontology	2
DEN 203 Principles of Nutrition for Oral Health Professionals	2
DEN 205 Oral Pathology	3
DEN 207 Oral Radiology II	1
DEN 212 Pharmacology	2
DEN 220 Preventive Oral Health Concepts II	2
DEN 225 Clinical Dental Hygiene II	3
DEN 302 Principles of Dental Anesthesia	2
DEN 310 Teaching Strategies for Health Educators	3
DEN 322 Dental Public Health Planning	3
DEN 330 Essentials of Clinical Practice Theory	2
DEN 335 Essentials of Clinical Practice I	3
DEN 340 Dental Hygiene Law and Practice Management	2
DEN 345 Essentials of Clinical Practice II	3
DEN 401 Health Science Research Principles & Methods	3
DEN 406W Proposals & Grant Management for Health Programs	3
DEN 430 Senior Seminar I	1
DEN 435 Advanced Dental Hygiene Practice I	4
DEN 440 Senior Seminar II	1
DEN 445 Advanced Dental Hygiene Practice II	4

Total Credits	**125**

Degree Type: BS
Total Required Credits: 125

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes: Once a student has been admitted to DEN 105, courses must be completed in semester sequence, without interruption. Any student who misses a semester will not be permitted to continue in the program until approval has been obtained (if granted) from the Admissions and Academic Standards Committee of the Dental Hygiene Department. Students who

have been given permission to continue in the program will be required to take the skills refresher course DEN 015. Procedural information may be obtained from the Department Chair of Dental Hygiene in Gleeson Hall. 1. The nature of this program will expose students to bodily fluids and blood borne pathogens. The Dental Hygiene Department adheres strictly to the Occupational and Safety Health Administration (OSHA) Guidelines for infectious disease control. 2. Students must be certified in Basic Life Support for Health Care Providers prior to entering the clinical sequence 3. Students are required to provide their own transportation to off campus field experiences. For all field experiences, student dress must conform with field agency protocol. 4. Students are required to purchase their own instruments and specific clinically related supplies. 5. A grade of "C" (2.0) or better must be maintained in all courses with a DEN, BIO or CHM prefix. A failure in a clinically related area constitutes withdrawal from the Dental Hygiene curriculum. 6. Students are also required to provide their own patients (approximately 8) for clinic during the second semester of the program.

Dental Hygiene Admission Requirements from High School:

High School Diploma or GED
Integrated Algebra and Geometry
Laboratory Biology
Laboratory Chemistry

* In addition to the high school requirements, applicants not applying directly from high school are required to complete the following courses prior to admission:

- EGL 101
- BIO 166
- BIO 220

Required:

18 credits of History (HIS) courses; no more than 6 credits (2 courses) at the 100-level; at least 6 credits (2 courses) at the 300 level; at least 9 credits (3 courses) must be taken at Farmingdale.

In consultation with their advisor, students may apply up to-but no more than- 2 of the following courses to the History minor:

ANT 120 Archaeology	3
ANT 130 North American Indians	3
ANT 210 Modern Anthropology and Globalization	3
ARC 362 History Western Architecture	3
ART 123 Art History	3
ART 201 Survey of Art History: Prehistoric Times through The Middle Ages	3
ART 202 Survey of Art History: Early Renaissance to the Present	3
AVN 101 Aviation Industry: A History Perspective	3
AVN 401 Aviation Economics	3
BUS 350 American Business History	3
CRJ 100 Introduction to Criminal Justice	3
ECO 320 Internet and Network Economics	3
ECO 330 Modern Economic Thought	3
HIS 305 Culture and Technology in England	3
MLG 304 French Culture and Civilization	3
MLG 305 Hispanic and Latin American Culture and Civilization	3
MLG 306 Italian Culture and Civilization	3
MLG 308 Arabic Culture and Civilization	3
MLG 315 Art, Culture and Civilization of Spain	3
MTH 315 History of Mathematics (Writing Intensive)	3
MUS 108 Survey of Western Music	3
PHY 119 Physical Science: Technology	3
POL 263 American Foreign Relations	3
POL 267 Politics of the Muslim World	3
RAM 303 Research Experience	3
SOC 200 Introduction to Women's Studies	3
SOC 245 Technology, Society and Social Change	3
SOC 305 Culture and Technology	3
SOC 320 America: Dream and Reality	3
STS 400W Senior Seminar in Science, Technology and Society (Writing Intensive)	3

Software Technology

Bachelor of Science Degree

The Software Technology Program encompasses the technical and professional background needed to customize and apply industry standard software for a wide variety of functions in such industries as business, manufacturing, engineering, and service. As a project intensive and professional practice oriented program, it will focus on the skills and competencies needed to work with and apply the most prominent software in the global market. The program also includes provisions to gain computer hardware and networking skills to function as a computer networking technologist.

The program has been developed in compliance with the ETAC/ ABET accreditation criteria. As per the guidelines of the New York State Education Department, the name of the program will change to BS Software Engineering Technology immediately upon receiving ETAC/ABET accreditation.

Typical Employment Opportunities

Software Applications Engineer
Computer Network Technologist
CISCO Computer Network Technologist
SAP Applications Specialist for Materials Management/Supply Chain/Human Resource Management /Quality Control
SAP/ERP Software Configuration Specialist
SAS Software Applications Engineer
Oracle Software Applications
Engineering Design/Manufacturing Graphics Technologist

Software Technology (BS) Program Outcomes:

- Graduates will have the technical skills to customize and apply industry standard software for a wide variety of functions in such industries as business, manufacturing, engineering, and service.
- Graduates will have the technical background in computer hardware and networking skills to function as a computer networking technologist.
- Graduates will exhibit an understanding of the necessity for personal integrity, ethical behavior, cultural awareness and lifelong learning.

Liberal Arts and Sciences	(60 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Basic Communication (GE)	3
The Arts (GE)	3
Foreign Language (GE)	3
Social and Behavioral Science (GE)	6
American/Other World/Western Civilization History (GE)	3
Humanities (GE)	3
Natural Science	7
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II (GE)	4
MTH 110 Statistics (GE)	3
MTH 116 College Algebra	4
MTH 129 Precalculus	4
MTH 130 Calculus with Applications	4
Liberal Arts and Sciences Elective	3

Software Technology Core	(47 credits)
SET 101 Fundamentals of Software Technology	3
EET 104 DC/AC Circuits	4
EET 105 Introduction to Digital Electronics	2
SET 105 Introduction to Symbolic and Logic Programming	3
SET 205 Introduction to Artificial Intelligence and Robotics Technology	3
SET 220 Internetworking	3
SET 230 Wireless Technology and Applications	3
SET 310 Software Applications for ERP Solutions	3
SET 320 Software Applications in Supply Chain Management	3
SET 400 Network Planning and Implementation	3
SET 402 Software Applications in Statistical Analysis & Manufacturing Mgmt	3
SET 405 Software Applications in Manufacturing & Service Functions	3
SET 410W Senior Project	3
EET 440 Networking & Data Communications	4
EET 441 Advanced Networking	4
Related Courses	**(18 credits)**
BCS 120 Foundations of Computer Programming I	3
BCS 230 Foundations of Computer Programming II	3
BCS 345 Java Programming	3
BCS 260 Database	3
BCS 301 Systems Analysis and Design	3
Elective	3

Can be selected from BCS, BUS, EET, MET, GPH, IND courses (by advisement only)

Total Credits:	**125**

Degree Type: BS
Total Required Credits: 125

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Business Analytics

Bachelor of Science Degree

The Bachelor of Science degree in Business Analytics is designed to prepare students for jobs that require data analysis skills, data visualization, and presentation skills that are essential to decision making in organizations.

The explosive growth of technologies and applications that collect data and generate information is changing the business landscape. Current and new technologies and social media provide abundant information (i.e., big data) to businesses and organizations. Consequently, today's challenge is to extract useful information from big data (data mining); to interpret that information (descriptive analytics), to predict the future (predictive analytics), and to make decisions that would help organizations to achieve their goals (prescriptive analytics).

The Business Analytics program will teach students the necessary skills to work with large data sets and perform data mining tasks to enable evidence-based decision making. Graduates from the BS in Business Analytics will have powerful analytical skills combined with a strong business background. Therefore, graduates from the program will succeed in the changing business environment and will have the foundation necessary to pursue advanced degrees in the field as well.

Typical Employment Opportunities

Management Analyst
Market Research Analyst
Sports Statistical Analyst
Finance Analyst
Computer Systems Analyst

Business Analytics (BS) Program Outcomes:

- Graduates will demonstrate strong core discipline knowledge in accounting, finance, legal environment of business, management, marketing, and operations management.
- Graduates will evaluate ethics and social responsibility issues.
- Graduates will analyze business situations and offer reasoned, actionable suggestions leading to problem resolution.
- Graduates will demonstrate effective written and verbal communication skills supported by current technology.
- Graduates will evaluate the impact of the political, cultural and legal context surrounding global business operations and their effect on local business operations.
- Graduates will summarize and interpret each step in the analytics process and apply appropriate analytics software and tools (data collection, data mining, descriptive analytics, predictive analytics, and prescriptive analytics).

Liberal Arts and Sciences	**(61 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
MTH 116 College Algebra (GE)	3
ECO 156 Principles of Economics (Macro) (GE)	3
ECO 157 Principles of Economics (Microeconomics)	3
Humanities elective (GE)	3
Foreign Language elective (GE)	3
Math or Natural Science elective	4
Natural Science elective (GE)	3
American/Other World/Western Civilization (GE)	3
Arts elective (GE)	3
BUS 141 Contemporary Business Communication (GE)	3
EGL 310 Technical Writing	3
Arts and Science Electives	15
Arts and Science Electives Upper Level	6

Required: Business Analytics	**(48 credits)**
BUS 101 Accounting I	3
BUS 102 Accounting II	3
BUS 109 Management Theories and Practices	3
BUS 131 Marketing	3
BUS 240: Business Statistics OR	
MTH 110 Statistics	3
BUS 201 Corporate Finance	3
BUS 345 Introduction to Business Analytics	3
BUS 385 Business Data Management	3
BUS 300 Operations Management	3
BUS 340 Advanced Business Statistics OR	
ECO 380 Econometrics	3
BUS 345 Foundations of Business Analytics	3
BUS 409 Strategic Management	3
BUS 440W Visual Analytics	3
BUS 445 Advanced Business Analytics	3
BUS 448 Business Analytics Project	3
Technical Elective	3
Technical Elective (300 level or higher)	3

Free Elective	**(3 credits)**
Free Elective (300 level or higher)	**(9 credits)**

Total Credits	**121**

Degree Type: BS
Total Required Credits: 121

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes:
Technical Electives:

BUS 386 Marketing Analytics

BUS 314 Supply Chain Analytics

BUS 319 Marketing Research

BUS 387 Financial Analytics

MTH 246 Introduction to Financial Mathematics

MTH 346 Continuous Time Finance

BCS 260 Introduction to Database Systems

BCS 425 Business Intelligence and Data Warehousing

The three required Asia-focused courses may be selected from the following options:	
CHI 151 Chinese I	3
CHI 152 Chinese II	3
HIS 213 Peoples and Cultures of Asia	3
HIS 214 East Asia and the World	3
HIS 216 History of Central Asia: From Genghis to Borat	3
HIS 311 China Since 1840	3

HIS 343 Cinema and The City	3
POL 373 Politics in Asia and the Pacific Rim	3

The two Asia-component courses may be selected from the following options:	

ART 201 Survey of Art History: Prehistoric Times Through Middle Ages	3
BUS 280 International Business	3
BUS 320 International Marketing	3
BUS 322 International Management	3
BUS 366 International Resource Management	3
BUS 494 Seminar in Global and International Business	3
ECO 340 International Trade	3
EGL 206 World Literature: Early Classics	3
GEO 211 The World and Its Peoples	3
HIS 233 Comparative Religions and Cultures	3
HIS 315 Imperialism	3
HOR 350 The Art History of Garden Design and Landscape Architecture	3
MLG 300 International Cinema	3
POL 262 Global Politics	3
POL 265 Comparative Politics	3
POL 370 International Relations	3
POL 371 Geopolitics	3
POL 392 Religion and Politics	3
RAM 303 Research Experience	3

Total Required Credits: 15

Notes: 1. Some sections of the Special Topics courses listed below have a thematic focus on East Asia. If students request, the Minor Coordinator will approve those Asia-themed sections as counting toward the minor: ECO 390 (Special Topics in Economics), GEO 290 (Topics in Geography), GEO 390 (Special Topics in Geography), HIS 219 (Topics in History), HIS 319 (Special Topics in History), POL 395 (Special Topics in Politics), and STS 400W (Senior Seminar in Science, Technology, and Society) 2. Some sections of the Special Topics courses listed below have a thematic focus on East Asia. If students request, the Minor Coordinator will approve those Asia-themed sections as counting toward the minor: ECO 390 (Special Topics in Economics), GEO 290 (Topics in Geography), GEO 390 (Special Topics in Geography), HIS 219 (Topics in History), HIS 319 (Special Topics in History), POL 395 (Special Topics in Politics), and STS 400W (Senior Seminar in Science, Technology, and Society)

Accounting Certificate

Certificates in Business Management are offered in Accounting, Marketing, Management and International Business. Certificates are designed to provide a general exposure to a field for students not seeking a degree.

***Gainful Employment Mandatory Disclosure Statement**

BUS 101 Accounting I	3
BUS 102 Accounting II	3
BUS 109 Management Theory and Practices and Practices	3
BUS 111 Introduction to Business	3
BUS 220 Financial Information Systems	3
BUS 271 Intermediate Accounting I	3
BUS 272 Intermediate Accounting II	3
BUS 273 Cost Accounting	3
BUS 301 Corporate Finance	3

Three additional courses (9 credits) in Business

Total Required Credits: 36

Notes: 1. Students planning to pursue a degree program after completing the certificate program are urged to select elective courses applicable to the degree program.

Required:	**(21 credits)**
BCS 120 Foundations of Computer Programming I	3
BCS 130 Website Development I	3
BCS 160 Computers, Society, and Technology	3
BCS 230 Foundations of Computer Programming II	3
BCS 240 Website Development II	3
BCS 303 XML	3

BCS 200 Level or Higher Elective – To be determined in consultation with the Department Chair

When it is deemed necessary, substitutions may be made at the discretion of the Department Chair.

Industrial Technology - Facility Management Technology

Bachelor of Science Degree

This is a four-year program offered by the Mechanical Engineering Technology Department. Students may matriculate on a full-time or part-time basis. The Bachelor of Science program in Facility Management Technology is designed to serve the growing need for technically competent facility managers, and to meet the transfer and continuing education needs of associate degree graduates (or transferring students from a related field of study).

Typical Employment Opportunities:

Plant Engineer
Facilities Maintenance Manager
Facility Manager
Commissioner of Public Works
Director of Physical Plant
Superintendent of Building & Grounds
Director of Facility Management
Vice President of Facilities Engineering

Facility Management Technology (BS) Program Outcomes:

- Graduates will have the knowledge and skills and will assume leadership positions in maintenance and operation of buildings and grounds, management of structural and electrical maintenance, energy management, personnel management, budgeting and space planning.
- Graduates will be able to apply the latest technologies of heating, ventilation and cooling systems, security and fire protection systems, occupational and environmental health and safety to the solution of facility maintenance, operation and management problems.
- Graduates will exhibit an understanding of the necessity for personal integrity, ethical behavior, cultural awareness and lifelong learning.

The Facility Management Technology Program has an Advisory Committee of professional societies representing the facility management field in the metropolitan area. This committee, through periodic meetings with the faculty, provides the guidance required in maintaining a relevant and viable program.

This program is accredited by the Association of Technology, Management and Applied Engineering, 1390 Eisenhower Place, Ann Harbor, MI 48108, 734-677-0720 www.atmae.org

Liberal Arts and Sciences	**(60 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
The Arts (GE)	3
Basic Communication (GE)	3
Foreign Language (GE)	3
Social and Behavioral Science (GE)	3
American/Other World/Western Civilization History (GE)	3
Humanities (GE)	3
Natural Science*	8
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II (GE)	4
MTH 110 Statistics (GE)	3
MTH 129 Precalculus	4
MTH 130 Calculus w Applications	4
Liberal Arts and Sciences Electives	9

* For Natural Science Elective, at least one chemistry course.

Required: Industrial Technology Common Core	**(9 credits)**
BUS 101 Accounting	3
BUS 102 Accounting II	3
BUS 300 Operations Management	3
Facility Management Technology	**(56 credits)**
IND 308 Occupational Safety	3
IND 309 Security and Fire Protection Systems	3
IND 310 Industrial Hygiene	3
IND 315 Facilities Planning	3
IND 402 Facility Maintenance Management	3
IND 405 Heating Ventilating, & Air Conditioning Systems	3
IND 406W Energy Management	3
MET 105L Technical Drawing and CAD	1
MET 109 Computer Programming and Applications	2
MET 150 Solid Modeling	2
MET 205 Material Science	3
MET 212 Applied Fluid Mechanics	3
MET 230 Electrical Principles	3
MET 307 Electromechanical Control Systems	3
MET 314 Applied Thermodynamics	3
Technical Electives (AET,BCS,BUS,CON,EET,HOR,IND,MET courses)	15
Total Credits:	**125**

Degree Type: BS
Total Required Credits: 125

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Technology Management

Master of Science Degree

The Master of Science Degree in Technology Management at Farmingdale State College (FSC) is intended to graduate qualified professionals capable of taking leadership roles in designing, developing, improving, and transforming the industrial systems that are the basis for much of the industry in the region. This program will provide an exceptional and affordable opportunity for advanced study in the critical field of technology management to qualified graduates of baccalaureate programs in technology, engineering technology and related fields.

The multi-disciplinary program builds on the strengths of the faculty, laboratories, and equipment of three undergraduate departments in the School of Engineering Technology: Mechanical Engineering Technology, Electrical/Computer Engineering Technology, and Architecture and Construction Management. Drawing on these strengths and addressing the industrial needs in the region, the program has two tracks:

- Track I: Electrical and Mechanical
- Track II: Construction Management

Technology Management (MS) Program Outcomes:

- Graduates will have knowledge and competency in the field of technology management with an emphasis on engineering technologies.
- Graduates will have the knowledge and skills necessary to be imaginative, critical thinkers who are able to discover problems and questions, develop logical answers, and apply effective solutions in the practice of technology management.
- Graduates will have knowledge of ethical behavior in professional positions in all aspects of technology management.
- Graduates will have competency in the management and leadership of technology in global industry.

- Graduates will have an awareness of diversity in the various fields of technology.
- Graduates will have skill to evaluate technical management issues in the context of ethical, technological, structural, cultural, human and environmental factors.
- Graduates will have skill to develop and foster critical thinking, analysis, planning, and communication.
- Graduates will have knowledge and skills in the improvement of productivity, quality control, and competitiveness in all aspects of technology management through collaborative relationships with regional industries.

Core Courses	(12 credits)
ETM 501 Engineering Quality Management and Reliability	3
BUS 502 Project Management	3
ETM 503 Research Methods	3
BUS 504 Technology Management Ethics and Policies	3

Track I: Electrical and Mechanical (EM) Major Required Courses	(9 credits)
ETM 510 Energy and Power Management Analysis	3
ETM 511 Nanotechnology Principles and Applications	3
ETM 520 Control Systems Management	3

Track II: Construction Management (CM) Major Required Courses	(9 credits)
ETM 530 Residential Development Management	3
ETM 531 Construction Cost Analysis and Advanced Estimating	3
BUS 532 Legal Aspects of Construction Management	3

Technical Elective Courses	(3-9 credits)
ETM 512 Applied Thermal Energy Systems	3
ETM 513 Computer Applications in Engineering Technology	3
ETM 514 Engineering Analysis	3
ETM 521 Semiconductor Devices and Integrated Circuits	3
ETM 533 Heavy Construction Operation and Equipment	3
ETM 611 Modern Energy Conversion Technologies	3
ETM 612 Robotics, Automation and Control Systems	3
ETM 613 Emerging Clean Energy Technologies	3
ETM 623 Optical Communications	3
ETM 624 Fundamentals of Photovoltaics, Photonics	3
BUS 630 Decision Making and Risk Management	3
ETM 631 Construction Contracts	3
ETM/BUS 680 Special Topics in Technology Management	3

Elective Capstone Courses	(3-6 credits)
ETM/BUS 670 Master's Project	3
OR	
ETM/BUS 671 Master's Thesis	6
Total Credits:	**30**

Degree Type: MS
Total Required Credits: 30

Notes:

1. There are three options for degree completion:
Option 1: Three technical elective courses
Option 2: ETM 670 Master's Project Plus two technical elective courses
Option 3: ETM 671 Master's Thesis plus one technical elective courses

Business Management Minor

Available to all baccalaureate majors except Business Management or Aviation Administration majors, the minor is intended for students who wish to attain a broad understanding of the foundation topics in this multifaceted field. The minor consists of 21 credits; BUS 101 – Accounting I, BUS 109 – Management Theories and Practices, and BUS131 – Marketing Principles are required, plus four Business courses (12 credits) at the 200 level or above.

Student Learning Outcomes:

- Students will gain fundamental knowledge of basic accounting, marketing, and management principles.
- Students will will acquire an appreciation for the role of business in society.
- Students will develop competencies that will prepare them for further study in business or employment in a business environment.

About Academic Minors

Farmingdale State College students are invited to enhance their studies with an "Academic Minor." A minor is a cluster of thematically related courses drawn from one or more departments. In addition to department based minors (e.g. computer programming & info systems), interdisciplinary minors are also available (e.g. legal studies).

Academic minors are approved by the College-Wide Curriculum Committee and the Provost. Students must make application for an academic minor through the department offering the minor in conjunction with the Registrar's Office Specific course work must be determined in consultation with a faculty member in the department offering the minor. A statement of successful completion of the academic minor will appear on the student's transcript at the time of graduation.

- A minor is considered to be an optional supplement to a student's major program of study.
- Completion of a minor is not a graduation requirement and is subject to the availability of the courses selected. However, if the requirements for a minor are not completed prior to certification of graduation in the major, it will be assumed that the minor has been dropped.

Consequently, the student will only be certified for graduation in their primary major.
- Only students in 4 year baccalaureate programs can apply for a minor.
- A minor should consist of 15 to 21 credits.
- At least 12 credits must be in courses at the 200 level or higher.
- At least 9 credits must be residency credits.
- Specific requirements for each minor are determined by the department granting the minor.
- Students must maintain a minimum cumulative GPA of at least 2.0 in their minor. Some minors may require a higher GPA.
- Students are prohibited from declaring a minor in the same discipline as their major (e.g. one cannot combine an applied math minor with an applied math major). **Academic minors may not apply to all curricula.**
- Students are permitted to double-count courses.
- Students are only permitted to take more than one minor with appropriate written approval of their department chair or curriculum Dean.

The Business Management Minor is not available to Business Management or Aviation Administration majors. The minor consists of 21 credits distributed as follows:

Required:	(9 credits)
BUS 101 Accounting I	
BUS 109 Management Theories & Practices	
BUS 131 Marketing Principles	
Electives	**(12 credits)**
Business Management (BUS) courses at the 200-level or higher	

Civil Engineering Technology

The Civil Engineering Technology program (CIV), following the missions of both Farmingdale State College and the State University of New York, offers a comprehensive and stimulating program that fulfills the needs of students and regional employers. This program promotes student learning as well as the advancement of technology while contributing to the local economy. Fulfilling Farmingdale State College's mission, the program produces graduates with high technical skills and knowledge are ready to enter the workforce in New York State.

ABET program accreditation can be sought after the first graduate is produced. This curriculum is housed in a school that currently offers six ABET accredited programs, demonstrating a commitment to the quality inherent within ABET standards. Once a civil ET graduate is produced, ABET review will be requested. A subsequent positive accreditation decision would be retroactive. For more information about ABET accreditation, please contact Dean Christe at christbl@farmingdale.edu

In New York State, graduates may site the First Engineering (FE) Exam upon graduation and the Professional Engineering (PE) exam after working six years under a professional engineer.

Student Learning Outcomes (based on ABET requirements):

Upon completion of the program students will demonstrate:

- an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
- an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
- an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and, to apply experimental results to improve processes;
- an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
- an ability to function effectively as a member or leader on a technical team;
- an ability to identify, analyze, and solve broadly-defined engineering technology problems;
- an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and, an ability to identify and use appropriate technical literature;
- an understanding of the need for and an ability to engage in self-directed continuing professional development;
- an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
- knowledge of the impact of engineering technology solutions in a societal and global context;
- a commitment to quality, timeliness, and continuous improvement.

Typical Employment Opportunities:

Civil Engineers
Architectural and Engineering Managers
Engineering Teachers, Postsecondary

Civil Engineering Technology (BS) Program Objectives:

- Graduates will have the technical and managerial skills necessary to enter careers in the planning, design, construction, operation or maintenance of the built environment and global infrastructure.
- Graduates will be prepared to analyze and design systems.
- Graduates will be prepared to specify project methods and materialsprepared to perform cost estimates and analyses.
- Graduates will be prepared to manage technical activities in support of civil engineering projects.

Liberal Arts and Sciences	(62 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Literature	3
EGL 310 Technical Writing (GE)	3
CHM 152 General Chemistry Principles I (GE)	4
ECO 321 Engineering Economics (GE)	3
MTH 129 Pre-Calculus with Applications (GE)	4
MTH 130 Calculus I OR	
MTH 150 Calculus I (GE)	4
MTH 236 Calculus II with Applications OR	3
MTH 151 Calculus II (GE)	
MTH 360 Applied Probability and Statistics	3
MTH 390 Probability Method in Operation Research	3
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II (GE)	4
PHY 333 Modern Physics (GE) OR	
MTH Elective (200 Level or Higher)	3
Liberal Arts & Sciences Electives	3
The Arts (GE)	3

Social & Behavioral Science (GE)	3
Foreign Language - Level II or higher (GE)	3
Humanities (GE)	3
American/Western/Other World Civilizations (GE)	3

Required: Civil Technology	(64 credits)
ARC 131 Intro to Graphics	4
ARC 263 Mechanical, Electrical, Plumbing & Energy Systems in Buildings	3
CIV 106 Statics	3
CIV 207 Elements of Strength of Materials	3
CIV 208 Dynamics	3
CIV 302 Soils, Foundations & Earth Structures	3
CIV 303 Hydraulics	3
CIV 402 Civil Engineering Materials	3
CIV 408 Structures	3
CIV 409 Structural Design	3
CIV 410 Transportation Engineering	3
CIV 411 Water and Wastewater Systems	3
CIV 412 Highway Engineering	3
CIV 414 Reinforced Concrete Design	3
CIV 496 Capstone Project	3
CON 103 Surveying	3
CON 161 Materials & Methods of Construction I	3
CON 365 Highway Design & Construction	3
CON 401W Construction Project Management & Scheduling	3
Technical Electives (300 Level or Higher)	6

Total Credits	126

Degree Type: BS
Total Required Credits: 126

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes: Technical Electives (300 level or higher) are considered any of the following: CON 361 Government Buildings & Env Codes & Regulations; CON 399 Applied Research Topics; CON 407 Building Commissioning; IND 308 Occupational Safety; IND 309 Security and Fire Protection Systems. Math Elective (200 level) are considered any of the following: MTH 245 Linear Algebra; MTH 250 Introduction to Graph Theory and Combinatorics; MTH 252 Calculus III; MTH 25 Differential Equations; MTH 290 Methods of Proof in Advanced Mathematics; MTH 320 Geometric Structures; MTH 322 Advanced Mathematical Analysis

Industrial Technology - Automotive Management Technology

Bachelor of Science Degree

This bachelor's degree is designed for students who have completed an automotive technologies associate degree. Students may matriculate on a fulltime or part-time basis.

The Bachelor of Science in Automotive Management Technology program is designed to develop the requisite skills for management positions in automotive or related fields. Specifically, the program will provide advanced training in such areas as personnel management and motivation, customer relations, and community relations. Additionally, training is provided in business related topics such as accounting, financing and leasing, and occupational safety.

Students will learn to enhance their ability to manage personnel, maintain successful and mutually rewarding relationships with customers, and successfully manage the business and financial aspects of the enterprise. This Bachelor of Science degree will provide, for a person with technical training and experience, the skills and credentials necessary to advance into management level positions.

Students are required to take a common core of liberal arts and science courses and a series of curriculum specific business management courses.

Typical Employment Opportunities:

Automotive Retail Chain Manager
Automotive Parts Manager
Automotive Service Manager
Automotive Business Manager
Automotive Financing/Leasing Manager
Fleet Management
Vehicle Manufacturer District Service Manager

Automotive Management Technology (BS) Program Outcomes:

- Graduates will have the technical skills, knowledge and ability to enter their chosen Automotive Technology discipline.
- Graduates will have good written and oral communication skills.
- Graduates will develop and be able to maintain the necessary knowledge to operate within all areas of land, sea and air (ground support) vehicles, equipment, facilities, service and operations.

This program is accredited by the Association of Technology, Management and Applied Engineering, 1390 Eisenhower Place, Ann Harbor, MI 48108, 734-677-0720 www.atmae.org

Liberal Arts and Sciences	(60 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Basic Communication (GE)	3
The Arts (GE)	3
Foreign Language (GE)	3
Social & Behavioral Science (GE)	3
American/Other World/Western Civilization History (GE)	3
Humanities (GE)	3
Natural Science (GE)	8
PHY 135 College Physics I (GE)	4

PHY 136 College Physics II	4
Liberal Arts and Sciences Electives	9
MTH 110 Statistics (GE)	3
MTH 129 Precalculus	4
MTH 130 Calculus with Applications	4

Common Core For All Industrial Technology Students	**(12 credits)**
BUS 101 Accounting I	3
BUS 102 Accounting II	3
BUS 300 Operations Management	3
MET 105 Technical Drawing	1
MET 150 Solid Modeling	2
Automotive Management Technology Option	**(53 credits)**
AET 101 Internal Combustion Engine Theory and Servicing	3
AET 106 Suspension and Control Systems	3
AET 107 Manual Drivetrains and Driveaxles	3
AET 150 Automotive Computer Applications	2
AET 208 Automotive Electrical Applications	3
AET 215 Diesel Engines	3
AET 217 Applied Mechanics and Engineering Materials	3
AET 255 Computerized Engine Controls	3
AET 257 Automatic Transmissions	3
IND 316 Customer Relations and Quality	3
IND 317 Automotive Financing and Leasing	3
IND 320 Fleet Management	3
IND 408 Automotive Business Management	3
AET 410W Senior Project	3
Technical Elective:	12
(AET, EET, IND, MET, BUS, or RAM 303)	
Total Credits:	**125**

Degree Type: BS
Total Required Credits: 125

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Dental Hygiene Completion - online

Bachelor of Science Degree

The Bachelor of Science degree program in Dental Hygiene is designed to meet the transfer and continuing education needs of Associate in Applied Science Degree graduates in Dental Hygiene. This program will offer students a foundation of knowledge that will prepare them for the emerging roles within the dental hygiene profession. Emphasis is placed on broadening the career paths for practicing hygienists. Foundation courses are in the areas of teaching, research and public health. As part of the capstone practicum course, students are given the opportunity to further explore a specific area of interest through an internship. Based on personal interest, students may partner with corporations, hospitals, public health programs/facilities or educational institutions.

As the dental hygiene profession continues to expand many career opportunities require advanced degrees. This degree completion program in dental hygiene is tailored to provide comprehensive upper-level studies that will prepare dental hygienists to adapt to the emerging new roles in oral healthcare.

Please refer to the Safety and Technical Standards in the front section of the College catalog.

Typical Employment Opportunities

Clinical Research
Dental Hygiene Education
Dental Insurance Companies
Geriatric Facilities, Case Management
Patient Advocacy
Pharmaceutical Corporations, Sales and Management
Pharmaceutical Corporations, Research and Development
Public Health Agencies

Dental Hygiene (BS Degree Completion) Program Outcomes:

- The dental hygiene graduate will be able to utilize professional judgment and critical thinking skills to determine the treatment needs of geriatric and special needs patients.
- The dental hygiene graduate will appreciate the role of leadership, management, and technology as it applies to dental hygiene practice.
- The dental hygiene graduate will develop the skills necessary to analyze and apply scientific literature in the dental hygiene process of care.
- The dental hygiene graduate will be able to develop a comprehensive community based oral health care program.
- The dental hygiene graduate will demonstrate an understanding of the learning process, various teaching methodologies and evaluation techniques as they apply to the dental hygiene educator.
- The dental hygiene graduate will be empowered to seek employment opportunities other than traditional clinical practice.
- The dental hygiene graduate will seek educational advancement for continued growth and development following commencement.

Special Opportunities

As a student in the Dental Hygiene Bachelor of Science Degree Completion Program in dental hygiene, you are required to participate in the Student American Dental Hygienists' Association (SADHA) which promotes student leadership through community outreach, lunch and learn programs, and various campus activities.

To facilitate transfer into graduate level programs, the Dental Hygiene Department has established seamless transfer agreements with Stony Brook University, School of Health Technology and Management for a Master of Science in Health Care Policy and Management, and University of Bridgeport, Fones School of Dental Hygiene for a Master of Science in Dental Hygiene.

Fall 2018-Subject to Revision

Liberal Arts and Sciences	**(39 credits)**
The Arts (GE)	3
MTH 110 Statistics (GE)	3

American/Other World/Western Civilization History (GE)	3
BIO 240 Bioethics	3
Foreign Language – Level II (GE)	3
Humanities (GE)*	3
Liberal Arts & Science Electives*	18

*** 200 level or above recommended**

Compare the Liberal Arts and Sciences courses you have successfully completed in your associate degree program to confirm general education requirements that you have met.

College and Program Requirement	
Grade of C or higher in EGL 102 is a graduation requirement. EGL 102 is to be completed in the first semester as a program requirement.	
EGL 102 Composition Literature	3
Required: Dental Hygiene	**(25 credits)**
DEN 303 Practice Management for Quality Assurance	3
DEN 309 Oral Epidemiology in Public Health	3
DEN 310 Teaching Strategies for Health Care Educators	3
DEN 401W Health Science Research: Principles and Methods	3
DEN 402 Gerontology	3
DEN 406W Proposals and Grant Management for Health Programs	3
DEN 407 Dental Hygiene Practicum Seminar	1
DEN 409 Dental Hygiene Practicum	3
Free Elective	3
Total Credits:	**64**

Note: Students must take at least one 3 credit hour course designated as Writing Intensive to graduate.

Degree Type: BS
Total Required Credits: 64

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Sciences for the Health Professions Certificate

The Certificate in Sciences for the Health Professions is a post-baccalaureate science program designed to meet the needs of students with bachelor's degrees in non-science fields who seek a career change into the health professions, but lack some or all of the necessary science and mathematics background. It thus offers an affordable means for academically qualified students to prepare themselves for admission into professional programs in this field. Acceptance into this Certificate program requires an earned bachelor's degree with a GPA of at least 3.0.

***Gainful Employment Mandatory Disclosure Statement**

Required	**(16 credits)**
BIO 130 Biological Principles I	4
BIO 131 Biological Principles II	4
CHM 152 General Chemistry Principles I	4
CHM 153 General Chemistry Principles II	4

Electives (18 credits selected from the following)

BIO 125 Nutrition	3
BIO 170 Human Anatomy & Physiology I	4
BIO 171 Human Anatomy & Physiology II	4
BIO 220 Medical Microbiology	4
BIO 270 Anatomy & Physiology I	4
BIO 271 Anatomy & Physiology II	4
BIO 343 Principles of Genetics	3
BIO 348 Cell Biology	3
BIO 380 Pre-professional Experience I	3
BIO 381 Pre-professional Experience II	3
CHM 260 Fundamentals of Organic Chemistry	4
CHM 270 Organic Chemistry I	5
CHM 271 Organic Chemistry II	5
CHM 380 Biochemistry	4
CHM 381 Advanced Biochemistry	3
MTH 129 Precalculus with Applications	4
MTH 130 Calculus with Applications	4
MTH 150 Calculus I	4
MTH 151 Calculus II	4
PHY 135 College Physics I	4
PHY 136 College Physics II	4
PHY 143 General Physics I	4
PHY 144 General Physics II	4

Total Required Credits: 34

Visual Communications: Art & Graphic Design

Bachelor of Technology Degree

The Visual Communications Department has a history of more than a half-century of innovation and excellence. Our design program offers a comprehensive and relevant educational experience that prepares students to be real-life creative problem solvers in traditional as well as emerging fields. Upon graduation, they demonstrate valuable professional skills and technological competencies vital for succeeding in an evolving creative environment.

The Visual Communications: Art & Graphic Design Baccalaureate Degree experience also includes opportunities that enable students to gain essential professional experience and participate beyond the classroom: two internship courses encourage students to pursue professional opportunities while the "in-house" agency courses allow students to work collaboratively and directly with clients. The Design Club and a student chapter of the AIGA, the premiere professional association for design, give our students an opportunity to participate in the industry as student learners. There are also industry-related field trips and special study abroad programs with trips that range from a few weeks to an entire semester.

The success of graduates in positions of responsibility in some of the best-known agencies, design teams, studios and corporations in the region and around the country illustrates the strength of our program. Many alumni have become thriving entrepreneurs by opening their own agencies and art-related businesses or as well as through active freelance careers.

For additional information, or to schedule an interview and tour of our facilities, please contact the Visual Communications Department.

Typical Employment Opportunities

Art Director
Brand Identity Designer
Creative Director
Editorial Designer
Graphic Designer
Interface Designer
Mobile Interface Designer
Package Designer
Photographer
Production Manager
Social Media Designer
User Experience Designer
Visual Content Developer
Web Designer & Developer
Web Developer

Visual Communications (BT) Program Outcomes:

- Graduates will receive a strong foundation in design, will have opportunities to explore, experiment, and master skillsets in traditional disciplines and digital techniques.
- Graduates will demonstrate diverse knowledge and skills required to perform professionally in an evolving creative work environment.
- Graduates will exhibit the knowledge necessary to understand design from an historical perspective, as well as current and future trends of industry.
- Graduates will have learned specific professional skills addressing résumé development, self-promotion, job search skills, industry procedures and practices and presentation techniques.
- Graduates will have created a portfolio of work, which will meet industry demands in order to successfully compete in the current job market.

Liberal Arts and Sciences	**(39 credits)**
EGL 101 Composition I: College Writing (GE)	3
ART 200 History of Graphic Design (GE)	3
ART 201 Survey of Art History: Prehistoric Times through the Middle Ages (GE)	3
ART 202 Art History – to Present	3
ART 302 History of American Art	
OR	
ART 303 MesoAmerican Art History	3
American History (GE)	3
Mathematics (GE)	3
Basic Communication (GE)	3
Natural Science (GE)	3
Western or Other World Civilizations (GE)	3
Social & Behavioral Science (GE)	3
Free Elective	3
Free Elective	3
Support Courses	**(3 credits)**
BUS 131 Marketing Principles	3
Visual Communications Core	**(81 credits)**
VIS 110 Drawing I	3
VIS 112 Two-Dimensional Design	3
VIS 114 Color	3
VIS 115 Three-Dimensional Design	3
VIS 116 Digital Media and Methods	3
VIS 120 Drawing II	3
VIS 122 Typography I	3
VIS 222 Graphic Design I	3
VIS 225 Photography I	3
VIS 226 Design Production I	3
VIS 228 Four-Dimensional Design	3
VIS 232 Graphic Design II	3
VIS 234 Design Production II	3
VIS 236 Typography II	3
VIS 238 Illustration for Designers	3
VIS 250 Photography II	3
VIS 332 Graphic Design III	3
VIS 334 Design Production III	3
VIS 336 Advertising I	3
VIS 340 Industry Preparation	3
VIS 346 Advertising II	3
VIS 414 Interaction Design	3

VIS 416W Senior Project I	3
VIS 418 Portfolio	3
VIS 426 Senior Project II	3
VIS/IxD/BUS/BCS Electives or RAM 303	6
Total Credits:	**123**

Transfer credit is granted at the discretion of the faculty based on grades and a portfolio assessment. All students entering the program, including transfer students, will be required to take VIS 116 Digital Media & Methods.

Degree Type: BT
Total Required Credits: 123

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Required:	

Students MUST take the following two courses:

BIO 130 Biological Principles I	4
BIO 131 Biological Principles II	4

Students must earn at least 12 additional credits, including at least one additional laboratory course, at the 200-level or above with appropriate prerequisites satisfied, selected from the following:

BIO 210 Introduction to Bioscience	3
BIO 212 Bioscience Laboratory Practices	2
BIO 220 Medical Microbiology	4
BIO 240 Bioethics	3
BIO 270 Anatomy & Physiology I	4
BIO 271 Anatomy & Physiology II	4
BIO 330 Principles of Ecology	4
BIO 340 Biopharmaceutical Regulation	3
BIO 343 Principles of Genetics	3
BIO 353 Essentials of Plant Pathology	3
BIO 354L Essentials of Plant Pathology Laboratory	1
BIO 355 Ecological Topics	4
BIO 365 Neurology of Pain	3

Core:	**(3 Credits)**
ANT 100 Introduction to Anthropology	3

OR

ANT 120 Introduction to Archaeology	3

General Anthropology Courses:	**(12 Credits)**
(9 of which must be 200 level or higher)	
ANT 110 Sociocultural Anthropology	3
ANT 130 North American Indians	3
ANT 210 Modern Anthropology and Globalization	3
ANT 211 Caribbean Cultures	3
ANT 212 Introduction to Medical Anthropology	3
ANT 220-229 Special Topics in Anthropology	3
ANT 240 Women, Men, and Social Change	3
ANT 250 Forensic Anthropology	3
ANT 320-329 Advanced Topics in Anthropology	3
ANT 360 Anthropological Theory	3
ANT 366 Anthropological Research Methods	3
RAM 303 Research Experience	3

Total Required Credits: 15

Notes: Students who plan eventually to major in Anthropology should be advised by an Anthropology faculty member and are encouraged to take a Modern Language; Statistics (MTH 110); SOC 122. Study abroad is recommended. Other courses relevant to the specific interests of Anthropology students might include: BIO 123, 130; 166/170, 193, 197, 210; CON 103; CRJ 201, 203; HIS 213, 215, 216, or 240; MLG 305-308; PCM 425, 426; POL 110; SOC 220, 225, 228-263

Required:	
BCS 120 Fundamentals of Programming I	3
BCS 208 Introduction to Networks	3
BCS 209 Routing and Switching Essentials	3
BCS 320 Scaling Networks	3
BCS 321 Connecting Networks	3

BCS 200 Level or Higher Elective- To be determined in consultation with the Department Chair

When it is deemed necessary, substitutions may be made at the discretion of the department chair.

Criminal Justice - Law Enforcement

Associate in Science Degree

The goal of this program is to prepare students to be real-life problem solvers in the field of law enforcement. The program is designed to develop procedural competencies and broad-based knowledge in students who wish to pursue careers in Criminal Justice as well as for in-service personnel who seek career advancement in law enforcement. The Department offers a full-time day program and a part-time evening program. Students have the opportunity to interact with faculty who represent a wide spectrum of Criminal Justice experience, expertise and scholarly achievement including

assistance to the National Institute of Justice and numerous state and local agencies, task forces and professional and learned societies.

We remain faithful to our tradition of providing students with a broad based educational experience by drawing from the deep reservoirs of knowledge of the arts and sciences. Our associate degree program provides students with the educational credentials necessary for many law enforcement careers, and graduates who wish to continue their education will find that the AS degree enables them to transfer to a wide variety of related upper division programs.

Typical Employment Opportunities

Federal Government
U.S. Armed Forces Police
State Government
Local Government
Business and Industry Security
Enforcement Agencies
County, City, Town, Village, Law
Insurance Claim Investigation

Criminal Justice – Law Enforcement (AS)

Program Outcomes:

- Graduates will have knowledge of the complexities involved in law enforcement and its administration.
- Graduates will have an understanding of investigative procedures and evidence management in police operations and will be competent in the administration of chain of custody proceeds that emphasize the courts.
- Graduates will have an understanding of sources of criminal activity and behavior.
- Graduates will gain understanding of criminal law and procedure, and its relationship to crime prevention and detection.
- Graduates will have an appreciation and understanding of the necessity for personal integrity, professional ethics, and cultural awareness.

Liberal Arts and Sciences	(37 credits)
EGL 101 Comp I: College Writing (GE)	3
Humanities Elective (GE)	3
The Arts Elective (GE)	3
MTH 110 Statistics (GE)	3
Natural Science course with a lab (GE)	4
Two History courses from two different History General Education areas	6
PSY 101 Introduction to Psychology (GE)	3
PSY 315 Abnormal Psychology	3
SOC 122 Introduction to Sociology (GE)	3
One 200-level Sociology course from the list below:	3
SOC 225 Sociology of Marriage & Family (GE)	
SOC 229 Race and Ethnic Relations (GE)	
SOC 231 Promises & Challenges of Multiculturalism (GE)	
Free Elective	3

Required: Criminal Justice	(27 credits)
CRJ 100 Introduction to Criminal Justice	3
CRJ 101 Law Enforcement/Comm Relations	3
CRJ 102 Juvenile Delinquency and Justice	3
CRJ 115 Computer Forensics	3
CRJ 200W Criminal Investigation	3
CRJ 203 Criminology	3
CRJ 204 Criminal Law	3
CRJ 205 Criminal Procedure Law	3
CRJ 211 Law Enforcement Administration	3
Total Credits:	**64**

Degree Type: AS
Total Required Credits: 64

Applied Gerontology

Bachelor of Science Degree

The Bachelor of Science in Applied Gerontology is offered in the school of Health Sciences at Farmingdale State College.

The field of gerontology is expanding as the number of elders in America continues to increase, quickly outpacing other segments of the population. By 2030 the older population will be more than twice their number from 2000. With over 13% of Americans currently over the age of 65 and projected to be 19% in 2030, our society will be facing crucial issues about aging which will impact the lives of most Americans.

The Applied Gerontology program aims to improve the quality of life of the aged. Central issues to the study of aging are individual, social, and institutional-based. The multidisciplinary course work follows these issues and provides proficiency in all aspects of working with, and administering to, an aging population.

This bachelor's program is designed to prepare students for entry-level occupational positions in the growing field of aging as well as providing skills and knowledge necessary for graduate and professional school entrance.

All Applied Gerontology students will complete a 4-credit hour internship during their academic work. Students have the opportunity to work in area agencies on aging, private, state, and federal aging, care management organizations, advocacy organizations and non-profits serving older adults and their families.

The structure of the program centers on the traditional 8-semester format with additional options to incorporate approved transfer courses, and full and part-time options. Adult learners and change of career applicants are encouraged to apply and accommodated multiple online/hybrid class opportunities.

Assisted Living Administrations
Consultant/Advocate
Estate Preservation
Federal/State/Local Gov. Agencies
Geriatric Care Managers
Health Educators
Health Insurance Companies
Home Health Care Administration
Hospice Facility Administration
Hotel Facilities Administration
Long-term care Administrator
Rehabilitation Facilities
Research settings

Residential Care Centers
Skilled Nursing Administration

Applied Gerontology (BS) Program Objectives:

- Graduates will demonstrate an appreciation of fundamental interdisciplinary evidence-based awareness of geriatric care. They will apply personal and social responsibility to ethical behavior in all settings dealing with the elderly and the aging process.
- Graduates will employ effective oral and written communication skills needed in a global information society.
- Graduates will evaluate, interpret, and analyze current issues in geriatric science/ administration. They will extrapolate theoretically effective answers to solve problems involving the elderly.
- Graduates will demonstrate the knowledge base skills needed to interpret analyze and evaluate the gerontology field and to prepare for further professional and graduate education.

Liberal Arts and Sciences	**(46 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Arts Elective (GE)	3
History Elective	3
Foreign Language I (GE)	3
Foreign Language II (GE)	3
MTH 110 Statistics (GE)	3
PSY 101 Introduction to Psychology (GE)	3
BIO 123 Human Body and Health	4
BUS 111 Introduction to Business	3
BUS 141 Business Communications	3
NTR 110 Introduction to Nutrition Science / BIO 125 Biology of Nutrition	3
Arts/Science Electives	9

Required:	**(21 credits)**
GRO 100 Introduction to Gerontology	3
PHI 205 Ethics	3
SOC 228 Society and Health	3
HIS 240 History of Public Health Care & Medicine	3
PSY 230 Gender Psychology	3
SOC 220 Sociology of Aging	3
SOC 225 Sociology of the Family	3

Required:	**(55 credits)**
HUM 332 Intercultural Communications	3
HST 301 Health Care Organization	3
GRO 300 Biology of Aging	3
GRO 310 Nutrition and Aging	3
GRO 320 Caregiving	3
GRO 330 Public Policy and Aging	3
GRO 340 Gender and Aging	3
MLG 305 Hispanic and Latin American Culture and Civilization	3
PSY 315 Abnormal Psychology	3
PSY 326 Introduction to Behavioral Health Science	3
GRO 410 Health Care Insurance	3
GRO 420 Long-Term Care Administration	3
GRO 430 Communication and Aging	3
GRO 450 Health Care Law	3
GRO 460 Internship in Gerontology	4
Arts/Science Elective (300/400 level)	6

Total Credits	**122**

Degree Type: BS
Total Required Credits: 122

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Required:
BCS 120 Foundations of Computer Programming I
BCS 160 Computers, Society, and Technology
BCS 260 Introduction to Database Systems
BCS 300 Management Information Systems
BCS 301 Systems Analysis & Design
BCS 405 IS Development Project Management

Air Force ROTC

The minor in Air Force ROTC is offered to any Farmingdale baccalaureate student completing the courses of study listed below. The minor not only prepares cadets for active duty service but provides any student the opportunity to study one of our country's major instruments of power, the United States Military. In addition to studying Air Force organizations, missions, and operations, the student will gain a broad perspective of the military in general by studying the history of all Department of Defense Services and completing a leadership and/or business course emphasizing the key elements of leadership required of an Air Force Officer. The AFR courses are conducted at Manhattan College on Fridays. Completion of the minor does not fulfill all commissioning requirements.

Student Learning Outcomes:

- Students will demonstrate diverse knowledge of the United States Military.
- Students will have an appreciation of the historical development for the Department of Defense Services.

- Students will gain the ability to apply leadership skills required of an Air Force Officer.
- Students will be able to work effectively on teams.

About Academic Minors

Farmingdale State College students are invited to enhance their studies with an "Academic Minor." A minor is a cluster of thematically related courses drawn from one or more departments. In addition to department based minors (e.g. computer programming & info systems), interdisciplinary minors are also available (e.g. legal studies).

Academic minors are approved by the College-Wide Curriculum Committee and the Provost. Students must make application for an academic minor through the department offering the minor in conjunction with the Registrar's Office Specific course work must be determined in consultation with a faculty member in the department offering the minor. A statement of successful completion of the academic minor will appear on the student's transcript at the time of graduation.

- A minor is considered to be an optional supplement to a student's major program of study.
- Completion of a minor is not a graduation requirement and is subject to the availability of the courses selected. However, if the requirements for a minor are not completed prior to certification of graduation in the major, it will be assumed that the minor has been dropped. Consequently, the student will only be certified for graduation in their primary major.
- Only students in 4 year baccalaureate programs can apply for a minor.
- A minor should consist of 15 to 21 credits.
- At least 12 credits must be in courses at the 200 level or higher.
- At least 9 credits must be residency credits.
- Specific requirements for each minor are determined by the department granting the minor.
- Students must maintain a minimum cumulative GPA of at least 2.0 in their minor. Some minors may require a higher GPA.
- Students are prohibited from declaring a minor in the same discipline as their major (e.g. one cannot combine an applied math minor with an applied math major). **Academic minors may not apply to all curricula.**
- Students are permitted to double-count courses.
- Students are only permitted to take more than one minor with appropriate written approval of their department chair or curriculum Dean.

Required:	
AFR 101 The Foundations of the U.S. Air Force I	1
AFR 102 The Foundations of the U.S. Air Force II	1
AFR 201 The Evolution of U.S. Air and Space Power I	1
AFR 202 The Evolution of U.S. Air and Space Power II	1

Select 1 course from the following:	**(3 credits)**
BUS 311 / PSY 311 Organizational Behavior	3
BUS 209 Teamwork & Team Building	3
BUS 360 Leadership Theories and Practices	3
BUS 460 Leadership and Ethics	3

Required:	
AFR 301 Air Force Leadership and Management I	3
AFR 302 Air Force Leadership and Management II	3
AFR 401 National Security Affairs/ Prep for Active Duty I	3

Please note that this minor will only require 3 credits completed at FSC (per ROTC agreement)

Required:
POL 110: Introduction to Legal Studies

The four additional courses for the minor may be chosen from the following:

AVN 300W Government in Aviation (Writing Intensive)
AVN 400 Aviation Law
BIO 455 Validation and Regulatory Affairs
BUS 202 Business Law I
BUS 230 Environmental Law
BUS 304 Business Law II
BUS 321 International Law
BUS 352 Employment Law
BUS 406 Business Organization Law
CON 361 Government Building, Environmental Codes and Regulations
CRJ 204 Criminal Law
CRJ 205 Criminal Procedure Law
CRJ 404 Cyber Law and Electronic Espionage
ECO 312 Economics of Non-Profit Organizations
POL 250 American National Government
POL 251 State and Local Government
POL 310 Introduction to Political Theory
POL 399 NYS Legislative Internship
SMT 311 Sport Law

Required: (6 credits)
SOC 200 Introduction to Women's Studies

OR

SOC 282 Introduction to Lesbian, Gay, Bisexual, Transgender (LGBT) Studies	3
SOC 361 Gender Theory	3
Three courses from the following: (9 credits)	
ANT/SOC 240 Women, Men, and Social Change	3

SOC 283 Sex, Gender, and Sexuality	3
EGL 222 Women in Literature	3
EGL 225 Images of Women in Drama	3
EGL 316 Women in Modern American Literature	3
ECO 441 Economics of Gender	3
HIS 222 Women in U.S. History	3
HIS 335 Gender and Technology in Historical Perspective	3
MLG 310 Latin American Women Writers	3
POL 360 Women in Comparative Development	3
PSY 230 Gender Psychology	3
PSY 238 Human Sexuality	3
PSY 307 Psychology of Women	3
RAM 303 Research Experience	3

Applied Psychology

Bachelor of Science Degree

The Applied Psychology program leads to a Bachelor of Science degree with a concentration in Industrial/Organizational Psychology. The program focuses on developing the student's ability to use the core knowledge and analytical skills of the discipline in order to address practical problems important to local business and industry. This program prepares students to be real-life problem solvers in the emerging field of Applied Psychology. Students will learn the foundations of Industrial/Organizational Psychology including personnel management, organizational behavior, and organizational development. The program's career objectives are to prepare students for meaningful and rewarding entry-level positions in business and human resource management. This "hands on" program will develop skills that will enable its graduates to help businesses efficiently recruit, develop, and organize their human resources. Commensurate with the expectations of a BS in Applied Psychology and the current requirements of entry-level jobs in the area of Industrial/Organizational Psychology, students will successfully complete an applied research project or an internship. Furthermore, if the program graduates' educational aspirations include advanced professional training, they will have had the theoretical knowledge, analytical skills, and exposure to effective writing necessary for successful entry and performance in the increasingly competitive and specialized graduate programs across many fields of psychology.

Applied Psychology (BS) Program Outcomes:

- Graduates will have the knowledge and skill to successfully conduct and report research in Applied Psychology.
- Graduates will demonstrate technical competence with regard to general psychological concepts and theories as well as the content and technologies of Applied Psychology.
- Graduates will possess the competencies required to perform entry level positions in business and human resource management.

In addition to curricular options, the College has a vibrant Psychology Club and an honor society (Psi Chi).

Liberal Arts and Sciences	**(63-64 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Humanities (GE)	3
SPE 130 Public Speaking	

OR

SPE 202 Interpersonal Communications (GE)	3
The Arts (GE)	3
American/Other World/Western Civilization History (GE)	3
MTH 116 College Algebra (GE)	4
MTH 110 Statistics (GE)	3
Foreign Language - Level II (GE)	3
PSY 101 Introduction to Psychology (GE)	3
SOC 122 Introduction to Sociology	3
EGL 310 Technical Writing	3
BCS 102 Computer Concepts and Applications	3
Social Science (non-Psychology) electives	6
Math/Science elective by advisement	3-4
Biology with lab (GE)	4
Biology elective with lab	4
Liberal Arts and Sciences electives	6
Psychology Core	**(32 credits)**
PSY 234 Social Psychology	3
PSY 301 Learning	3
PSY 348 Statistics for Psychology	4
PSY 360 Research Methods in Psychology	4
PSY 372 Cognitive Psychology	3
Any 200 level or higher Psychology (PSY) course by advisement OR RAM 303 by advisement	15
Industrial/Organizational Psychology Concentration	**(15 credits)**
PSY 311W Organizational Behavior	3
PSY 331 Industrial/Organizational Psychology	3
PSY 414 Applied Personnel Psychology	3
PSY 442 Applied Psychology Senior Project: Professional Development	3
PSY 443 Applied Psychology Senior Project II: Career Planning	3
Free Electives	**12**

Total Credits:	**122-123**

Degree Type: BS
Total Required Credits: 122-123

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes: The Bachelor's Degree in Applied Psychology does not lead to licensure. All licensure in Psychology in New York State requires an advanced (Master's or Doctoral) degree.

Required:
MLG 305 Hispanic and Latin American Culture and Civilization
SPA 243 Spanish III (Intermediate)

The four additional courses for the minor may be chosen from the following:

ART 303 MesoAmerican Art History
ANT 211 Caribbean Cultures
HIS 280 Caribbean History
HIS 312 Latin American Popular Culture in the 20th Century
MLG 302 Spanish and Latin American Cinema
MLG 310* Latin American Women Writers
MLG 314 Hispanic Fiction to Film
MLG 315 Art, Culture and Civilization of Spain
MLG 320* Latino Writers in the U.S.
MLG 322 The Latin American Novel
SPA 244 Spanish IV (Intermediate)

*Students can take a maximum of two literature courses.

Liberal Arts and Sciences

Associate in Arts Degree

The Liberal Arts and Sciences Department provides its students with a broad-based liberal arts education which prepares them for junior level study in a variety of majors in the Liberal Arts and Sciences such as communications, education, English, history, law, psychology, sociology, social work, medicine, the applied health professions, biology, and all the physical sciences. Liberal Arts and Sciences students are required to fulfill all ten General Education requirements.

A broad range of elective courses in the Liberal Arts and Sciences allows students who are undecided about their majors to experiment with possible choices. Moreover, students who have majors or careers in mind may test those choices by taking elective courses that are prerequisites for their chosen majors.

Each student's schedule of courses is arranged after careful consultation with a program advisor every semester.

Liberal Arts and Sciences (AA) Program Outcomes:

- Graduates will develop the broad-based knowledge and skills necessary for upper division study and success in a variety of career choices.
- Graduates will develop a firm appreciation of culture, ethics, esthetics, cultural awareness, and lifelong learning.

General Education Requirements	**(31 credits)**
EGL 101 Composition I: College Writing (GE)	3
Humanities (GE)	3
The Arts (GE)	3
American/Other World/Western Civilization History (GE)	6
Mathematics (GE)	6
Foreign Language - Level II (GE)	3
Social and Behavioral Science (GE)	3
Natural Science with lab (GE)	4

Consult with your advisor to ensure that the general education graduation requirements are satisfied and are appropriate to your goals.

Program Required Courses	**(31 credits)**
EGL 102 Composition II: Writing About Literature	3
General Education Speech Course (GE)	3
Natural Science with lab elective	4
Social Science elective	3
Arts and Sciences electives*	12
Free Electives	6

*Courses in this category must be from the School of Arts and Sciences only.

Total Credits:	**62**

Degree Type: AA
Total Required Credits: 62

Required:	
VIS 112 2-D Design	3
VIS 116 Digital Media or VIS 110 Drawing I	3
VIS 260 Graphic Design for Non VIS Majors	3

Pick 3-4 (3 courses must be at the 200 level or higher)

Art History and Related Humanities	
ART 200 History of Graphic Design	3
ART 201 Art History: Prehistoric — Middle Ages	3
ART 202 Art History: Renaissance — Present	3
ART 302 Art History: Survey of American Art	3
EGL 269 The Romantic Arts: Art Dance Literature and Music	3

EGL 311 Introduction to Writing for Electronic Media	3
EGL 308 The City in Literature, Art, Film and Theater	3
Fine Arts	
VIS 101 Introduction to Drawing (with VIS permission only)	3
VIS 103 Introduction to Watercolor	3
VIS 104 Introduction to Calligraphy	3
VIS 105 Introduction to Photography (with VIS permission only)	3
VIS 110 Drawing I	3
VIS 120 Drawing II	3
VIS 214 Figure Drawing I	3
VIS 215 Introduction to Animation	3
VIS 216 Painting I	3
VIS 217 Introduction to Printmaking	3
VIS 252 Drawing and Painting Techniques	3
VIS 318 Figure Drawing II	3
Design	
VIS 122 Typography I	3
VIS 115 3D Design	3
VIS 225 Photography I	3
VIS 228 4D Design	3
VIS 238 Illustration for Graphic Designers	3
VIS 240 Publication Design I	3
VIS 242 Publication Design II	3
VIS 250 Photography II	3
VIS 254 Package Design	3
VIS 265 Web Design for Non-Majors	3
VIS 353 Editorial Design	3
VIS 354 Corporate Identity	3
Combine any 3 of the following 1 credit courses:	
VIS 280 Adobe Illustrator	1
VIS 281 Adobe Photoshop	1
VIS 282 Adobe Photoshop for the Web	1
VIS 283 Adobe Dreamweaver	1
VIS 284 Adobe InDesign	1
VIS 285 Basic HTML/CSS for Graphic Design	1

Other VIS 200+ courses may be considered as electives if approved by the Department Chair.

Total Credits: 18-21

Medical Laboratory Science

Bachelor of Science Degree

The BS program in Medical Laboratory Science prepares graduates for a wide range of positions in the clinical laboratory profession. The curriculum includes development of the theoretical knowledge, technical skills, and problem-solving abilities necessary for entry into practice at the technologist level. While enrolled in the program, students experience a supportive learning environment in the Medical Laboratory Science campus laboratories, where the theoretical background introduced during lecture sessions is linked to clinical laboratory practice through the development of technical proficiency. The educational experience includes clinical internships at local affiliated clinical laboratories in which the students are prepared for the transition into the clinical laboratory workplace.

The BS in Medical Laboratory Science is specifically designed to meet the educational requirements for licensure as a Clinical Laboratory Technologist in New York State. As a result, graduates of the program will have the educational background that prepares them for the NYS licensure examination and will be eligible to apply for NYS licensure, a necessity to work in a clinical laboratory in New York State. The BS in Medical Laboratory Science is also designed to meet the accreditation standards outlined by the National Accrediting Agency for Clinical Laboratory Science (NAACLS). Accreditation of the BS program was awarded in 2013 so that graduates of the program are eligible to take the national certification examination offered by the American Society for Clinical Pathology Board of Certification (ASCP-BOC). Passing of this certification examination designates the graduate as MLS (ASCP). Traditionally, both program accreditation and graduate certification eligibility have been necessary components of programs in clinical laboratory science, and the achievement of certification is often a requirement for employment within the field throughout the United States.

All matriculated students must provide evidence of appropriate immunizations, as well as titers for measles, mumps, rubella, varicella, and Hepatitis B. It is strongly recommended that students who test negative for Hepatitis B receive the appropriate vaccine. A Mantoux test for tuberculosis is required on a yearly basis during program enrollment. Each student is also required to participate in a liability insurance policy provided by the college which will afford malpractice coverage during the time enrolled in the MLS curriculum. Students are responsible for providing their own transportation to and from the clinical sites. A laboratory fee that covers a lab coat, personal protective equipment, and other general supplies for use during laboratory sessions will be collected from students enrolled in all laboratory courses offered in the MLS department.

Students enrolled in the MLS program will have the opportunity to participate in the MLS Club on campus.

Please refer to the Safety and Technical Standards in the front section of the College catalog.

Typical Employment Opportunities

Graduates may obtain employment as medical laboratory scientists/clinical laboratory technologists in hospitals, private clinical laboratories, physician office laboratories, research and industry laboratories, and in the sales, development and technical support of clinical laboratory equipment and supplies.

Medical Laboratory Science (BS) Program Outcomes:

- Graduates will be prepared with the knowledge and technical skills to obtain a NYS license and national certification at the technologist level of practice.
- Graduates will be proficient in performing the full range of clinical laboratory tests in areas such as hematology, clinical chemistry, immunohematology, microbiology, serology/immunology, coagulation, molecular, and other emerging diagnostics.

- Graduates will be prepared to play a role in the development and evaluation of test systems and interpretive algorithms.
- Graduates will have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed or performed
- Graduates will possess basic knowledge, skills, and relevant experiences in: Communications to enable consultative interactions with members of the healthcare team, external relations, customer service and patient education; Financial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory services; Information management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information, and; Research design/practice sufficient to evaluate published studies as an informed consumer.

This program is accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS), 5600 N. River Road, Suite 720, Rosemont, IL 60018-5119, www.naacls.org

Liberal Arts and Sciences	**(68 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
BIO 130 Principles of Biology (GE)	4
BIO 166 Principles of Human Anatomy & Physiology (GE)	4
BIO 343/344 Genetics with Laboratory	4
BIO 348/349 Cell Biology with Laboratory	4
BIO 441 Molecular Biology	5
CHM 152 General Chemistry I	4
CHM 153 General Chemistry II	4
CHM 260 Fundamentals of Organic Chemistry	4
CHM 380 Biochemistry	4
MTH 110 Statistics (GE)	3
MTH 117 Precalculus with Applications	4
American/Other World/Western Civilization History (GE)	3
Social and Behavioral Science (GE)	3
The Arts (GE)	3
Basic Communication (GE)	3
Foreign Language (GE)	3
Humanities (GE)	3

Required: Medical Laboratory Science	**(58 credits)**
MLS 105 Medical Laboratory Techniques	2
MLS 227 Immunology and Serology	4
MLS 236 Histological Techniques	1
MLS 320 Hematology I	4
MLS 325W Laboratory Management & Informatics	3
MLS 330 Immunohematology I	4
MLS 340 Clinical Chemistry I	4
MLS 350 Clinical Microbiology I	4
MLS 351 Clinical Microbiology II	4
MLS 420 Hematology II	4
MLS 421 Molecular Pathology	3
MLS 425 Laboratory Research & Education	3
MLS 430 Immunohematology II	3
MLS 440 Clinical Chemistry II	2
MLS 450 Clinical Microbiology III	3
MLS 460L Medical Laboratory Science Capstone	1
MLS 483 Practicum in Molecular Pathology	1
MLS 491 Immunohematology Practicum	2
MLS 492 Clinical Chemistry & Serology Practicum	2
MLS 493 Hematology & Urinalysis Practicum	2
MLS 494 Microbiology Practicum	2
Total Credits:	**126**

The grade of "C" or better is required in all courses designated "MLS" as well as all science and math courses.

Degree Type: BS
Total Required Credits: 126

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Global Business Management

Bachelor of Science Degree

The Bachelor of Science in Global Business Management is designed to prepare students for the rapidly growing and evolving field of global business. In today's increasingly interlinked world economy, virtually all business involves international human resources, management, marketing, supply chain management, and finance. In addition, information technology and legal systems must be understood and coordinated on a global basis. The Global Business Management program, through required and a wide array of elective courses allows students to complete degree requirements focusing on key aspects of international business. Students in the program will also develop an appreciation and understanding of other cultures through foreign language and area studies courses, which allow them to explore countries and languages of particular interest. As part of the Global Business program, study at campuses outside the United States is strongly encouraged.

Typical Employment Opportunities

International Marketing/Sales/Advertising
Management of Multinational Corporations (MNCs)

International Human Resource Management
Global Strategic Planning Management
Product/Service Development
Product/Brand Management
Procurement/Purchasing Management
Quality Management
International Supply Chain Management
Strategic Sourcing
International Logistics
Warehouse and Distribution Center Management
Site and Outsourcing Management
Production Management in Manufacturing and Service Enterprises

Global Business Management (BS) Program Outcomes:

- Graduates will be effective communicators and possess critical thinking skills necessary to analyze and solve problems in a global context.
- Graduates will have an appreciation of multiple cultures and learn to work effectively in a multi-cultural and diverse environment in different areas of the world.
- Graduates will have an understanding of global financial theories and systems, global markets, and legal issues in an international environment.
- Graduates will have the ability to work well in global teams and understand the social context of businesses in a global society.

Liberal Arts and Sciences	**(61 credits)**
EGL 101 Composition 1: College Writing (GE)	3
EGL 102 Composition 2: Writing About Literature	3
Basic Communication (GE)	3
Humanities (GE)	3
The Arts (GE)	3
American/Other World/Western Civilization History (GE)	3
MTH 117 Precalculus with Applications or MTH 129 Precalculus (GE)	4
ECO 156 Macroeconomics (GE)	3
ECO 157 Microeconomics	3
Natural Science (GE)	3
Foreign Language II (GE)	3
Area Studies or Foreign Language by advisement	6
Math 110 Statistics (GE)	3
Politics Elective by advisement	3
PHI 207 Business Ethics	3
Economics elective by advisement	3
Arts & Sciences electives	9

Required Major Courses	**(51 credits)**
BUS 101 Accounting I	3
BUS 102 Accounting II	3
BUS 109 Management Theories & Practices	3
BUS 131 Marketing Principles	3
BUS 202 Business Law I	3
BUS 280 International Business	3
BUS 300 Operations Management	3
BUS 301 Corporate Finance	3
BUS 320 International Marketing	3
BUS 321 International Law	3
BUS 322 International Management	3
BUS 366 International Human Resource Management	3
BUS 409 Strategic Management	3
BUS 473 Global Finance	3
BUS 494 Seminar in Global & International Business Management	3
BCS 102 Computer Concepts & Applications	3
BCS 300 Management Information Systems	3
Electives	**(9 credits)**
Global Business Elective	6
Free elective	3
Total Credits:	**121**

Degree Type: BS
Total Required Credits: 121

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Core:	**(9 credits)**
SOC 122 Introduction to Sociology	

OR

SOC 223 Social Issues and Institutions	3
SOC 360 Sociological Theory	3
SOC 366 Sociological Research Methods	3

Any 200 level or higher Sociology Electives (choose from the following courses):
(9 credits)

RAM 303 Research Experience	3
SOC 200 Introduction to Women's Studies	3
SOC 201 Sociology of Education	3

SOC 220 Sociology of Aging	3
SOC 224 Urban Sociology	3
SOC 225 Sociology of the Family	3
SOC 228 Society and Health	3
SOC 229 Race and Ethnic Relations	3
SOC 231 Multiculturalism	3
SOC 235 Mass Media and Popular Culture	3
SOC 236 Sociology of the Military	3
SOC 237 The Sociology of Popular Music	3
SOC 238 Youth Culture	3
SOC 240 Women, Men and Social Change	3
SOC 245 Technology, Society and Social Change	3
SOC 263 Immigration Past and Present	3
SOC 270-279 Topics in Sociology	3
SOC 282 Introduction to Lesbian, Gay, Bisexual, and Transgender (LGBT) Studies	3
SOC 283 Sex, Gender and Sexuality	3
SOC 303 Sociology of Work and Occupation	3
SOC 304 Sociology of Leadership	3
SOC 305 Culture and Technology	3
SOC 309 Sport in Society	3
SOC 311 African American Leadership	3
SOC 325 Social Inequality	3
SOC 326 Visual Sociology	3
SOC 329 Social Movements	3
SOC 330-339 Seminar in Sociology	3
SOC 342 Deviance, Crime, Sex and Drugs	3
SOC 350 Global Social Change	3
SOC 351 Global Health Systems	3
SOC 361 Gender Theory	3
SOC 407 Field Research in Sociology	3
SOC 480-482 Research Internship I	3
SOC 485-487 Research Internship II	3

Core: (9 credits)

Survey Course - One course from the following part one survey courses offered by the Department:

EGL 201 English Literature: Old English through the 18th Century
EGL 203 American Literature: Beginnings to 1865
EGL 206 World Literature: Early Classics

Survey Course - One course from the following part two survey courses offered by the Department:

EGL 202 English Literature: 19th Century to the Present
EGL 204 American Literature: 1865 to the Present
EGL 207 World Literature: The Moderns

Genre Course - One course from the following genre courses offered by the Department:

EGL 210 Introduction to Drama
EGL 212 Introduction to Fiction
EGL 214 Introduction to Poetry

Electives: (9 credits)

Three courses must be chosen from this list; at least two of the three courses must be 300-level:

A third 200-level survey course (see above), in addition to the two core survey courses

EGL 200 Shakespeare
EGL 216 Creative Writing
EGL 222 Women in Literature
EGL 225 Images of Women in Drama
EGL 228 Classics and Mythology in Popular Culture
EGL 232 Immigrant Literature: Voices of Multicultural America
EGL 240 Themes in Science Fiction in Film and Literature
EGL 242 Film and Literature
EGL 244 Classics of Supernatural Film and Literature
EGL 246 Themes in Literature
EGL 250 Young Adult Literature
EGL 266 Fantasy in Literature and Film
EGL 269 The Romantic Arts: Art, Dance, Literature & Music
EGL 302 Nineteenth Century English Novel
EGL 307 Special Topics in Literature
EGL 308 The City in Literature, Art, Film and Theatre
EGL 309 Voices of Black America in Poetry, Prose and Song
EGL 312 Major Authors in American Literature
EGL 314 Major Authors in World Literature
EGL 316 Women in Modern American Literature
EGL 317 Studies in Shakespeare
EGL 319 Modern Drama

EGL 322 Leadership in Fact, Fiction and Film
EGL 323 Major Authors in British Literature
EGL 330 Ancient Greek Tragedy: Aeschylus, Sophocles and Euripides
EGL 331 Death, Madness and Sex: The Victorians

Geographic Information Systems

Bachelor of Science Degree

Bachelor of Science degree in Geographic Information Systems (GIS) - This is an applied degree in geography and the spatial sciences that aims to generate workforce-ready graduates who are well trained in the technology, theory, and application of geographic information systems. The GIS program provides students with critical thinking skills such as analyzing, synthesizing, visualizing and evaluating data by way of digital maps and/or map imagery to solve problems related to urban and regional design, marketing and industrial location, transportation, agriculture, forestry, environmental systems, engineering, epidemiology, emergency services, crime analysis and utilities.

Completion of the degree would count toward the educational requirement for GISP (GIS Professional) Certification.

Typical Employment Opportunities

GIS Analyst
Geospatial Intelligence Analyst
Geospatial Application Developer
Urban and Regional Design
Agriculture Technology
Natural Resources Analyst
GIS Network Engineer
Epidemiology
Emergency Services
Crime Analysis
Utilities
Local and National Government
GIS Energy Analyst
GIS Transportation and Logistics Analyst

Geographic Information Systems (BS) Program Outcomes:

- Graduates will utilize the scientific method and various informational and analytical tools for solving problems related to human and physical geography.
- Graduates will apply understanding of the importance of space and place in key issues facing contemporary society, combined with the ability use data to solve pressing problems in the environmental sciences, salesforce management, public health, public policy, etc.
- Graduates will debate, quantify, and qualify the interrelationships between human, physical, and biotic systems on the Earth's surface.
- Graduates will integrate spatial analysis into interdisciplinary research problems.
- Graduates will compose essays that: 1) cogently convey technical information retrieved through independent research; 2) rely on print and/or digital sources of a scholarly nature; and 3) are generally free of grammatical, spelling, punctuation and other errors.

Liberal Arts and Sciences	**(42 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
MTH 110 Statistics (GE)	3
American History (GE)	3
Western Civilization History (GE)	3
Humanities (GE)	3
Arts (GE)	3
Foreign Language (GE)	3
Natural Science (GE)	3
Mathematics (GE)	3
Liberal Arts & Sciences Technical Electives	6
Liberal Arts & Sciences Electives	6

Free Electives	**(6 credits)**

Required: Lower Division	**(16 credits)**
GEO 110 Maps and Map Analysis (GE)	3
GIS 231 Geospatial Research Methods	3
GEO 211 The World and Its Peoples (GE)	3
GIS 222 Geovisualization I	4
GEO 201 Physical Geography OR	
GEO 222 Human Geography	3

Required: Upper Division	**(57 credits)**
GIS 321 Geovisualization II	3
GIS 331 Spatial Analysis I	3
GIS 341 Geoprocessing I	3
GIS 342 Geodatabase Management	3
GIS 491 Senior Seminar OR	
GIS 492 Internship	3
Technical Electives 300-400 Level	21
Free Electives 300-400 Level	12
300-400 Level Liberal & Science Electives	9

Total Credits	**121**

Degree Type: BS
Total Required Credits: 121

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes:
Liberal Arts Technical Electives

GEO 201 Physical Geography

GIS 201 Mathematical Principles in Geography

GEO 222 Human Geography

GEO 231 Europe and Its Peoples

GEO 232 North America and its Peoples

GEO 290 Topics in Geography

Technical Electives 300-400 Level

GIS 301 GIScience

GIS 302 Remote Sensing

GIS 321 Geovisualization II

GIS 322 Geovisualization III

GIS 332 Spatial Analysis II

GIS 431 Spatial Analysis III

GIS 432 Location Modeling and Analysis

GIS 441 Geoprocessing II

GEO 330 Environmental Interactions

GEO 323 Urban Geography

GEO 325 Globalization and Sustainability

GEO 390 Special Topics

HIS 306 Transformation of America

HIS 310 Technology and Society Russia-1917-Present

HIS 335 Gender and Technology in Historical Perspectives

HIS 342 The History of Television

PHY 304 Big Data and Society

POL 370 International Relations

POL 371 Geopolitics

POL 320 Internet Politics

SOC 326 Visual Sociology

Required:
MLG 306 Italian Culture and Civilization
ITA 122 Italian II (Elementary)

Four additional courses for the minor may be chosen from the following:

ART 202 Survey of Art History: Early Renaissance to the Present
ART 242 Italian Renaissance Art
BUS 320 International Marketing
HOR 228 Current Horticultural Topics
ITA 125 Italian for Business
ITA 223 Italian III (Intermediate)
ITA 224 Italian IV (Intermediate)
ITA 301 Italian V (Advanced)
ITA 302 Italian VI (Advanced)
SOC 263 Immigration Past and Present
MLG 201 Italian Food, Culture, and History
MLG 301 Italian Cinema (In English)
MLG 311 Italian American Experiences
POL 265 Comparative Politics
POL 273 Italian Politics and Society
RAM 303 Research Experience (Italian Focus)

Students are encouraged to study abroad in Italy. Courses taken in Italy will be reviewed by the coordinator and considered toward the minor requirements.

Bioscience

Bachelor of Science Degree

The Biology Department offers a baccalaureate in Bioscience designed to produce versatile graduates prepared for a wide range of positions in the rapidly developing bioscience field or for entry into graduate or professional programs in the life and health sciences. This program combines a strong foundation in the biological sciences and supporting subjects (emphasizing both theoretical concepts and hands-on laboratory methods) with sequences of Technical Electives that enable the student to acquire advanced preparation in one or more applications of bioscience. Technical Electives are selected with advisement according to the objectives of the individual student, and can be drawn from higher level Biology courses or from other academic majors at the College, thus providing the opportunity to gain breadth and depth in a variety of disciplines.

The Biology faculty are committed to supporting student learning in the classroom and laboratory, and to fostering student scholarly activity. Recommended students in Bioscience have the opportunity to gain work experience in an elective credit-bearing internship. This can be through placement into a pharmaceutical, nutraceutical, or cosmetic manufacturing facility, forensic laboratory, genetic testing laboratory, veterinary facility, research laboratory, or other bioscience-related institution off campus, or by invitation into an on-campus credit-bearing research internship under the mentorship of a Biology faculty member.

Typical Employment Opportunities and Graduate/Professional School Options

Examples of career paths and graduate/professional school opportunities for which this program can provide preparation are presented below, with sequences of Technical Electives that are recommended to provide the background necessary to pursue these career or postgraduate career goals:

Bioinformatics

(computer-based mapping and comparison of genomic and other biologically-derived data, with applications such as predicting the function of gene products and developing pharmacogenomic treatments of disease): job titles include Scientific Curator, Gene Analyst, Protein Analyst, Structural Analyst, Molecular Modeler, Biostatistician, Pharmacogenetician. Recommended Technical Electives: Computer Concepts/Problem Solving, Foundations of Computer Programming I & II, UNIX Operating System, Database, Perl Programming

Biopharmaceutical

(pharmaceutical, nutraceutical, and cosmeceutical production, ranging from fermentation and raw material extraction to processing and finishing): job titles include Compounding Supervisor, Process Development Associate, Production Planning Scheduler, Quality Assurance Auditor, Quality Control Analyst, Regulatory Affairs Specialist. Recommended Technical Electives: Management Theory & Practices, Contemporary Business Communications, Occupational Safety, Industrial Hygiene, Biopharmaceutical Regulation, Validation & Regulatory Affairs

Bioscience Laboratory Research & Analysis

(life sciences research support, biotechnology research & development, FDA regulated industry production): job titles include Bioscience Laboratory Associate, Bioscience Laboratory Technician, Food Quality Laboratory Technician, Microbiologist, Development Technician, Quality Control Receiving Inspector. Recommended Technical Electives: Organic Chemistry I & II, Biochemistry, Lab Management & Informatics, Laboratory Research/ Education

Graduate/Professional School Admissions:

for those students specifically seeking entry into graduate programs in the life sciences or into professional programs in the health sciences, a sequence of Technical Electives can be chosen to earn the academic

credentials necessary to meet admissions requirements of such programs. Recommended Technical Electives: Calculus I with Applications, College Physics I & II, Organic Chemistry I & II, Biochemistry, Lab Management & Informatics. (See Pre-Health Professions Advisement on the Farmingdale State College website.)

Note that training and licensure in Molecular Diagnostics (Molecular Pathology) is available through the BS in Medical Technology rather than through Bioscience.

Bioscience (BS) Program Outcomes:

- Graduates will have the ability to effectively seek out and process scientific information, including primary sources and genomic databases.
- Graduates will demonstrate mastery of basic laboratory skills, expertise in the operation of modern instrumentation, adherence to laboratory safety standards, and good practices.
- Graduates will be able to process experimentally derived data and to communicate results effectively by written, graphical, digital, and verbal means.

Liberal Arts and Sciences	**(32 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
CHM 152 General Chemistry Principles I (GE)	4
CHM 153 General Chemistry Principles II (GE)	4
MTH 110 Statistics (GE)	3
Humanities (GE)	3
The Arts (GE)	3
American/Other World/Western Civilization History (GE)	3
Foreign Language (GE)	3
Social and Behavioral Science (GE)	3
Bioscience Core	**(36-37 credits)**
BIO 130 Biological Principles I	4
BIO 131 Biological Principles II	4
BIO 210 Introduction to Bioscience	3
BIO 212 Bioscience Laboratory Practices	2
300-level Ecology or Evolution or Organismal Biology core course. (Chosen from Approved Technical Electives by advisement)	3-4
BIO 316 General Microbiology or	
BIO 318 Medical Microbiology	4
BIO 343 Principles of Genetics	3
BIO 344L Principles of Genetics Lab	1
BIO 345 Introduction to Bioinformatics	3
BIO 348 Cell Biology	3
BIO 349L Cell Biology (Lab)	1
BIO 441 Molecular Biology	5
Support Courses	**(11-12 credits)**
BCS 102 Computer Concepts/ Applications	3
CHM 260 Fundamentals of Organic Chemistry	
or	
CHM 270 Organic Chemistry	4-5
MTH 117 Precalculus with Applications	
or	
MTH 129 Precalculus or higher	4
Technical Electives	**(25-35 credits)**

Technical Electives must include at least 1 course at the 400-level earning at least 3 credits, and 2-3 courses at the 300-level or above earning a total of at least 7 credits (with all appropriate prerequisites satisfied); the remaining 15-25 credits can be at any level, although additional upper division courses may be selected to fulfill 45 upper division credit SUNY requirement)

Free Electives (300+ level): 0-12

Total Credits: 120-122

Degree Type: BS
Total Required Credits: 120-121

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes: 1. One Writing Intensive course and one Applied Learning course in any of the above courses is required for graduation. 2. Students must complete a minimum of 45 credits of 300- or 400- level courses to graduate. 3. Technical Electives may be chosen from selected courses in the departments of Anthropology (ANT), Biology (BIO), Business (BUS), Chemistry (CHM), Computer Systems (BCS), Horticulture (HOR), Industrial Technology (IND), Mathematics (MTH), Medical Laboratory Science (MLS), Physics (PHY), and Psychology (PSY). Courses which satisfy technical elective requirements are listed in the Bioscience Student Advisement Sheet. 4. To continue in the Bioscience BS degree program, a grade of C- or better must be maintained in every Biology and Chemistry course that serve as prerequisites for other courses in the Bioscience major. Earning a grade of less than C- in two required Biology and/or Chemistry courses will result in suspension from the Bioscience curriculum for at least one year. If a student fails to attend the first three laboratory sessions in a course, they may be disenrolled from the course (both lecture and lab, as applicable). Exceptions to these policies can only be made by the Chair of the Biology Department when extenuating circumstances exist.

Required Courses:
BCS 120 Foundations of Computer Programming I
BCS 160 Computers, Society, and Technology
BCS 230 Foundations of Computer Programming II
Choose 3 out of 5 of the following courses
BCS 130 Website Development I
BCS 215 UNIX Operating Systems
BCS 260 Introduction to Database Systems
BCS 262 Data Communications

BCS Elective – To be determined in consultation with the Department Chair

When it is deemed necessary, substitutions may be made at the discretion of the department chair.

Computer Engineering Technology

Bachelor of Science Degree

The Bachelor of Science degree program in Computer Engineering Technology is designed to address the ever increasing need for graduates possessing skills in both computer programming and computer hardware (digital electronics), and in the underlying principles of networking.

The program establishes a sound foundation in applied mathematics and physics including the necessary principles of electrical engineering technology, computer engineering technology, elective choices in the arts, sciences and the humanities. Transfer admission is easily available to students from related degree programs.

Graduates of this program, engineering technologists, will be well prepared to fill the wide range of engineering technology positions which rely upon an understanding of hardware and software applications of digital, microprocessor, microcontroller, and computer based systems.

This program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org

Computer Engineering Technology (BS) Program Outcomes:

- Graduates will be technically competent and have the necessary skills, and experience with modern tools of their discipline to enter careers where they can apply their knowledge in the areas of networking and data communications, microprocessors, digital systems, and technical project management.
- Graduates will exhibit good communication skills, an ability to work collaboratively as a member of a team, as well as a recognition of the need for life-long learning and a commitment to continuous improvement.

Student Learning Outcomes:

Upon completion of the program students will be able to:

1. Apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, or technology to solve broadly-defined engineering problems appropriate to the discipline

2. Design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline

3. Apply written, oral, and graphical communication in broadly defined technical and nontechnical environments; and an ability to identify and use appropriate technical literature

4. Conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes

5. Function effectively as a member or leader on a technical team

ABET Data

Liberal Arts and Sciences	(61 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
EGL 310 Technical Writing	3
MTH 129 Precalculus (GE)	4
MTH 130 Calculus I with Applications (GE)	4
MTH 236 Calculus II with Applications (GE)	3
MTH 245 Linear Algebra	3
MTH 322 Advanced Mathematical Analysis	3
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II	4
ECO 321 Engineering Economics (GE)	3
The Arts (GE)	3
Foreign Language (GE)	3
Humanities (GE)	3
American/Other World/Western Civilization History (GE)	3
Liberal Arts and Sciences Electives	12
Required Major Courses	**(65 credits)**
BCS 120 Foundations of Computer Programming I	3
BCS 215 UNIX Operating Systems	3
BCS 230 Foundations of Computer Programming II	3
BCS 370 Data Structures	3
EET 105 Introduction to Digital Electronics	2
EET 110 Computer Applications	2
EET 111 Electric Circuits I	4
EET 113 Electric Circuits II	4
EET 118 Semiconductor Devices and Circuits	4
EET 223 Digital Electronics	4
EET 224 Amplifiers	4
EET 251 Microprocessors	3
EET 316 Digital Design	4
EET 418 Microprocessor Interfacing & Control	4
EET 440 Data Communications and Networking	4
EET 441 Advanced Networking	4
EET 450 Design Concepts	2
EET 452W Design Project	2
Technical Electives*	6
Total Credits:	**126**

*Technical Electives must be selected from EET 311, EET 317, EET 327, EET 426, or other courses in areas of student interest with Departmental approval.

Degree Type: BS
Total Required Credits: 126

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Architectural Engineering Technology

Bachelor of Science Degree

The Architectural Engineering Technology (ARC) program synthesizes the aesthetic, technical and functional elements of building design and construction. The academic thrust of the program is applied technology. The students in this program will be educated in the process of building design from concept to completion.

The purpose of the Architectural Engineering Technology program is to prepare students for careers in architectural, structural, and mechanical aspects of the design and construction of buildings. The students will be educated in the process of carrying design projects from schematics through construction. In addition to preparing students for meaningful and rewarding careers at the Bachelor's level, the program will also prepare students for successful entry in the professional and non-professional graduate programs in architecture and other areas.

Architectural Engineering Technology (BS) Program Outcomes:

- Graduates will have broad background in one or more areas of design: architectural, construction, site and structural in addition to history, theory and technology. Graduates will assume professional positions in architectural and building construction industry.
- Graduates will be creative problem solvers in industry.
- Graduates will be effective communicators in professional setting.
- Graduates will adapt state of the art technologies to improve processes in industry.
- Graduates will pursue continuing education and professional development opportunities to function effectively as a member or leader on a technical team.

This program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org

Graduates may sit for the Architecture Registration Exam (A.R.E in New York State after working under a registered architect for four years and be licensed s an architect with an additional three years of work under a registered architect.

Potential Employment/Employment Demand

Employment in the architectural field is strongly tied to the level of local construction, particularly new residential structure such as office buildings, shopping centers, schools and health care facilities. The boom in new construction in the region is expected to continue for a considerable time in the future. As the stock of buildings age, demand for remodeling and repair work should also grow. The needed renovations and rehabilitation of old buildings is expected to provide many job opportunities according to the Occupational Outlook Handbook. Also according to the Occupational Outlook Handbook, employment in this field will grow as fast as the average for all occupations during this period.

Student club - Architecture and Construction Technology (ACT) Club

Student Learning Outcomes: Architectural Engineering Technology

1. An ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, or technology to solve broadly-defined engineering problems

2. An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to Architectural Engineering Technology

3. An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes

4. An ability to function effectively as a member or leader on a technical team

5. An ability to apply written, oral, and graphical communication in both technical and nontechnical environments; and an ability to identify and use appropriate technical literature

ABET Data

Liberal Arts and Sciences	(61 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
EGL 310 Technical Writing (GE)	3
MTH 129 Precalculus (GE)	4
MTH 130 Calculus with Applications (GE)	4
MTH 236 Calculus II with Applications	3
Liberal Arts Elective	12
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II	4
Liberal Arts Elective (upper level)	3
ECO 321 Engineering Economics	3
The Arts (GE)	3
Social & Behavioral Science (GE)	3
Humanities (GE)	3
American/Other World/Western Civilization History (GE)	3
Foreign Language (GE)	3

Required: Architectural Engineering Technology	(64 credits)
CON 106 Statics	3
ARC 131 Introduction to Graphics	4
CON 161 Materials & Methods of Construction I	3
CON 162 Materials & Methods of Construction II	3
CON 207 Elements of Strength of Materials	3
ARC 255 Architectural Design I	4
ARC 257 Architectural Design II	4
ARC 263 Mechanical, Electrical, Plumbing & Energy Systems in Buildings	3
CON 302 Soils, Foundations & Earth Structures	3
ARC 310 Construction Design	4
CON 357 Quantity Surveying and Costing	3

ARC 350W Architectural Theory & Design Factors	3
CON 361 Governmental Building & Environ Codes & Regulations	3
ARC 362 History of Western Architecture	3
ARC 364 Site Design and Construction	3
ARC 376 Architectural Design III	4
CON 409 Structural Design	3
ARC 476 Architectural Design IV	4
ARC 486 Architectural Design V	4
Total Credits:	**125**

Degree Type: BS
Total Required Credits: 125

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

No more than 3 credits (1 course) at the 100-level

At least 6 credits (2 courses) at the 300 level or above, including RAM 303

At least 9 credits (3 courses) must be taken at Farmingdale State College

All courses except RAM 303 must be in Politics (POL)

Selection of courses will depend on the interests of the student

Construction Management Engineering Technology

Bachelor of Science Degree

The Construction Engineering Management Technology program has been designed to respond to the need for skilled professionals possessing the level of sophistication necessary to accommodate state-of-the-art technology which has impacted the construction industry. It will incorporate extensive use of the computer in the technical specialty together with upper level mathematics, economics, and communications.

The Construction Engineering Management Technology program encompasses study in traditional engineering technology offerings (Statics, Strength of Materials, Structural design Materials testing, etc.). The program is complemented with offerings in project control, scheduling, cost control quality control, construction productivity, and economics. It prepares students for employment in an emerging occupation within the construction industry. Graduates will possess expertise in construction and specialized administrative skills commensurate with the requirements dictated by the industry to coordinate and execute the construction of the design created by the engineer and the architect.

This program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org.

In New York State, graduates may site the First Engineering (FE) Exam upon graduation and the Professional Engineering (PE) exam after working six years under a professional engineer.

Construction Management Engineering Technology (BS) Program Outcomes:

- Graduates will have broad background in one or more areas of infrastructure and building construction, estimating, cost control, project management and technology. Graduates will assume leadership positions in the construction industry.
- Graduates will be creative problem solvers in industry.
- Graduates will be effective communicators in professional setting.
- Graduates will adapt state of the art technologies to improve processes in industry.
- Graduates will pursue continuing education and professional development opportunities to develop a leader or member of a technical team.

Potential Employment Opportunities

Project Manager
Assistant Project Manager
Construction Manager
Project Super

Student Club – Architecture and Construction Technology (ACT) Club

Student Learning Outcomes: Construction Management Engineering Technology

1. An ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, or technology to solve broadly-defined engineering, technical, or scientific problems appropriate to Construction Engineering Management Technology

2. An ability to design systems, components, processes, procedures, or programs meeting specified needs for broadly-defined engineering, technical, or scientific problems appropriate to Construction Management Engineering Technology

3. An ability to apply written, oral, and graphical communication in both technical and nontechnical environments; and an ability to identify and use appropriate technical literature

4. An ability to develop and conduct standard tests, measurements, experiments, or test hypotheses and to analyze and interpret the results and use scientific judgment to draw conclusion and to improve processes

5. An ability to function effectively as a member or leader on a technical team that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty

6. An ability to understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts

ABET Data

Liberal Arts and Sciences	(61 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
EGL 310 Technical Writing (GE)	3
MTH 129 Precalculus (GE)	4
MTH 130 Calculus with Applications (GE)	4
MTH 236 Calculus II with Applications	3
MTH 390 Methods in Operations Research	3
PHY 135 Physics I (GE)	4
PHY 136 Physics II	4
Social Science Elective (GE)	3
ECO 321 Engineering Economics	3
The Arts (GE)	3
Humanities (GE)	3

American/Other World/Western Civilization History (GE)	3
Foreign Language (GE)	3
Liberal Arts & Sciences Electives	12

Required: Construction Management	(65 credits)
CON 103 Surveying	3
CON 106 Statics	3
ARC 131 Introduction to Graphics	4
BUS 109 Management Theory and Practices	3
CON 161 Materials & Methods of Construction I	3
CON 162 Materials & Methods of Construction II	3
CON 207 Elements of Strength of Materials	3
ARC 263 Mechanical, Electrical, Plumbing & Energy Systems in Buildings	3
CON 302 Soils, Foundations & Earth Structures	3
CON 303 Hydraulics	3
ARC 310 Construction Design	4
CON 350 Introduction to Construction Engineering	3
CON 355 Construction Management Financial and Accounting Principles	3
CON 357 Quantity Surveying and Costing	3
ARC 364 Site Design and Construction	3
CON 401W Construction Project Mgmt & Scheduling	3
CON 402 Civil Engineering Materials	3
CON 406 Advanced Project Planning and Scheduling	3
CON 409 Structural Design	3
Technical Elective**	3
CON 496 Capstone Project	3
Total Credits:	**126**

Degree Type: BS
Total Required Credits: 126

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

**CON 361, IND 308 or CON 299 preferred. See advisor for additional technical electives.

Applied Mathematics

Bachelor of Science Degree

The Applied Mathematics Bachelor of Science program provides a solid background in mathematics and its applications within a highly supportive and stimulating learning environment. Mathematics is the language of Science and Technology. Thus the Applied Mathematics program is at the very heart of the mission of Farmingdale State College. Students benefit from small class size, personal attention, and a network of social and academic opportunities including our Mathematics Club, the Center for Applied Mathematical Sciences, the Mathematics Learning Center, and the Undergraduate Teaching Assistant program. Students will acquire strong quantitative and analytic skills, incorporating the use of powerful state-of-the art computational technology in advanced problem solving and research projects.

All students will complete a major project in our Seminar in Applied Mathematics which will involve collaborative work. The students have a choice of two tracks within the Bachelor of Science program: the Traditional Track and the Financial Mathematics Track. Both of these tracks share a common core of required General Education courses and of required Mathematics courses. Students in the Traditional Track choose additional elective courses in mathematics and in other fields of their interest, while students in the Financial Mathematics Track must take a set of prescribed courses in financial mathematics and in related fields such as Economics, Business, as well as some elective courses. (See the Program of Study)

Students can combine the Bachelor of Sciences in Applied Mathematics (Major) with a Minor in another field, or even obtain a Dual Major in mathematics and a related field. These minors and dual majors enable students to pursue inter-disciplinary interests which enhance future employment opportunities.

Applied Mathematics graduates possess the skills to enter a wide variety of excellent careers. An applied mathematics degree provides the background for jobs in business, telecommunications, finance, actuarial science, operations research, transportation, and education. Appropriate elective courses in areas such as computer science, engineering technology, economics, or natural sciences permit students to apply their mathematical knowledge to these fields, opening employment opportunities in additional careers, including pharmaceutical research, information services, and quality control. Applied Mathematics graduates are also well prepared to continue their studies at the graduate level in various fields of applied mathematics, finance, applied sciences, or mathematics education.

Typical Employment Opportunities

Financial Analyst
Economical Analyst
Marketing Researcher
Actuarial Assistant
Statistician
Bio Statistician
Environmental Mathematician
Insurance Manager
Secondary Education Teacher
Information Consultant
Imaging Scientist
Quality Control Manager

Applied Mathematics (BS) Program Outcomes:

- Graduates will know the methods and techniques of applied mathematics and will understand the underlying theoretical foundations
- Graduates will have the knowledge and skills needed to be productive problem solvers and critical thinkers
- Graduates will possess both depth and breadth in the mathematical sciences
- Graduates will possess important contextual skills including computer skills, communication skills, and the ability to collaborate with others on mathematical projects

Liberal Arts and Sciences Courses	(30 credits)

EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Humanities (GE)	3
The Arts (GE)	3
American History/Other World/ Western Civilization (GE)	3
Foreign Language (GE)	3
Social and Behavioral Science (GE)	3
Natural Science (GE)	3
General Education Elective (GE)	3
Liberal Arts and Sciences Elective	3
Required Mathematics Courses for both Tracks	**(37 credits)**
MTH 150 Calculus I (GE)	4
MTH 151 Calculus II (GE)	4
MTH 245 Linear Algebra	3
MTH 252 Calculus III	4
MTH 253 Differential Equations	4
MTH 290 Methods of Proof in Advanced Mathematics	3
MTH 341 Probability	3
MTH 354 Principles of Real Analysis	3
MTH 365 Vector Calculus	3
MTH 405 Seminar in Applied Mathematics	3
BCS 120 Foundations of Computer Programming I	3
Traditional Applied Mathematics Track	**(54 credits)**
MTH 250 Introduction to Graph Theory and Combinatorics	3
Math Upper Division Electives	6
Math Related Electives	15
General Electives	15
Upper Division Electives	15
Financial Mathematics Track	**(54 credits)**
MTH 246 Introduction to Financial Mathematics	3
MTH 346 Continuous-Time Finance	3
MTH 490 Topics in Applied Mathematics	3
BUS 101 Accounting I	3
ECO 380 Econometrics	3
Math Related Elective	12
General Electives	15
Upper Division Electives	12
Total Credits:	**121**

(Financial Engineering)

This program fulfills all Liberal Arts and Sciences requirements.

Degree Type: BS
Total Required Credits: 121

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Professional Communications

Bachelor of Science Degree

The Bachelor of Science degree program in Professional Communications prepares its graduates for employment with companies and organizations in all of those fields that rely on effective communication, including mass media (newspapers, radio, television), website and social media, health delivery systems, the biopharmaceutical industry, marketing and public relations firms, colleges and universities, sports organizations, and non-profits. Employees in these positions are responsible for creating proposals, articles, presentations, marketing materials, educational materials, grant applications, legal documents, and financial reports, drawing on skill in conducting background research and the ability to write well.

The curriculum in this program reinforces the ability of its students to write effectively while providing the opportunity for hands-on practice in the use of all forms of communication in this rapidly evolving field. Core courses in the major range from advanced writing and editing, research techniques, and communications theory to digital media and methods, media in communications, and writing for electronic media. This preparation is supplemented by support courses in advanced Psychology, Speech, and Visual Communications and the availability of elective courses in various specialties of professional communications.

Students in this curriculum gain a broad academic background through the completion of both General Education requirements and various Arts & Sciences electives. Additional breadth of preparation is achieved through the completion of a Concentration consisting of 12 credits in courses in a specific academic area outside of Professional Communications (English, Speech, Sociology, Psychology, etc.).

The capstone of the program is a senior internship placement in a local company or organization that provides direct experience and the opportunity to apply the skills gained in the program in a professional environment.

Professional Communications (BS) Program Mission:

The mission of this program supports the mission of the college by encouraging its graduates to be imaginative, critical thinkers and successful problem solvers. Its inclusion of a broad preparation in the arts & sciences is intended to provide its students with an appreciation of culture, ethics, aesthetics, citizenship, cultural diversity, and the interrelationships among the applied arts and sciences, technologies, and society. The curriculum is designed to produce graduates who meet the needs of regional employers, thereby promoting the economic, social and cultural development of the region.

Professional Communications (BS) Program Outcomes:

Students who graduate with a Bachelor of Science degree in Professional Communications will have -

- Mastery of a full range of communications skills which are needed in every company and organization and that can lead to successful career paths in a wide range of businesses, industries, and organizations.
- A foundation in the liberal arts and sciences that will encourage them to aspire to be exemplary citizens, scholars, professionals, and leaders in society, consistent with the mission of the College.

Student Learning Outcomes:

- Students will be able to identify, gather, synthesize, and cite information and sources to support the preparation of professional documents and presentations of all types.
- Students will be able to organize and produce written documents and oral presentations in a variety of professional formats using language that is lucid, concise, precise, grammatically correct, and appropriate to the topic, audience, and occasion.
- Students will be able to effectively revise and edit documents for both content and organization based on the application of standards of grammar, mechanics and syntax.
- Students will be able to deliver effective oral presentations following appropriate practices, including the utilization of audio-visual materials or technology to enhance their presentations.
- Students will be able to create and update web-based media for optimum effect, making use of the technology associated with electronic media.

Liberal Arts and Sciences	**(54 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Humanities (GE)	3
English or Humanities	3
Mathematics (GE)	3
Natural Science (GE)	3
Mathematics or Science	6
Foreign Language - Level II (GE)	3
PSY 101 Introduction to Psychology (GE)	3
Social Science Electives	6
American/Other World/Western Civilization History (GE)	3
The Arts (GE)	3
General Education Electives (GE)	6
Liberal Arts and Sciences Electives	6

Program Discipline Courses (will be offered at least once each academic year)	**(39 credits)**
EGL 301 Advanced Grammar and Vocabulary	3
PCM 305 Media in Communications	3
PCM 311 Introduction to Writing for Electronic Media	3
PCM 313W Communications Theory	3
PCM 315 Research Techniques	3
PCM 328 Advanced Writing and Editing	3
PCM 450 Professional Communications Internship I	3

Four courses selected from the following six Additional Core Courses:

PCM 320 Communications in Business	3
PCM 324 Report Writing and Technical Communications	3
PCM 325 Writing in Health and Disease	3
PCM/SMT326 Sport Writing	3
PCM 329 Legal Writing and Analysis	3
PCM 340 Special Topics in Professional Communications OR	
RAM 303 Research Experience	3

Two courses selected from among the following four offerings:

PCM 420 Advanced Technical Communications	3
PCM 425 Documentation Procedures	3
PCM 426 Culture and Communication	3
PCM 428 Grant Writing	3
Required Support Courses	**(12 credits)**
PSY 331 Industrial/Organization Behavior	3
SPE 331 Advanced Oral Communications	3
VIS 116 Digital Media and Methods	3
VIS 242 Publication Design II	3
Concentration	**(12 credits)**

At least four courses in a discipline outside Professional Communications.

Free Elective	**(3 credits)**
Elective	3
Total Credits:	**120**

Degree Type: BS
Total Required Credits: 120

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes: Many courses have specific prerequisite(s), co-requisites and sequence requirements. Please consult with your academic advisor for additional information.

Marketing Certificate

Certificates in Business Management are offered in Accounting, Marketing, Management and International Business. Certificates are designed to provide a general exposure to a field for students not seeking a degree.

***Gainful Employment Mandatory Disclosure Statement**

BUS 109 Management Theory	3
BUS 111 Introduction to Business	3
BUS 131 Marketing Principles	3
BUS 141 Business Communications	3
BUS 253 Industrial Marketing	3
BUS 254 Salesmanship	3
BUS 257 Advertising Principles	3

Five additional courses (15 credits) in Business

Total Required Credits: 36

Notes: 1. Students planning to pursue a degree program after completing the certificate program are urged to select elective courses applicable to the degree program.

Required:	**(11 credits)**
PHY 143 General Physics I (Calculus)	4
PHY 144 General Physics II (Calculus)	4
PHY 333 Modern Physics	3
Nine credits of the following courses:	**(9 credits)**
PHY 255 Oscillatory Motion and Waves	3
PHY 310 Analytical Mechanics	3
PHY 323 Electromagnetic Theory	3
PHY 334 Modern Physics Lab	1
PHY 356 or MTH 356 Mathematical Methods in Math and Physics	3
PHY 420 Optics	3
PHY 480 Physics Research I	3
PHY 481 Physics Research II	3
RAM 303 Research Experience	3

Computer Security Technology

Bachelor of Science Degree

The Bachelor of Science degree in Computer Security Technology prepares students to combat security issues and challenges in the digital environment, including computer systems, computer networks and cyberspace. Graduates will be able to face the security threats and protect valuable information and/or physical resources from unauthorized access and malicious activities. In addition to preparing students for rewarding careers in the security industry, the program prepares students for lifelong learning and advanced studies in related disciplines.

Typical Employment Opportunities

Corporate Security
Federal, State and Local Security Agencies
Software Industries
Computer and Information Systems Manager

Computer Security Technology (BS) Program Outcomes:

- Graduates will demonstrate the knowledge-based skills to analyze and excel in computer and cyber security technologies.
- Graduates will demonstrate an appreciation of professional requirements, ethics and leadership skills.
- Graduates will utilize effective oral and written communication skills.
- Graduates will apply critical thinking skills to analyze current issues and develop innovative solution techniques.

Liberal Arts and Sciences	**(62 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
MTH 129 Precalculus with Applications	4
MTH 130 Calculus I with Applications	4
PHY 135 College Physics I	4
PHY 136 College Physics II	4
BIO 120 General Biology	4
Humanities (GE)	3
Arts (GE)	3
American/Other World/Western Civilization (GE)	3
Foreign Language (GE)	3
Liberal Arts & Sciences Electives	12
ECO 321 Engineering Economics	3
EGL 310 Technical Writing	3
300-400 Level Liberal Arts/Sciences Electives	6

Required Courses:	**(59 credits)**
BCS 120 Foundations of Computer Programming	3
EET 104 DC/AC Circuits OR EET 111 Electric Circuits I	4
EET 105 Introduction to Digital Electronics	2
CPS 201 Digital Systems and Security	3
CPS 203 Data Security and Privacy	3
CPS 205 Digital Signal and Image Processing	3
BCS 215 UNIX Operating Systems	3
CPS 301 Biometric Recognition	3
CPS 303 Operating Systems and Security	3

CPS 305 Foundations of Cryptography	3
EET 440 Networking and Data Communications	4
EET 441 Advanced Networking	4
CPS 401 Applied Cryptography	3
CPS 460/TEL460 Network Security	3
CPS 405W Senior Project	3
100-200 Level Technical Elective * (see list below)	3
300-400 Level Technical Elective * (CPS 461, 462 or 463)	3
300-400 Level Technical Electives * (BCS, CPS, CRJ, EET, SET)	6

Total Credits	121

Degree Type: BS
Total Required Credits: 121

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes: *Technical Elective courses can be selected in consultation with the student's academic advisor within the course designations of EET, SET, BCS, CRJ and CPS. 100-200 Level Technical Electives: BCS 262 Data Communications 3 CRJ 217 Computer Forensics II 3 EET 113 Electrical Circuits II 4 EET 118 Semiconductor Devices & Circuits 4 EET 223 Digital Electronics 4 SET 105 Intro to Symbolic & Logic Programming 3 SET 205 Introduction to Artificial Intelligence and Robotics Technology 3 300-400 Level Suggested Technical Electives: BCS 318 Virtualization & Cloud Computing 3 CPS 461 Penetration Testing 3 CPS 462 Smart Grid Security 3 CPS 463 Distributed Systems and Security 3 CRJ 440 Bitcoin & Cryptocurrency 3

Business Management

Bachelor of Science Degree

The Bachelor of Science in Business Management is designed to prepare students for a wide choice of business and managerial careers. The program provides for a rich exposure to business issues and functions through introductory and core business courses. In addition, the program provides for a significant portion of the degree to be self-defined through elective courses. Through consultation with faculty and program advisors each student is advised with an individualized set of courses designed to best serve the career goals of that student. Students may choose to focus on specific areas of business such as Accounting, Management, Marketing, and International Business or choose from a wide variety of courses in Business Computer Systems and/or Sport Management.

Typical Employment Opportunities

Marketing
Management and Leadership
Entrepreneurship
Accounting and Finance
Customer Relations
Financial Services
Global Business
Production, Quality Control, Inventory and Logistics

Business Management (BS) Program Outcomes:

- Graduates will have the necessary skills to understand and perform in different areas of business in the modern world economy.
- Graduates will be effective communicators and possess critical thinking skills necessary to analyze and solve problems.
- Graduates will function well in teams, develop creative problem solving skills and have the ability to use current technologies in management contexts.
- Graduates will have an understanding of social and ethical issues, data analysis skills, financial theories, and a knowledge of the global economic, political, and legal context within which businesses function.
- Graduates will have an appreciation of markets and organizational behavior, organizational systems and processes, and learn to work effectively in a diverse environment.

Liberal Arts and Sciences	(61 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
The Arts (GE)	3
Basic Communication (GE)	3
Humanities (GE)	3
EGL 310 Technical Writing	3
American/Other World/Western Civilization History (GE)	3
MTH 129 Precalculus or MTH 117 Precalculus with Applications (GE)	4
Foreign Language (GE)	3
ECO 156 Principles of Economics (Macro) (GE)	3
ECO 157 Principles of Economics (Micro) (GE)	3
Natural Science (GE)	3
Math or Natural Science elective	3
Arts and Sciences electives (including 6 credits @300-level or above)	21

Required: Business	(39 credits)
BUS 101 Accounting I	3
BUS 102 Accounting II	3
BUS 109 Management Theories and Practices	3
BUS 131 Marketing Principles	3
BUS 202 Business Law	3
BUS 240 Business Statistics	3
BUS 280 International Business	3
BUS 300 Operations Management	3
BUS 301 Corporate Finance	3
BUS 404 Financial Markets & Institutions	3
BUS 409 Strategic Management	3
BCS 102 Computer Concepts and Applications	3

BCS 300 Management Information Systems	3
Electives:	**(24 credits)**
BUS, SMT and/or IND courses (300 level or higher)	9
AET, BCS, BUS, CON, EET, HOR, IND, MET and/or SMT courses	12
Free Elective	3
Total Credits:	**124**

Degree Type: BS
Total Required Credits: 124

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Mechanical Engineering Technology

Bachelor of Science Degree

The Bachelor of Science degree program in Mechanical Engineering Technology is designed to provide students with a foundation of knowledge and hands-on experience that are required and utilized by the industry. The program offers traditional courses such as Statics, Dynamics, Strength of Materials, Material Science, Machine & Product Design, Applied Fluid Mechanics, Applied Thermodynamics, and Applied Heat Transfer providing graduates with a solid foundation of the field. The program also offers numerous technology-based and practical courses such as Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Computer Aided Engineering (CAE), Computer Numeric Control (CNC) Machining, Quality Control, Electronic Packaging Applications, Electromechanical Control Systems, Robotics, and HVAC Systems providing students with a well-balanced and needed background in Mechanical Engineering Technology. These technology based courses are delivered through our state-of-the-art laboratories. Students also benefit from the required senior project that provides the students with valuable integrating capstone experience.

This program is ideal for high school graduates and Mechanical Engineering Technology associate degree graduates who wish to enter careers in the design, installation, manufacturing, testing, technical sales, maintenance, HVAC, and other endeavors typically associated with mechanical components and systems.

This is a four-year program. Students may matriculate on a full-time or part-time basis. This program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org.

Typical Employment Opportunities

Mechanical Engineer
Product Design Engineer
Mechanical System Engineer
Process Design Engineer
HVAC System Engineer
Technical Writer
Field Service Engineer
Manufacturing Engineer
Project Engineer
Equipment Testing Engineer

Mechanical Engineering Technology (BS) Program Educational Objectives:

- Graduates will have the knowledge and skills to enter careers in the design,installation, manufacturing, testing, technical sales, maintenance, and other endeavors typically associated with mechanical components and systems.
- Graduates will have the ability to provide solutions and solve mechanical engineering technology related problems.
- Graduates will have the technical background to advance in their careers with an understanding and necessity for personal integrity, ethical behavior, cultural awareness, lifelong learning, and continuous improvement.

Student Learning Outcomes

- an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
- an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
- an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes; and
- an ability to function effectively as a member as well as a leader on technical teams.

ABET Data

Liberal Arts and Sciences	**(60 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Basic Communication (GE)	3
The Arts (GE)	3
Foreign Language (GE)	3
Social and Behavioral Science (GE)	3
American/Other World/Western Civilization History (GE)	3
Humanities (GE)	3
Natural Science*	8
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II (GE)	4
Math Elective	6
MTH 129 Precalculus (GE)	4
MTH 130 Calculus with Applications	4
MTH 236 Calculus II with Applications	3
Liberal Arts and Sciences Elective	3

* For Natural Science Elective, at least one chemistry course.

Support Courses	**(3 credits)**
IND 405 HVAC Systems	3
Mechanical/ Manufacturing Courses	**(63 credits)**

MET 105L Technical Drawing and CAD	1
MET 109 Computer Programming and Applications	2
MET 117 Manufacturing Processes	2
MET 127 Advanced Manufacturing Processes	2

MET 150 Solid Modeling	2
MET 201 Statics	3
MET 205 Material Science	3
MET 206 Strength of Materials	3
MET 207 Tool Design	3
MET 212 Applied Fluid Mechanics	3
MET 230 Electrical Principles	3
MET 252 Quality Control (Metrology)	3
MET 302 Dynamics	3
MET 307 Electromechanical Control Systems	3
MET 308 Machine and Product Design	3
MET 314 Applied Thermodynamics	3
MET 351 Computer Aided Manufacturing (CAM)	3
MET 400 Computer Aided Engineering	3
MET 406 Electronic Packaging Applications	3
MET 410W Senior Project-Writing Intensive	3
MET 411 Applied Heat Transfer	3
MET 415 Robotics	3
Technical Elective*	3

* Technical Electives must be selected from AET, IND, MET courses or RAM 303 in consultation with department chair.

Total Credits:	**126**

Degree Type: BS
Total Required Credits: 126

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Required:
BUS 209 Teamwork & Team Building
BUS 360 Leadership Theories & Practices
BUS 460 Leadership & Ethics
Electives (3) chosen from the following:
BUS 305 Entrepreneurship
BUS 322 International Management
BUS 311 Organizational Behavior
BUS 379-382 Business Internship I
BUS 479-482 Business Internship II
DEN 409 Dental Hygiene Practicum
ECO 262 Managerial Economics
EGL 322 Leadership in Fact, Fiction and Film
HIS 335 Gender and Technology in Historical Perspective
HIS 332 American Military History
HOR 370 Landscape Professional Practices
MLT 325W Laboratory Management and Informatics
NUR 404 Nurse as Advocate and Change Agent
PHI 205 Ethics
PHI 207 Business Ethics
POL 110 Introduction to Legal Studies
POL 399 New York State Legislative Internship
PSY 330 Organizational Training and Development
SMT 440-443 Sport Management Internship I
SMT 445-448 Sport Management Internship II
SOC 303 Sociology of Work & Occupation

Nutrition Science

Bachelor of Science Degree

The Nutrition Science baccalaureate degree contains a strong scientific base that is applied throughout the curriculum. It is designed for students interested in nutrition, food, and the relationship of diet to human health, fitness, and disease prevention—for which current interest has never been greater than today. Graduates will learn to examine complex relationships in human nutrition and food technology. Course work includes understanding obesity and weight management, nutritional influences on chronic disease, dietary intake patterns, addressing nutrient industry and marketing trends, and food/nutrient recommendations to protect the population and promote optimum health.

Graduates will be prepared for further academic professional studies or graduate school including medical, dental, occupational/physical therapy, pharmacy, and advanced graduate study in nutrition science. The nutrition science program is independent of the licensure in dietetics and cannot be used to directly achieve clinical internships.*

**Please note: The Nutrition Science degree does not lead to becoming a licensed dietitian after graduation. If you are interested in becoming a Registered Dietitian, it is vital that you understand the additional education requirements determined by the Accreditation Council for Education in Nutrition and Dietetics (ACEND). This Nutrition Science degree provides a strong science and nutrition background for other allied health care settings and work in both the private and public sectors.*

Typical Employment Opportunities

Graduates are eligible for a variety of careers in both private and public sectors.
Opportunities found in, but not limited to:
Healthcare Field
Sport & Fitness Industry
Food Technology
Biomedical and Laboratory Research
County, State and Federal Government Nutrition Services
Cooperative Extension
Food and Agriculture Industry
Nutraceutical Industry
Non-Profit Nutritional Support Programs
Graduate Education

Nutrition Science (BS) Program Outcomes:

- Graduates will demonstrate professional and personal ethics with a cultural awareness for dietary intake and skills in maintaining health and disease prevention throughout the life span (Professionalism/ Leadership).
- Graduates will employ effective oral and written communication skills (Communication/Marketing).
- Graduates will apply critical thinking skills to evaluate, interpret, and analyze current issues in nutrition utilizing theoretically based problem solving skills (Critical Thinking).
- Graduates will be able to investigate, differentiate, and extrapolate nutrition science data and trends. This will allow them to excel in the nutrition sciences and to prepare for further professional and graduate education (Knowledge).

Liberal Arts and Sciences	(36 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
American/Other World/Western Civilization History (GE)	3
PSY 101 Introduction to Psychology (GE)	3
BIO 130 Biological Principles I (GE)	4
Humanities (GE)	3
SOC 122 Introductory Sociology (GE)	3
MTH 116 Algebra (GE)	4
BIO 131 Biological Principles II (GE)	4
Foreign Language (GE)	3
Arts (GE)	3

Required: Lower Division	(37 credits)
BIO 170 Human Anatomy and Physiology I (GE)	4
CHM 152 General Chemistry Principles I (GE)	4
BUS 131 Marketing Principles	3
BIO 171 Human Anatomy and Physiology II (GE)	4
CHM 153 General Chemistry Principles II (GE)	4
BIO 125/NTR 110 Introduction to Nutrition Science	3
CHM 260 Fundamentals of Organic Chemistry (GE)	4
BIO 220 Medical Microbiology w/ Lab OR	
NTR 330 Food Microbiology	4
NTR 200 Food Science w/Lab	4
Technical Electives Lower Level*	3

Required: Upper Division	(49 credits)
NTR 300 Cultural Foods	3
NTR 305 Weight Management & Obesity	3
NTR 310 Food Service Management	3
NTR 320 Medical Nutritional Therapy w/lab	4
NTR 325 Nutrition Through the Life Cycle	3
NTR 335 Nutritional Biochemistry	3
NTR 340 Nutrition Communication	3
NTR 350 Energy and Exercise	3
NTR 405 Supplements & Ergogenic Aids	3
NTR 410 Macronutrient Metabolism	3
NTR 411 Micronutrient Metabolism	3
NTR 420 Community Nutrition	3
NTR 425 Nutrition Science Seminar	3
NTR 450 Research Methods in Nutrition Sciences	3
Technical Elective Upper Level**	6
Total Credits:	**122**

Degree Type: BS
Total Required Credits: 122

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes:
*Technical Electives Lower Level

Must select one 3 cr. course

- NTR 150 Quantity Food Production
- BIO 123 Human Body in Health and Disease
- BIO 210 Introduction to Bioscience
- BIO 240 Bioethics
- BUS 101 Accounting I
- BUS 109 Management Theories and Practices
- BUS 259 Public Relations
- BUS 267 Small Business Management
- ECO 156 Principles of Economics – Macro
- SOC 228 Society and Health
- SOC 248 Sociology of Sports
- SOC 260 Sociological Research Methods

**Technical Electives Upper Level

Must select two 3 cr. courses

- NTR 360 Experimental Foods
- NTR 365 Sports Nutrition
- NTR 430 Clinical Nutrition Assessment
- NTR 460 Nutrition Field Experience
- BIO 416 Industrial Microbiology
- BUS 305 Entrepreneurship
- ECO 304 Sports Economics
- ECO 310 Health Economics and Policy
- SOC 309 Sport in Society

Criminal Justice: Law Enforcement Technology

Bachelor of Science Degree

The Bachelor of Science program in Criminal Justice: Law Enforcement Technology is a technical program that prepares students for careers in law enforcement on the local, state, and federal levels. Other career opportunities exist with private police and military police forces.

The program blends courseware in computers, forensics, crime prevention, and technology to provide students with the necessary skills to control crime as well as to conduct investigations of crimes committed on a computer or at a crime scene. Students are provided with a legal foundation in the study of digital evidence, which is an essential element of cyber investigations.

The program will provide graduates with technical skills to pursue careers in the protective services as well as for in-service personnel who may seek career advancement. Students are also provided with a broad based educational experience that draws from the deep reservoirs of knowledge of the arts and sciences. Graduates who wish to continue their education will find that the program will adequately prepare them for graduate studies in criminal justice and related fields.

Students majoring in Criminal Justice: Law Enforcement Technology will take a total of 122 credits of which 61 credits are in criminal justice and 61 credits are in liberal arts and sciences, with 33 credits as free electives. In the first two years of the program, students will have completed basic courses in criminal justice with acquired competencies in criminal and procedural law, criminal investigation and criminalistics. In the third year of study, students will take the more advanced technology courses. The advanced technology courses will provide students with skills in computer forensics, forensic imaging and video analysis, criminal justice database management, crime analysis and mapping, and crime prevention technology. The program concludes with a senior project capstone course which may involve the analysis of a discipline-related technical problem or the development of a research project.

Criminal Justice: Law Enforcement Technology (BS) Program Outcomes:

- Graduates will have knowledge of criminal investigations and criminalistics and be able to analyze the elements that constitute crimes and effectively apply scientific methods towards crime scene investigations.
- Graduates will have knowledge of the technologies used in a variety of criminal justice and law enforcement applications ranging from crime scene investigations to digital forensic investigations.
- Graduates will gain competencies in evidence collection, documentation, analysis and maintenance of chain of custody as well as the laws and guidelines associated with these matters.
- Graduates will take specialized courses to gain knowledge in areas such as geographical information systems, crime analysis and prevention, security, and law enforcement technologies.

Liberal Arts and Sciences	(61 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
PSY 101 Intro to Psychology (GE)	3
PSY 315 Abnormal Psychology	3
SOC 122 Intro to Sociology (GE)	3
Foreign Language (GE)	3
The Arts (GE)	3
MTH 110 Statistics (GE)	3
Natural Science with a Lab (GE)	4
American/Other World/ Western Civilization History (GE)	3
Humanities (GE)	3
Liberal Arts/Science Elective (GE)	3
Free Liberal Arts/Sciences Elective	24

Note: The Liberal Arts and Science electives must include at least 9 credits selected from the following courses: PSY 300, PSY 304, PSY 331, SOC 223, SOC 224, SOC 225, SOC 229, SOC 231.

Required courses in the Major	(61 credits)
CRJ 100 Introduction to Criminal Justice	3
CRJ 101 Law Enforcement Community Relations	3
CRJ 115 Computer Forensics	3
CRJ 200 Criminal Investigation	3
CRJ 201 Criminalistics	3
CRJ 203 Criminology	3
CRJ 204 Criminal Law	3
CRJ 205 Criminal Procedure Law	3
CRJ 217 Computer Forensics II	3
CRJ 218 Computer Forensics III	3
CRJ 307 Criminal Justice Database Operation	4
CRJ 308 Forensic Technology	4
CRJ 406 Crime Analysis and Mapping	4
CRJ 407 Crime Prevention Systems	4
CRJ 410W Senior Project	3
Free Electives	12
Total Credits:	**122**

Degree Type: BS
Total Required Credits: 122

Aviation Administration

Bachelor of Science Degree

The Aviation Administration major is a specialized aviation management program accredited by the Aviation Accreditation Board International (www.aabi.aero) through February, 2023. The program prepares graduates for entry-level managerial positions in the Airport and Air Cargo segments of the air transportation industry, the Airline Industry, the FAA and the General Aviation Industry.

A grade of "C" or better is required in all AVN courses (including electives) for graduation from the Aviation Administration Program. Students who are unable to obtain a minimum grade of "C" after the second attempt in any AVN classes must obtain permission from the Chairperson of the department to remain in the program. This will apply for each course that needs to be retaken for the third time.

Aviation Administration (BS) Program Educational Goals:

Our goal is to:

- Produce graduates that possess the relevant knowledge, skills and attitudes to competently and ethically function as a manager in the aviation industry.
- Provide students access to a high-quality, affordable education in the field of aviation.
- Develop relationships with our extensive local and global industry partners that provide students with applied learning opportunities and experiences.
- Maintain a low student to faculty ratio for a diverse student body

The program prepares students to be marketable in the following areas: Finance and Public Relations, Accounting and Marketing, Aviation Laws and interaction between the aviation industry and government and Management of all aspects of airports.

- Student Achievement Data

Liberal Arts and Sciences	(60 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Basic Communication (GE)	3
American/Other World/Western Civilization History (GE)	3
ECO 156 Economics (Macro) (GE)	3
ECO 157 Economics (Micro)	3
PHY 116 Meteorology	3
Natural Science (GE)	4
PSY 101 Introduction to Psychology	3
MTH 110 Statistics (GE)	3
MTH 129 Precalculus (GE)	4
MTH 130 Calculus I with Applications	4
The Arts (GE)	3
Foreign Language (GE)	3
Humanities (GE)	3
Liberal Arts & Sciences Electives (upper level)	12

Required Support Courses	(18 credits)
BUS 101 Accounting I	3
BUS 102 Accounting II	3
BUS 109 or BUS 111	3
BUS 307 Corporate Finance	3
BUS 259 Public Relations	3
BCS 300 Management Information Systems	3
Required Aviation	**(27 credits)**
AVN 100 General Aeronautics	3
AVN 101 Aviation Industry: A History Perspective	3
AVN 201W Safety Ethics	3
AVN 300 Government in Aviation	3
AVN 326 Aviation Security Management	3
AVN 350 Air Traffic Management	3
AVN 400 Aviation Law	3
AVN 401 Aviation Economics and Marketing	3
AVN 471 Aviation Administration Senior Seminar	3

Concentration: (Choose one)

Air Cargo	(15 credits)
AVN 280 Intro to Air Cargo Operations - Basic	3
AVN 281 Air Cargo Govt & Industry Regulations	3
AVN 380 Air Cargo Sales & Marketing Techniques	3
AVN 381 Air Cargo Mgmt Techniques	3
AVN 480 Air Cargo Operations - Advanced	3
Airport Management	**(15 credits)**
AVN 271 Airport Capacity/Delay/ Airspace	3
AVN 370 Airport Management and Finance	3
AVN 371 Airport Planning	3
AVN 470 Airport Operations	3
AVN Elective	3
Flight Management	**(15 Credits)**
AVN 104 Private Pilot Ground	**3**
AVN 202 Meteorology	**3**
AVN 325 Safety Ethics	3
AVN Electives (3 credits must be upper level)	6
Total Credits:	**120**

Degree Type: BS
Total Required Credits: 120

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Computer Systems Technology Certificate

A Certificate program in Computer Programming is available for those students who do not wish to work toward a degree. The following is a list of courses which a student must take in order to be eligible for the Certificate. Students with experience in the computer field may be excused from

specific required courses but will have to take replacement courses in their stead.

***Gainful Employment Mandatory Disclosure Statement**

BCS 120 Foundations of Computer Programming I	3
BCS 160 Computers, Society, and Technology	3
BCS 230 Foundations of Computer Programming II	3
BCS 215 UNIX Operating System	3
BCS 260 Introduction to Database Systems	3
BCS 262 Data Communications	3
BCS 301 Systems Analysis and Design	3
BCS elective**	3
BCS elective**	3
BCS elective**	3

Total Required Credits: 30

Notes: ** BCS electives are selected in consultation with a faculty advisor.

Interaction Design (IxD)

Bachelor of Technology Degree

The Interaction Design Bachelor of Technology degree focuses on human behavior and user experience in the design and development of mobile applications, responsive web design and user experiences, service design, social networks, way-finding projects, brick and mortar and on-line retailing, exhibit design and more. This program encourages a culture in which students learn the value of collaboration, vision, risk-taking, discovery, entrepreneurship, passion, social responsibility and play. Students will immerse themselves in an environment that focuses on the practical application of user-centered, needs-based design solutions built upon strong research and development, observation, and prototyping.

Interaction Designers have the ability to influence the future development of products, systems and services in fields as diverse as education, healthcare, banking, business, and more. Graduates of the program will enter into employment such as mobile interface design, web design, user experience design (UX), user interaction design (UI), human computer interaction and more.

For additional information, or to schedule an interview and tour of our facilities, please contact the Visual Communications Department at 631-420-2181

Typical Employment Opportunities

Application Development
Data Visualization
Immersive Experience
Interactive Installation
Kiosk Design and Development
Museum Experience Design
User Experience Design (UX)
User Interface Design (UI)
Web Development and Design

Interaction Design (IXD) (BT) Program Outcomes:

- Graduates will develop and build upon strong foundational design skills through exploration and experimentation.
- Graduates will master skill sets in traditional and digital techniques to design successful interactive experiences.
- Graduates will exhibit an understanding of graphic design and interaction design from both an historical perspective as well as from a contemporary perspective with current and future trends of industry being paramount.
- Graduates will build professional skills including resume development, self promotion, job search, industry procedures and practices and presentation techniques.
- Graduates will present a portfolio of work in order to successfully compete in the current job market and to apply for graduate study. In this portfolio, students will demonstrate knowledge of current technical and conceptual interaction design standards.

Liberal Arts and Sciences	**(33 credits)**
EGL 101 Composition I: College Writing (GE)	3
MTH Elective (Statistics Preferred) (GE)	3
EGL 102 Composition II: Writing About Literature	3
ART 200 History of Graphic Design (GE)	3
SPE Elective (GE)	3
SOC 122 Introductory Sociology (GE)	3
HIS Elective (GE)	3
ART 201 Survey of Art History: Prehistoric Times through Middle Ages (GE)	

OR

ART 202 Survey of Art History: Early Renaissance to the Present (GE)	3
PSY 101 Introduction to Psychology (GE)	3
BIO/ PHY Elective (GE)	3
ART 203 History of Interaction Design (GE)	3

Support Courses	**(21 credits)**
BCS 130 Website Development I	3
BCS 240 Website Development II	3
PSY 328 Introduction to Human Factors	3
Free Electives	6
300 + Electives (Includes RAM 303)	6

Interaction Design Core	**(67 credits)**
VIS 110 Drawing I	3
VIS 112 Two-Dimensional Design	3
VIS 115 Three-Dimensional Design	3
VIS 116 Digital Media and Methods	3
VIS 122 Typography I	3

VIS 225 Photography I	3
VIS 228 Four-Dimensional Design	3
IXD 210 Typography for Interaction	3
IXD 212 Interaction Design I- Foundation	4
IXD 310 Interaction Design II- User Interface	4
IXD 312 Research Strategies	3
IXD 320 Interaction Design III- User Experience	4
IXD 322 Prototype Tools	3
IXD 330 Design for Social Change	3
IXD 410 Interaction Design IV- Advanced Interaction Design	4
IXD 412 Special Topics Studio	3
VIS 340 Industry Preparation	3
VIS 416W Senior Project I	3
VIS 426 Senior Project II	3
IXD 414 Design and Play Mechanics	3
VIS 418 Portfolio	3

Total Credits	**121**

Degree Type: BT
Total Required Credits: 121

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Horticultural Technology Management

Bachelor of Technology Degree

The Horticultural Technology Management program is designed to produce versatile graduates prepared for a wide range of entry-level and middle management positions in the extensive green industry on Long Island and beyond. The horticultural green industry is a diverse conglomerate of growers, retailers, designers, installers, and maintenance personnel serving public and private gardens, homeowners, golf courses, parks and recreational facilities.

Through a selection of required and elective courses in the concentration, students will become progressively more specialized and advanced in their chosen area of interest. The Horticultural Technology Management program has a common business and horticulture core which serves as the foundation for the two concentrations in the program.

The two major concentrations are: General Horticulture and Landscape Development. Each concentration offers a sequence of courses that build upon a strong foundation in the discipline and draws from a multi-disciplinary array of course work in Horticulture, Business and the Arts and Sciences.

The broad scope of courses allows students to experience various phases of horticultural operations as well as business procedures and practices. The mix of horticulture and business maximizes their employment opportunities and career choices. Graduates of this program may develop careers owning and operating their own businesses, propagating plants, designing interior and exterior landscapes, managing golf courses, estates, public gardens and garden centers.

Horticultural Technology Management (BT) Program Outcomes:

This major has two concentrations: Landscape Development and General Horticulture.

General Horticulture (BT) Program Outcomes:

- Graduates will receive a strong foundation in science and master skillsets utilizing traditional and cutting edge techniques.
- Graduates will demonstrate diverse knowledge and skills required to perform professionally in today's complex multi-disciplinary environment.
- Graduates will exhibit the knowledge necessary to understand horticulture from an historical perspective, as well as current and future trends of industry.
- Graduates will have learned specific professional skills addressing the science and art of growing and utilizing cultivated plants to beautify, enhance and restore private and public landscapes, and become familiar with ever-changing industry procedures, practices and techniques.
- Graduates will have learned specific professional skills addressing resume development, self-promotion and job search skills in order to successfully compete in the current job market.

Landscape Development (BT) Program Outcomes:

- Graduates will receive a strong foundation in design, and master skillsets utilizing traditional and cutting digital techniques.
- Graduates will demonstrate diverse knowledge and skills required to perform professionally in today's design environment.
- Graduates will exhibit the knowledge necessary to understand design from an historical perspective, as well as current and future trends of industry.
- Graduates will have learned specific professional skills addressing resume development, self-promotion, job search skills, industry procedures and practices and presentation techniques.
- Graduates will have created a portfolio of work, which will meet industry demands in order to successfully compete in the current job market.

Liberal Arts and Sciences:	**(43 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
SPE 130 or SPE 202 (GE)	3
Humanities (GE)	3
American/Other World/Western Civilization History (GE)	3
Mathematics (GE)	3
The Arts (GE)	3
Social and Behavioral Sciences (GE)	3
General Education elective (GE)	3
BIO 192 Botany (GE)	4
BIO 198 Entomology (GE) OR	
BIO 290 Entomology II	3-4

Students must select 8 credits from:

BIO 353/BIO 354L Essentials of Plant Pathology/Lab	4
BIO 355 Ecological Topics OR	
BIO 330 Principles of Ecology	4

CHM 124 Principles of Chemistry	4
Required: BUS/BCS/IND Courses	**(21 credits)**
BCS 102 Computer Concepts & Applications	3
BUS 109 Management Theories and Practices	3
BUS 131 Marketing Principles	3
BUS 141 Contemporary Business Communications	3
BUS 230 Environmental Law OR	
BUS 202 Business Law I	3
BUS/IND/BCS Electives (300 level or above) OR	
RAM 303 Research Experience	6
Required: Horticulture Courses	**(28 credits)**
HOR 110 Horticulture I	3
HOR 111 Horticulture II Growth and Development of Cultivated Plants	3
HOR 112 Soils: The Foundation of Life	3
HOR 127 Horticultural Seminar	1
HOR 131 Landscape Drafting I	3
HOR 204 Herbaceous Plants II	3
HOR 211 Woody Plants I	3
HOR 212 Woody Plants II	3
HOR 340 The Sustainable Garden	3

Writing Intensive: Students must choose one of the following:

HOR 320W Public Garden Management OR	
HOR 350W The History of Garden Design & Landscape Architecture	3

Concentration Requirements (choose one):

General Horticulture:

The concentration in General Horticulture provides a generalized study of horticulture and business. Through a wide range of electives, students can develop specific areas of expertise. The program of study includes training in plant identification, botany, entomology, soil science, business, and computer business applications. Students may elect additional courses in plant propagation, landscape construction, commercial floral design, arboriculture, ecology, and turf and grass management. Laboratory hours provide students valuable "hands-on" experience in the College's extensive greenhouses and ornamental gardens.

General Horticulture Concentration:	**(31 credits)**
HOR 103 Herbaceous Plants I	3
HOR 200 +- Level Electives	21
HOR 311 Woody Plants III:Advanced Topics	3
HOR 465 Practicum Prep for General Horticulture	1
HOR 475 Horticulture Practicum	4

Landscape Development:

The focus of this specialization is to prepare students for business in professional landscape contracting and landscape design. The student is trained in landscape drafting, landscape graphics, landscape plans, landscape construction, landscape surveying, computer-aided design, plant materials, professional practices, business, and computer business applications.

Landscape Development Concentration:	**(31 credits)**
HOR 133 Landscape Drafting II	3
HOR 207 Landscape Plans I	3
HOR 219 Landscape Construction	3
HOR 220 Landscape Plans II	3
HOR 370 Landscape Professional Practices	3
HOR 371 Landscape CAD I	3
HOR 372 Site Engineering I	3
HOR Electives (200 level or above)	6
HOR 464 Capstone Prep for Urban Design	1
HOR 474 Design Capstone Project	4
Total Credits:	**123-124**

Degree Type: BT
Total Required Credits: 122-123

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Aeronautical Science - Professional Pilot

Bachelor of Science Degree

Farmingdale State College's Department of Aviation offers the premier collegiate aviation program on Long Island, and in the region. The professional pilot program is currently accredited by the Aviation Accreditation Board International (www.aabi.aero) through February, 2023. The degree program provides training for entry-level pilot positions within the air transportation industry. Opportunities also exist in Federal/State Government, Corporate/ Business Aviation sectors and the United States Military.

A grade of "C" or better is required in all AVN courses (including electives) for graduation from the Professional Pilot Program. Students who are unable to obtain a minimum grade of "C" after the second attempt in any AVN class must obtain permission from the Chairperson of the department to remain in the program. This will apply for each course that needs to be retaken for the third time.

Flight training students must maintain a cumulative GPA of 2.0 and must be in Good Academic standing at the completion of each semester or they may be removed from their flight training schedule.

Please refer to the Safety and Technical Standards in the front section of the College catalog.

Program Educational Goals:

Graduates will possess the necessary knowledge, skills and attitudes to competently and ethically function as professional pilots in the aviation industry.

Our goal is to:

- Be a premier collegiate aviation program providing access to a high-quality, affordable education leveraging our location in complex airspace and all-weather conditions.
- Produce graduates that possess the necessary knowledge, skills and attitudes to competently and ethically function as professional pilots in all segments of aviation.
- Provide a flight training environment that develops the skills needed to build and promote a culture of safety.
- Maintain a low student-to-faculty ratio for a diverse student body.

The Pro-Pilot Program prepares the student with the following Certificates and Ratings:

- Private Pilot Certificate
- Instrument Rating
- Commercial Pilot Certificate
- Certified Flight Instructor (CFI) Certificate

In addition, the student will have the option to complete the following Certificates and Ratings:

- Multi Engine Land
- Multi Engine Instrument Land
- Multi Engine Instructor
- Airline Transport Pilot Certificate
- Certified Flight Instructor Instrument (CFII) Certificate

Students pursuing flight training in their program must hold a 1st, 2nd, or 3rd class FAA medical Certificate prior to starting flight training. The Department of Aviation strongly recommends students obtain a First Class Medical prior to enrolling in the Professional-Pilot Program. A listing of FAA medical examiners can be obtained by contacting the FAA's Flight Standards District Office (FSDO) at Republic Airport (631-755-1300).

Students may elect to fly during the summer.

Flight Training Costs: Flight training fees and related equipment and publications are in addition to college tuition and fees. Flight fees must be paid each semester regardless of scheduled flight time.

Student Achievement Data

Liberal Arts and Sciences	**(61 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
ECO 156 Principles of Economics (Macro) (GE)	3
ECO 157 Principles of Economics (Micro) (GE)	3
Basic Communication - 200 level or higher (GE)	3
American/Western/Other World Civilizations (GE)	3
MTH 129 Precalculus (GE)	4
MTH 130 Calculus I with Applications	4
Foreign Language (GE)	3
Humanities (GE)	3
The Arts (GE)	3
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II	4
PSY 101 Intro to Psychology	3
PSY 331 Industrial/Organizational Psychology	3
Liberal Arts & Sciences Electives	12
Required: Aeronautical Science - Lecture	**(55-57 credits)**
AVN 101 Aviation Industry: A History Perspective	3
AVN 104 Private Pilot Ground	3
AVN 201 Safety Ethics	3
AVN 202 Aviation Meteorology	3
AVN 208 Instrument Pilot Ground	3
AVN 211 Commercial Pilot Ground	3
AVN 300 Government in Aviation	3
AVN 309 Certified Flight Instructor-Ground	3
AVN 320 Air Carrier Flight Operations	3
AVN 321 Physiology of Flight	3
AVN 322 Advanced Aircraft Systems	3
AVN 400 Aviation Law	3
AVN 421 Gas Turbine Engines	3
AVN 422 Aerodynamics and Aircraft Performance	3
AVN 423 Crew Resource Management	3
AVN 424 Advanced Avionics and Cockpit Automation	3
AVN 425 Safety of Flight	3
AVN 447 Capstone Professional Pilot Seminar	3
AVN Aviation Electives* (RATP students see advisor for approved course listing)	1-3
Required: Aeronautical Science - Flight Training	**(5 credits)**
AVN 105 Private Pilot – Flight to Solo	1
AVN 106 Private Pilot – Flight to Certificate	1
AVN 209 Instrument Pilot – Flight	1
AVN 212 Commercial Pilot – Flight	1
AVN 310 Certified Flight Instructor or	
AVN 410 Commercial Multi Engine Pilot Rating	1

Total Credits:	**121-123**

Degree Type: BS
Total Required Credits: 121-123

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Notes: 1. Students entering the program with a Private Pilot's certificate must enroll in AVN 112 Private Pilot Proficiency. Students with any flight experience may also be required to enroll in AVN 112 at the discretion of the Chief Flight Instructor. Students must complete all required flight certificates and ratings above the Private Pilot Certificate at the Farmingdale State College (FSC) Flight Center in order to graduate with a FSC Professional Pilot Degree. 2. Flight Courses must be completed within a year from the date a student registers. Within this time frame a student must either 1) Successfully complete the course and be issued a grade, OR 2) Withdraw from the course, due to the following extenuating circumstances: Active Military Obligations, Medical conditions requiring removal from active flight status for a duration of 60 consecutive days or more. If neither of the above occurs, a failing grade will be assigned. 3. Students holding flight certificates and ratings above the Private Pilot Certificate are permitted to flight train but cannot graduate with a Professional Pilot degree. 4. All ground courses (AVN 104, 208, 211, 309) require successful completion of an FAA administered exam at the end of the course. The FAA exam can only been taken after receipt of a written endorsement from the course instructor. This instructor endorsement is given to those students who demonstrate sufficient understanding of the subject matter by achieving an average of 80 or better for all of the course exams during the semester. Students who don't receive the endorsement to take the FAA exam or those who do not achieve a score of 70 or better on the FAA exam will be given an F for the course. Students that fail a ground course will not be permitted to continue the flight training associated with that ground course until they successfully pass the course. Students that fail a ground course twice will be removed from the Professional Pilot program and from flight training under Part 141 and cannot be endorsed by the College for reduced aeronautical experience under the FAA Letter of Authority (LOA) to Farmingdale State College. 5. Students seeking the RATP MUST take an elective credit course approved on our current LOA. Please see an academic advisor for the most recent approved course listing.

Security Systems

Bachelor of Science Degree

The goal of this program is to provide a positive learning and teaching environment in applied science and technology. The program treats the technical aspects of the discipline in order to educate a new breed security director who integrates crime prevention theory with the design philosophy and hardware and software components of security systems. Criminal justice and security are by their nature information gathering and processing activities and students need to be prepared for a changing work environment where computers will be used extensively. The computer as an integrating technology is emphasized in the program to achieve remarkable effectiveness as well as exceptional efficiency of crime control performance. The Access Control, Computer Forensics, Computer Security, Intrusion Detection, and Security-Imaging Sensor laboratories which house state-of-the-art equipment serve as technical resources for the program. The courseware teaches students how to: manage the movement of people in organizations; detect intrusions on the corporate network; deter acts of corporate espionage and sabotage; and prevent theft of company assets. What is different about this program is that it has been shaped as a digital age curriculum. Students do not simply learn about hardware and software but also are taught how to use it to solve protection problems.

Our program offers students a choice of one of two concentrations, 1) a networking concentration; or 2) a transportation security – aviation concentration. These concentrations are supported by courses from Farmingdale's Aviation and Computer Systems Departments.

Typical Employment Opportunities

Corporate Security
Federal Law Enforcement Agencies
Local, Municipal, and State Law Enforcement Agencies

Security Systems (BS) Program Outcomes:

- Graduates will have knowledge of advanced computer-based evidentiary and "discovery" data methods, and will be technically competent to administer procedures for evidence identification, documentation, and chain of custody maintenance.
- Graduates will have knowledge to develop comprehensive computer security programs for organizations.
- Graduates will have knowledge to develop protection programs for organizations using an integrated security systems approach.
- Graduates will have an appreciation and understanding of the necessity for personal integrity, professional ethics, and cultural awareness.

Liberal Arts and Sciences	**(61 credits)**
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
PSY 101 Intro to Psychology (GE)	3
SOC 122 Intro to Sociology (GE)	3
Foreign Language (GE)	3
The Arts (GE)	3
MTH 110 Statistics (GE)	3
Natural Science with a Lab (GE)	4
American/Other World/ Western Civilization History (GE)	3
Humanities (GE)	3
Liberal Arts and Sciences Electives*	30

*Note: The Liberal Arts and Science electives must include:

1. At least 3 credits in General Education
2. At least 9 credits in the Social Sciences
3. At least 12 credits of 200 or higher level courses

Required Courses in the Major	**(55 credits)**
CRJ 100 Introduction to Criminal Justice	3
CRJ 115 Computer Forensics	3
CRJ 200 Criminal Investigation	3
CRJ 217 Computer Forensics II	3
CRJ 218 Computer Forensics III	3
CRJ 230 Biometrics and Identity Theft	3
CRJ 310 Computer Security I	3
CRJ 311 Computer Security II	3
CRJ 312 Computer Security III	3
CRJ 314 Security Law and Policy	3
CRJ 323 Network Defense	3
CRJ 410W Senior Project	3
CRJ 420 Physical Security I	4
CRJ 421 Physical Security II	3

Free Electives (6 Credits)

Network Concentration (12 Credits)

BCS 208 Networking Fundamentals I	3
BCS 209 Networking Fundamentals II	3
BCS 320 Scaling Networks	3
BCS 321 Connecting Networks	3

OR

Transportation Security (12 Credits)

AVN 280 Intro to Air Cargo Operations-Basic	3
AVN 300W Government in Aviation	3
AVN 400 Aviation Law	3
AVN 417 Homeland Security in Aviation	3
Total Credits:	122

Degree Type: BS
Total Required Credits: 122

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Required: (6 credits)
ECO 156 Principles of Economics (Macroeconomics)
ECO 157 Principles of Economics (Microeconomics)

At least one from: (3 credits)

ECO 255 Money and Banking
ECO 260 Intermediate Microeconomics
ECO 262 Managerial Economics
ECO 270 Intermediate Macroeconomics

Any three additional economics courses, 200 level or above from the list below: (9 credits)

ECO 250 Quantitative Analysis for Economics
ECO 259 Contemporary Economic Issues and Problems
ECO 303 Arts and Entertainment Economics
ECO 304 Sports Economics
ECO 310 Health Economics and Policy
ECO 312 Economics of Non-Profit Organizations
ECO 320 Internet and Network Economics
ECO 321 Engineering Economics
ECO 330 Modern Economic Thought
ECO 340 International Trade
ECO 341 International Finance
ECO 342 Financial Economics
ECO 350 Economics of Global Disasters
ECO 358 Economics of Labor
ECO 380 Econometrics
ECO 401 Industrial Organization
ECO 410 Public Finance/Sector Economic
ECO 412 Cost-Benefit Analysis
ECO 420 Economics of Science and Technology
ECO 430 Urban and Regional Economics
ECO 435 Environmental Economics and Policy
ECO 440 Topics in Applied Economics
ECO 441 Economics of Gender
ECO 480 Forecasting
ECO 489 Economic Internship
ECO 490 Economic Research and Reporting (Writing Intensive)
ECO 491 Applied Economic Analysis

Communication Minor

The Minor in Communication is open to all baccalaureate students outside the Professional Communications program, and consists of five courses for a total of 15 credits. Of the five courses, three are required and two are electives to be selected from any other available PCM courses at the 300-level. Students taking this minor will gain a solid foundation in Professional Communication, including an introduction to the various communication industries, the application of various methods and technologies for effective communication in organizations, and the ability to write, edit and produce various types of communications.

Student Learning Outcomes:

- Students will improve their ability to create professional communication documents and presentations using Microsoft Office applications, designed according to the purpose, function, and venue for which these are intended.
- Students will develop skill in writing for electronic media making use of industry-standard software programs in computer laboratories equipped with individual student stations.
- Students will become proficient in the process of executing a communication project, from the development of the concept to the presentation of the final product.
- Students will become familiar with a range of practical applications within the field of communication so that they are able to recognize the potential of each, and to select appropriate methods for accomplishing tasks as future employees of companies and organizations.

About Academic Minors

Farmingdale State College students are invited to enhance their studies with an "Academic Minor." A minor is a cluster of thematically related courses drawn from one or more departments. In addition to department based minors (e.g. computer programming & info systems), interdisciplinary minors are also available (e.g. legal studies).

Academic minors are approved by the College-Wide Curriculum Committee and the Provost. Students must make application for an academic minor through the department offering the minor in conjunction with the Registrar's Office Specific course work must be determined in consultation with a faculty member in the department offering the minor. A statement of successful completion of the academic minor will appear on the student's transcript at the time of graduation.

- A minor is considered to be an optional supplement to a student's major program of study.

- Completion of a minor is not a graduation requirement and is subject to the availability of the courses selected. However, if the requirements for a minor are not completed prior to certification of graduation in the major, it will be assumed that the minor has been dropped. Consequently, the student will only be certified for graduation in their primary major.
- Only students in 4 year baccalaureate programs can apply for a minor.
- A minor should consist of 15 to 21 credits.
- At least 12 credits must be in courses at the 200 level or higher.
- At least 9 credits must be residency credits.
- Specific requirements for each minor are determined by the department granting the minor.
- Students must maintain a minimum cumulative GPA of at least 2.0 in their minor. Some minors may require a higher GPA.
- Students are prohibited from declaring a minor in the same discipline as their major (e.g. one cannot combine an applied math minor with an applied math major). **Academic minors may not apply to all curricula.**
- Students are permitted to double-count courses.
- Students are only permitted to take more than one minor with appropriate written approval of their department chair or curriculum Dean.

Required Courses	(15 credits)
PCM 305 Media in Communications	3
PCM 311 Intro. to Writing for Electronic Media	3
PCM 313W Communications Theory	3
Any two additional PCM courses at the 300-level	6

Total Required Credits: 15

Required:	
CHM 270 Organic Chemistry I[1]	5
CHM 271 Organic Chemistry II[1]	5

Two Upper-Divisional Courses from the following list:	
CHM 380 Biochemistry	4
CHM 381 Advanced Biochemistry	3
CHM 480 Chemistry Research I	3
CHM 481 Chemistry Research II	3
RAM 303 Research Experience[2]	3

Total Required Credits: 16-17

[1] The organic chemistry sequence and biochemistry must be taken in residence at Farmingdale State College.

[2.] The Research Experience must be done with a Chemistry professor.

Computer Programming and Information Systems

Bachelor of Science Degree

Demand continues to be strong for students skilled in Information Technology. Of the top 10 degrees in demand for bachelor's degree levels, four are computer related. They include the following degrees:

Computer Science
Information Science and Systems
Computer Engineering
Management Information Systems/Business Data Processing

As reported in the United States Department of Labor Occupational Outlook Handbook, employment of programmers, web developers, systems analysts and network architects is projected to grow in the range of 22 – 30 percent from 2010 to 2020, faster than the average projected growth for overall occupations.

The Computer Programming and Information Systems baccalaureate degree program requires a set of core courses that all graduates must take. The Core courses provide the diverse but fundamental foundation in technology necessary to create a technology savvy individual. In addition, the student selects courses in Programming, Systems Development, Networking, Web Development or Database. Each course offers the student a skill set in one discipline of Information Technology and enables him/her to study a particular area in depth.

This program touches on all aspects of computer programming and information systems. It provides a practical hands-on approach to programming with an emphasis on solving business problems.

Typical Employment Opportunities

Computer Support Specialists
Information Technology Specialists
Data Communications Analysts
Quality Assurance Technicians
ERP Analyst
Systems Analysts
Programmer/Analysts
Data Base Analysts
Web Developers
Network Administrators
Software Applications
Computer Network Technologist
CISCO Computer Network Technologist
Infor Applications Specialist for Visual and Cloud Suite Interfaces ERP
Software Analyst Oracle Software Applications

Programmers convert project specifications, addressing problem statements and procedures, into detailed coding in a computer language. They will also develop and write computer programs to store and retrieve documents, data and information.

The Systems Analyst analyzes business, scientific and technical problems for application to computer-based systems.

For those interested in networking, our program offers courses in conjunction with the Cisco Networking Academy. Students taking and passing these courses receive training certifications for each course directly from Cisco. These courses prepare each student for taking the Cisco Certified Network Associate (CCNA) exam.

Web Development professionals are in demand due to the growth of the Internet and the expansion of the World Wide Web (the graphical portion of the Internet). This rapid growth has generated a variety of occupations related to the design, development, and maintenance of Web sites and their servers.

Database professionals will be prepared to design and administer the advanced databases that industry relies on.

Computer Programming & Information Systems (BS) Program Outcomes:

- Graduates will be trained as technical problem solvers and will receive the knowledge and skills necessary to function and grow in this high-demand workforce.

- Graduates will have had experiential learning opportunities such as internships and/or capstone projects.
- Graduates will have an understanding of social and ethical issues as it relates to information technology.
- Graduates will be effective communicators and work successfully in teams.

Liberal Arts and Sciences	(61-63 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
EGL 310 Technical Writing OR	
PCM 324 Report Writing and Technical Communications OR	
Upper Division Liberal Arts Elective as advised	3
Communications (SPE330 or SPE331) (GE)	3
The Arts (GE)	3
Foreign Language (GE)	3
Humanities (GE)	3
Social Sciences	3
American/Other World/Western Civilization History (GE)	3
Natural Science (GE)	6-8
MTH 130 Calculus I w Applications (GE)	4
MTH 390 Prob Methods in Operations Research	3
300 level Arts & Science Electives	3
Arts and Science Electives*	18

Required: Business & Computer Systems	(60 credits)
BCS 109 Introduction to Programming	3
BCS 120 Foundations of Computer Programming I	3
BCS 160 Computers, Society, and Technology	3
BCS 230 Foundations of Computer Programming II	3
BCS 215 UNIX Operating System	3
BCS 260 Introduction to Database Systems	3
BCS 262 Data Communications OR	
BCS 208 Introduction to Networks	3
BCS 300 Management Information Systems	3
BCS 301 Systems Analysis and Design	3
BCS 345 Java Programming	3
BCS 430W Senior Project	3
*BCS Elective	3
BCS 3XX 300-level elective or above	21
BUS 101 Accounting I	3

***Note:** BCS102 cannot be used to meet this elective

Degree Type: BS
Total Required Credits: 121-123

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

1: No student will be permitted to remain in the Computer Programming and Information Systems Program if he/she has received three "F's" in any BCS course or courses. Candidates for graduation will be required to have a minimum average GPA of 2.0 in BCS courses. 2: For all BCS courses that require a BCS prerequisite, the BCS prerequisite must be completed with a grade of C or better. 3: Students must complete at least 18 credits with BCS designation at Farmingdale. 4: Students with life experience may challenge up to 3 courses (9 credits via credit-by-evaluation).

Sport Management

Bachelor of Science Degree

The Sport Management program prepares students for ever-widening professional careers in the sport management industries. Our program provides students with fundamental and advanced-level courses taught by expert, experienced faculty in this dynamic and academically-rigorous subject area. In conjunction with advisors, students may tailor their degree program to best suit their career goals and professional development. Optional internships are available to sport management students during their third and fourth years of study.

Typical Employment Opportunities

Sports Marketing/Sales
Team/League Sponsorship, Ticketing
Professional Sports Organizations
Collegiate Sport Management and Marketing
Broadcasting/Communications
Sports Information Director/Media Relations
Event Management
Sport Agent
Director of Athletics
Associate Athletic Director/Compliance

Sport Management (BS) Program Outcomes:

- Graduates will have knowledge of the global and complex sports industry.
- Graduates will have knowledge of integration of the special nature of sports, management and marketing theory, and administrative principles.
- Graduates will be able to demonstrate competency in the management and leadership dimensions of sport.
- Graduates will be able to analyze and synthesize information/data and present their findings in a coherent manner.
- Graduates will be regular contributors to sport management and/or related fields.
- Graduates will exhibit an understanding of the necessity for personal integrity, ethical behavior, cultural awareness and lifelong learning.

Liberal Arts and Sciences	(60-62 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3

EGL 310 Technical Writing	3
The Arts (GE)	3
ECO 304 Sports Economics	3
Communications: SPE 130, SPE 202, SPE 330, or SPE 331 (GE)	3
Foreign Language (GE)	3
Humanities (GE)	3
American/Other World/Western Civilization History (GE)	3
MTH 110 Statistics (GE)	3
Natural Science (GE)	6-8
ECO 156 Macroeconomics	

OR

ECO 157 Microeconomics (GE)	3
PSY 101 Introduction to Psychology (GE)	3
SOC 122 Introduction to Sociology	3
PSY 304, PSY 311, PSY 330, or PSY 331	3
SOC 309 Sport in Society	3
Liberal Arts & Sciences Electives	9

Required: Business and Sport Management	**(51 credits)**
BUS 101 Accounting I	3
BUS 102 Accounting II	3
BUS 109 Management Theories and Practices	3
BUS 202 Business Law I	3
BCS 102 Computer Concepts and Applications	3
SMT 110 Introduction to Sport Management	3
SMT 215 Sport Information Management	3
SMT 220 Media and Sport	3
SMT 225 Sport Marketing	3
SMT 304 Sport Finance	3
SMT 311 Sport Law	3
SMT 320 Athletic Administration	3
SMT 340 Sport Facility Management	3
SMT 370 Research in Sport Management	3
SMT 409 Strategic Sport Management	3
SMT 420 Current Topics in Sport	

OR

SMT 440 Sport Management Internship I	3
SMT 485W Senior Seminar in Sport	3
Electives	**(9 credits)**
BUS/BCS/SMT/PED (200 level or higher), or RAM 303	6
PED	3
Total Credits:	**120-122**

Degree Type: BS
Total Required Credits: 120-122

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Required:	
AVN 101 Aviation Industry: A History Perspective	3
AVN 270 Intro to Airports Management	3
AVN 300W Gov't in Aviation	3
Aviation Electives (200 level or above)	6

Required:	**(15 credits)**

Requires 3 credits at the 100-level

GEO 110 Maps and Map Analysis	3

Students must earn at least 12 additional credits selected from the following:

Select (3) credits in physical geography or GIS:

GEO 201 Physical Geography OR	
GEO 221 Introduction to Geographic Information Systems (GIS)	3

Select (3) credits in human geography:

GEO 211 The World and Its Peoples OR	
GEO 222 Human Geography OR	
GEO 231 Europe and Its Peoples	3
Select (6) credits of geography courses at the 300-level	6

Total Credits: 15

1. At least 9 credits (3 courses) must be taken at Farmingdale.

2. Students must maintain an overall GPA of 2.5 for all courses taken for the minor.

3. All courses must be in Geography (GEO prefix); any course substitutions must be approved by the minor coordinator in advance, in consultation with a geography advisor.

Electrical Engineering Technology

Bachelor of Science Degree

The Bachelor of Science degree program in Electrical Engineering Technology is designed to meet the transfer and continuing education needs of associate degree graduates in EET or other related disciplines as well as to address the industry needs for graduates with sound and current skills in electrical engineering technology.

The program has a sound foundation of mathematics and physics, provides a variety of electives in the arts, sciences and the humanities and is focused on applying current engineering technology methods to the solution of technical problems. Transfer admission is open to students from closely allied degree programs and with proper academic advisement the students are able to complete the degree requirements in a timely fashion.

Program graduates, known as engineering technologists, are well prepared for a wide range of industry positions in the areas of electronic product development, automated testing, quality control, technical sales, technical writing, management, etc.

This program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org

Electrical Engineering Technology (BS) Program Outcomes:

- Graduates will be technically competent and have the necessary skills, and experience with modern tools of their discipline to enter careers where they can apply their knowledge in the areas of electronics, communications, systems, and technical project management.
- Graduates will use scientific methodologies and critical thinking skills to identify, analyze, and design solutions to technical problems in the areas of electronics, communications, and systems.
- Graduates will exhibit good communication skills, an ability to work collaboratively as a member of a team, as well as a recognition of the need for life-long learning and a commitment to continuous improvement.

Student Learning Outcomes:

Upon completion of the program students will be able to:

1. Apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, or technology to solve broadly-defined engineering problems appropriate to the discipline

2. Design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline

3. Apply written, oral, and graphical communication in broadly defined technical and nontechnical environments; and an ability to identify and use appropriate technical literature

4. Conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes

5. Function effectively as a member or leader on a technical team

ABET Data

Liberal Arts and Sciences	(61 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
EGL 310 Technical Writing	3
MTH 129 Precalculus (GE)	4
MTH 130 Calculus I with Applications (GE)	4
MTH 236 Calculus II with Applications (GE)	3
MTH 245 Linear Algebra	3
MTH 322 Advanced Mathematical Analysis	3
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II	4
PHY 323 Electromagnetic Theory	3
ECO 321 Engineering Economics (GE)	3
The Arts (GE)	3
Foreign Language (GE)	3
Humanities (GE)	3
American/Other World/Western Civilization History (GE)	3
Liberal Arts and Sciences Electives	9
Electrical Engineering Technology	**(65 credits)**
EET 105 Introduction to Digital Electronics	2
EET 110 Computer Applications	2
EET 111 Electric Circuits I	4
EET 113 Electric Circuits II	4
EET 118 Semiconductor Devices and Circuits	4
EET 223 Digital Electronics	4
EET 224 Amplifiers	4
EET 225 Communications Electronics	4
EET 251 Microprocessors	3
EET 311 Network Analysis	4
EET 316 Digital Design	4
EET 317 Industrial Electronics	4
EET 327 Signal Processing	4
EET 418 Microprocessor Interfacing & Control	4
EET 420 Linear Systems & Controls	4
EET 450 Design Concepts	2
EET 452W Design Project	2
Technical Electives*	6
Total Credits:	**126**

*Technical Electives must be selected from EET 414, EET 426, EET 440 or other courses in areas of student interest with Departmental approval.

Degree Type: BS
Total Required Credits: 126

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Required:	(9 credits)
SMT 110 Introduction to Sport Management	3
SMT 225 Sport Marketing	3
SMT 320 Athletic Administration	3
Electives:	**(6 credits)**

Two Sport Management (SMT) courses at the 200- level or higher (includes RAM 303)

OR

One Sport Management (SMT) course at the 200-level or higher and SOC 309 Sport in Society

OR

One Sport Management (SMT) course at the 200-level or higher and ECO 304 Sports Economics

Physical Education electives	(3 credits):

A combination of three one credit courses or one three credit course, including up to two credits for participation on NCAA varsity teams.

Ornamental Horticulture Certificate

The objective of the Certificate program is to develop and prepare individuals for careers in horticulture. Openings exist for technically-oriented specialists as sales representatives, managers, supervisors, and production managers in turf, nursery, parks, florists, landscaping, and closely related fields.

***Gainful Employment Mandatory Disclosure Statement**

Liberal Arts and Sciences	(4 credits)
BIO 192 Botany	4

Required: Horticulture	
HOR 103 Herbaceous Plants I	3
HOR 110 Horticulture I	3
HOR 111 Horticulture II Growth and Development of Cultivated Plants	3
HOR 112 Soils: The Foundation of Life	3
HOR 211 Woody Plants I	3
HOR 212 Woody Plants II	3

OR

HOR 218 Indoor Plants*	3
HOR Horticulture Electives*	15

* Student with varied interests may select electives based on advisement and course availability.

A minimum of 34 credits is required.

ARA 131 Arabic I	3
ARA 132 Arabic II	3
ARA 233 Arabic III	3
ARA 234 Arabic IV	3
HIS 117 World Civilization I	3
HIS 118 World Civilization II	3
GEO 211 The World and Its Peoples	3
HIS 212 Modern World	3
HIS 215 The World of Islam	3
HIS 216 History of Central Asia	3
HIS 217 From Constantine to Columbus	3
HIS 233 Comparative Religions and Cultures	3
POL 267 Politics of the Muslim World	3
POL 370 International Relations	3
POL 371 Geopolitics	3
POL 392 Religion and Politics	3
MLG 308 Arabic Culture and Civilization	3
MLG 309 Arabic Cinema	3
HIS 318 Israel: A History of the Jewish State	3
HIS 341 Terrorism and the Modern World	3
RAM 303 Research Experience	3

Notes: At least 12 credits (4 courses) must be in courses at the 200-level or higher. At least 9 credits (3 courses) must be taken at Farmingdale State College.

Manufacturing Engineering Technology

Bachelor of Science Degree

The Bachelor of Science degree program in Manufacturing Engineering Technology is designed to provide students with a foundation of knowledge and hands-on experience that is required and utilized by the industry. The program offers traditional courses such as Statics, Strength of Materials, and Material Science providing graduates with a solid foundation of the field. The program also offers numerous technology-based and practical courses such as Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Computer Numeric Control (CNC) Machining, Tooling for Composites, Electronic Packaging Applications, Electromechanical Control Systems, Robotics, and Statistical Quality Control providing students with a well-balanced and needed background in Manufacturing Engineering Technology. These technology-based courses are delivered through our state-of-the-art laboratories. Students also benefit from the required senior project that provides the students with a valuable integrating capstone experience. In addition, this program is designed to allow students to

extend their knowledge and skills in other areas such as Automotive, Business, Construction, Electrical, Facility, and Mechanical to support different aspects of manufacturing.

This program is ideal for high school graduates and Mechanical Engineering Technology associate degree graduates who wish to enter careers in manufacturing process and systems design, operations, quality, continuous improvement, lean manufacturing, and sustainability.

This is a four-year program. Students may matriculate on a full-time or part-time basis. This program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org.

Typical Employment Opportunities

Manufacturing Engineer
Product Design Engineer
Mechanical System Engineer
Process Design Engineer
Technical Writer
Field Service Engineer
Equipment Testing Engineer
Quality Control (QC) Engineer
Project Engineer
CNC Programmer

Manufacturing Engineering Technology (BS) Program Educational Objectives:

- Graduates will have the knowledge and skills to enter careers in manufacturing process and systems design, operations, quality, continuous improvement, lean manufacturing, and sustainability.
- Graduates will have the ability to provide solutions and solve manufacturing engineering technology related problems.
- Graduates will have the technical background to advance in their careers with an understanding and necessity for personal integrity, ethical behavior, cultural awareness, lifelong learning, and continuous improvement.

Student Learning Outcomes

- an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
- an ability to design systems, components or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
- an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes; and
- an ability to function effectively as a member as well as leader on technical teams.

ABET Data

Liberal Arts and Sciences	(60 credits)
EGL 101 Composition I: College Writing (GE)	3
EGL 102 Composition II: Writing About Literature	3
Basic Communication (GE)	3
The Arts (GE)	3
Foreign Language (GE)	3
Social and Behavioral Science (GE)	3
American/Other World/Western Civilization History (GE)	3
Humanities (GE)	3
Natural Science*	8
PHY 135 College Physics I (GE)	4
PHY 136 College Physics II (GE)	4
Math Elective	3
MTH 110 Statistics (GE)	3
MTH 129 Precalculus	4
MTH 130 Calculus with Applications	4
MTH 236 Calculus II with Applications	3
Liberal Arts & Sciences elective	3

* For Natural Science Elective, at least one chemistry course.

Support Courses	(3 credits)
BUS 300 Operations Management	3
Mechanical/ Manufacturing Courses	**(63 credits)**
MET 105L Technical Drawing and CAD	1
MET 109 Computer Programming and Applications	2
MET 117 Manufacturing Processes	2
MET 127 Advanced Manufacturing Processes	2
MET 150 Solid Modeling	2
MET 201 Statics	3
MET 205 Material Science	3
MET 206 Strength of Materials	3
MET 207 Tool Design	3
MET 230 Electrical Principles	3
MET 252 Quality Control (Metrology)	3
MET 305 Tooling for Composites	3
MET 307 Electromechanical Control Systems	3
MET 351 Computer Aided Manufacturing(CAM)	3
MET 406 Electronic Packaging Applications	3
MET 409 Statistical Quality Control(SQC)	3
MET 410W Senior Project	3
MET 415 Robotics	3
Technical Electives	15

(AET,BCS,BUS,CON,EET,IND,MET courses or RAM 303 in consultation with department chair)

Total Credits:	**126**

Degree Type: BS
Total Required Credits: 126

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Required:
BCS 120 Fundamentals of Programming I
BCS 230 Fundamentals of Programming II
BCS 345 JAVA Programming
BCS 421 Android Mobile Application Development
BCS 422 iOS Mobile Application Development

Choose one of the following:

BCS 370 – Data Structures
BCS 3XX Level or higher with permission of Chair
BCS 427- Game Programming

Landscape Development

Associate in Applied Science Degree

This program is intended to prepare students for the professional world of landscape contracting and landscape design. The Landscape Development program trains students in: landscape drafting, landscape graphics and design, landscape plans, planting plans, landscape construction, landscape surveying, computer-aided design, plant materials, and professional landscape practices.

Graduates are trained landscape horticulturists prepared to begin a career in the landscape contracting profession.

Typical Employment Opportunities

Landscape Designer
Landscape Technician
Landscape Consultant
Landscape Inspector
Landscape Contractor
Landscape Maintenance Proprietor
Landscape Construction Supervisor
Landscape Planting Supervisor

Landscape Development (AAS) Program Outcomes:

- Graduates will receive a strong foundation in design, and master skill sets utilizing traditional and cutting digital techniques.
- Graduates will demonstrate diverse knowledge and skills required to perform professionally in today's design environment.
- Graduates will exhibit the knowledge necessary to understand design from an historical perspective, as well as current and future trends of industry.

Liberal Arts and Sciences	(22-24 credits)
EGL 101 Composition I: College Writing	3
EGL 102 Composition II: Writing About Literature	3
Bl0 192 Botany	4
BIO 198 Entomology OR	
BIO 290 Entomology II	3-4
Mathematics (by Advisement)	3-4
General Education Electives	6

Required:Horticulture	(40 credits)
HOR 103 Herbaceous Plants I	

OR

HOR 204 Herbaceous Plants II	3
HOR 110 Horticulture I	3
HOR 111 Horticulture II Growth and Development of Cultivated Plants	3
HOR 112 Soils: The Foundation of Life	3
HOR 127 Horticulture Seminar	1
HOR 131 Landscape Drafting I	3
HOR 133 Landscape Drafting II	3
HOR 207 Landscape Plans I	3
HOR 211 Woody Plants I	3
HOR 212 Woody Plants II	3
HOR 219 Landscape Construction	3
HOR 220 Landscape Plans II	3
HOR 238 Turfgrass Culture	3
HOR 371 Landscape CAD I	3

Total Credits	62-64

Degree Type: AAS
Total Required Credits: 62-64

Criminal Justice: Police, Courts and Corrections

Bachelor of Science Degree

The Bachelor of Science program in Criminal Justice: Police, Courts, and Corrections prepares students for careers in law enforcement and corrections on the local, state, and federal levels. Career opportunities for graduates also exist with the courts, as well as with private police and military police forces.

The program blends coursework in patrol operations, homeland security and counterterrorism, courts and the judiciary, probation and parole, privacy law, civil rights and liberties, law enforcement administration, leadership and ethics, intelligence operations, and intelligence analysis to provide students with the ability to develop tactical and strategic plans to reduce crime and protect society.

The goal of this program is to produce graduates with a critical understanding of criminal justice agency operations, theories, and practices, crime and its causes, how intelligence operations and analysis can improve the ability of the police to counter terrorism and crime and who are prepared to use modern criminal justice agency operations and specialized approaches in the design of crime reduction programs.

Typical Employment Opportunities:

Police and Sherrif's Patrol Officers
Transit and Railroad Police
New York Detectives and Criminal Investigators
New York State Probation Office and Correctional Treatment Specialist

Criminal Justice: Police, Courts, and Corrections (BS) Program Objectives:

- Graduates will be able to utilize intelligence operations and analysis in the design of police strategic and tactical planning efforts.
- Graduates will be able to undertake and complete the design and implementation of criminal justice agency programs aimed at reducing crime.
- Graduates will be able to develop an assessment program which measures and evaluates criminal justice agency performance.
- Graduates will be able to formulate and interpret policies the impact the criminal justice system in its efforts toward public safety.

Liberal Arts and Sciences	(37 credits)
EGL 101 Composition I: College Writing (GE)	3
SPE 130 Public Speaking (GE)	3
MTH 110 Statistics (GE)	3
Humanities Elective (GE)	3
Arts Elective (GE)	3
History Elective (GE)	3
Natural Science course with a lab (GE)	4
PSY 101 Introduction to Psychology (GE)	3
SOC 122 Introduction to Sociology (GE)	3
Foreign Language (GE)	3
SOC 229 Race and Ethnic Relations (GE) OR	
SOC 231 Multiculturalism (GE)	3
EGL 102 Composition II: Writing About Literature	3

Required: Lower Division	(39 credits)
GEO 110 Maps and Map Analysis	3
CRJ 100 Intro to Criminal Justice	3
CRJ 101 Law Enforcement and Community Relations	3
CRJ 102 Juvenile Delinquency	3
CRJ 105 Corrections in America	3
CRJ 115 Computer Forensics	3
CRJ 200 Criminal Investigation	3
CRJ 201 Criminalistics	3
CRJ 203 Criminology	3
CRJ 204 Criminal Law	3
CRJ 205 Criminal Procedure Law	3
CRJ 211 Law Enforcement Administration	3
Free Elective	3

Required: Upper Division	(47 credits)
SOC 366 Sociological Research Methods	3
HIS 341 Terrorism & Modern World	3
PSY 315 Abnormal Psychology	3
Upper Division Technical Elective	6
CRJ 350 Courts and the Judiciary	3
CRJ 360 Probation and Parole	3
CRJ 370 Patrol Operations	4
CRJ 374 Intelligence Operations	4
CRJ 380 Homeland Security and Counterterrorism	3
CRJ 405 Corrections and Reentry	3
CRJ 425 Policy and Program Evaluation	3
CRJ 450 Privacy and Equality	3
CRJ 454 Ethics and Leadership in Criminal Justice	3
CRJ 460W Senior Project (Capstone)	3

Total Credits	123

Degree Type: BS
Total Required Credits: 123

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Technical electives may be selected from the following list:

Any 100, 200, 300 or 400-level CRJ or GEO course from an accredited program
CRJ 316 Victimology
CRJ 354 Police Leadership
CRJ 380 Organized Crime
CRJ 444 Intelligence Analysis
CRJ 458 Criminal Justice Internship
PSY 300/CRJ 300 Forensic Psychology
PSY 304 Multicultural Psychology
PSY 311 Organizational Behavior
PSY 331 Industrial/Organizational Psychology
GEO 323 Urban Geography
GEO 221 Introduction to Geographic Information Systems (GIS 222)
GEO 321 Geographic Information and Spatial Analysis (GIS 331)
POL 310 Introduction to Political Theory
SOC 325 Social Inequality
SOC 342 Deviance: Crime, Sex and Drugs

General Horticulture

Associate in Applied Science Degree

This program is designed to provide a generalized study of horticulture requiring basic introductory courses while offering a wide range of electives so that the students can develop their desired areas of expertise.

Students receive training in plant identification, botany, entomology, soils, and horticulture. Students may elect courses such as: greenhouse management, plant propagation, landscape drafting, landscape construction, commercial floral design and arboriculture. The laboratory hours provide students with valuable “hands-on” experiences in our extensive greenhouses and ornamental teaching gardens.

Professional development opportunities are varied since the program offers students three horticulture electives. This allows students to choose their own areas of specialization within the program.

Typical Employment Opportunities

Floral Designer
Retail Florist
Flower Shop Manager
Sales Manager
Interior Landscape Designer
Commercial Grower
Interior Horticultural Service Technician
Wholesale Distributor
Garden Center Salesperson/Manager
Arboretum Technician
Nursery Salesperson/Manager
Wholesale Nursery Manager
Municipal & Urban Forestry Manager
Commercial or Utility Arborist
Landscape Garden Maintenance
Public Garden Employment

General Horticulture (AAS) Program Outcomes:

- Graduates will receive a strong foundation in science and master skillsets utilizing traditional and cutting edge techniques.
- Graduates will demonstrate diverse knowledge and skills required to perform professionally in today's complex multi-disciplinary environment.
- Graduates will exhibit the knowledge necessary to understand horticulture from an historical perspective, as well as current and future trends of industry.

Liberal Arts and Sciences	**(22-24 credits)**
EGL 101 Composition I: College Writing	3
EGL 102 Composition II: Writing About Literature	3
Bl0 192 Botany	4
Bl0 198 Entomology OR	
BIO 290 Entomology II	3-4
Natural Science/Mathematics	3-4
General Education Electives	6
Support Courses	**(3 credits)**
BUS Business Elective	

OR

BCS 102 Computer Concepts and Applications	3
Required:Horticulture	**(37 credits)**
HOR 103 Herbaceous Plants I	3
HOR 110 Horticulture I	3
HOR 111 Horticulture II Growth and Development of Cultivated Plants	3
HOR 112 Soils: The Foundation of Life	3
HOR 127 Horticulture Seminar	1
HOR 204 Herbaceous Plants II	3
HOR 211 Woody Plants I	3
HOR 212 Woody Plants II	3
HOR 218 Indoor Plants	3
HOR 238 Turfgrass Culture	3
HOR Horticulture Electives (in non-required HOR)	9
Total Credits:	**62-64**

Degree Type: AAS
Total Required Credits: 62-64

Required:

HOR 110 Horticulture I	3
HOR 111 Horticulture II - Growth and Development of Cultivated Plants	3
HOR 112 Soils: The Foundation of Life	3

12 credits must be selected from Horticulture courses at the 200-level or higher

Notes: The selection of electives should be done in consultation with a full-time member of the Department. Students must maintain a cumulative GPA of 2.0 in their horticulture courses.

STYLING TEST PAGE

This is 2nd level heading

This is a test paragraph.

This is 3rd level heading

This is a test paragraph.

This is 4th level heading

This is a test paragraph.

This is 5th level heading

This is a test paragraph.

This is 6th level heading

This is a test paragraph.

Basic block level elements

This is a normal paragraph (`p` element). To add some length to it, let us mention that this page was primarily written for testing the effect of **user style sheets**. You can use it for various other purposes as well, like just checking how your browser displays various HTML elements by default. It can also be useful when testing conversions from HTML format to other formats, since some elements can go wrong then.

This is another paragraph. I think it needs to be added that the set of elements tested is not exhaustive in any sense. I have selected those elements for which it can make sense to write user style sheet rules, in my opionion.

This is a `div` element. Authors may use such elements instead of paragraph markup for various reasons. (End of `div`.)

> This is a block quotation containing a single paragraph. Well, not quite, since this is not *really* quoted text, but I hope you understand the point. After all, this page does not use HTML markup very normally anyway.

The following contains address information about the author, in an `address` element.

Jukka Korpela, jkorpela@cs.tut.fi
Päivänsäteenkuja 4 A, Espoo, Finland

Lists

This is a paragraph before an **unnumbered** list (`ul`). Note that the spacing between a paragraph and a list before or after that is hard to tune in a user style sheet. You can't guess which paragraphs are logically related to a list, e.g. as a "list header".

- One.
- Two.
- Three. Well, probably this list item should be longer. Note that for short items lists look better if they are compactly presented, whereas for long items, it would be better to have more vertical spacing between items.
- Four. This is the last item in this list. Let us terminate the list now without making any more fuss about it.

The following is a `menu` list:

The following is a `dir` list:

This is a paragraph before a **numbered** list (`ol`). Note that the spacing between a paragraph and a list before or after that is hard to tune in a user style sheet. You can't guess which paragraphs are logically related to a list, e.g. as a "list header".

1. One.
2. Two.
3. Three. Well, probably this list item should be longer. Note that if items are short, lists look better if they are compactly presented, whereas for long items, it would be better to have more vertical spacing between items.
4. Four. This is the last item in this list. Let us terminate the list now without making any more fuss about it.

This is a paragraph before a **definition** list (`dl`). In principle, such a list should consist of *terms* and associated definitions. But many authors use `dl` elements for fancy "layout" things. Usually the effect is not *too* bad, if you design user style sheet rules for `dl` which are suitable for real definition lists.

recursion
  see recursion

recursion, indirect
  see indirect recursion

indirect recursion
  see recursion, indirect

term
  a word or other expression taken into specific use in a well-defined meaning, which is often defined rather rigorously, even formally, and may differ quite a lot from an everyday meaning

Text-level markup

- CSS *(Cascading Style Sheets)* (an abbreviation; `abbr` markup used)
- (an acronym; `acronym` markup used)
- **bolded** (`b` markup used - just bolding with unspecified semantics)
- (`big` markup used)
- large size (`font size=6` markup used)
- Courier font (`font face=Courier` markup used)
- red text (`font color=red` markup used)
- *Origin of Species* (a book title; `cite` markup used)
- `a[i] = b[i] + c[i);` (computer code; `code` markup used)
- here we have some ~~deleted~~ text (`del` markup used)
- an is an entity consisting of eight bits (`dfn` markup used for the term being defined)
- this is *very* simple (`em` markup used for emphasizing a word)
- *Homo sapiens* (should appear in italics; `i` markup used)
- here we have some inserted text (`ins` markup used)
- type `yes` when prompted for an answer (`kbd` markup used for text indicating keyboard input)
- “Hello!” (`q` markup used for quotation)
- He said: “She said Hello!” (a quotation inside a quotation)
- you may get the message `Core dumped` at times (`samp` markup used for sample output)
- this is not that important (`small` markup used)
- ~~overstruck~~ (`strike` markup used; note: `s` is a nonstandard synonym for `strike`)
- **this is highlighted text** (`strong` markup used)
- In order to test how subscripts and superscripts (`sub` and `sup` markup) work inside running text, we need some dummy text around constructs like x_1 and H_2O (where subscripts occur). So here is some fill so that you will (hopefully) see whether and how badly the subscripts and superscripts mess up vertical spacing between lines. Now superscripts: M^{lle}, 1^{st}, and then some mathematical notations: e^x, $\sin^2 x$, and some nested superscripts (exponents) too: e^{x^2} and $f(x)^{g(x)^{a+b+c}}$ (where 2 and a+b+c should appear as exponents of exponents).
- `text in monospace font` (`tt` markup used)
- underlined text (`u` markup used)
- the command `cat` *filename* displays the file specified by the *filename* (`var` markup used to indicate a word as a variable).

Some of the elements tested above are typically displayed in a monospace font, often using the *same* presentation for all of them. This tests whether that is the case on your browser:

- `This is sample text inside code markup`
- `This is sample text inside kbd markup`
- `This is sample text inside samp markup`
- `This is sample text inside tt markup`

Links

- main page
- Unicode Standard, chapter 6

This is a text paragraph that contains some inline links. Generally, inline links (as opposite to e.g. links lists) are problematic from the usability perspective, but they may have use as “incidental”, less relevant links. See the document *Links Want To Be Links*.

Tables

The following table has a caption. The first row and the first column contain table header cells (`th` elements) only; other cells are data cells (`td` elements), with `align="right"` attributes:

Country	Total area	Land area
Denmark	43,070	42,370
Finland	337,030	305,470
Iceland	103,000	100,250
Norway	324,220	307,860
Sweden	449,964	410,928

Character test

The following table has some sample characters with annotations. If the browser’s default font does not contain all of them, they may get displayed using backup fonts. This may cause stylistic differences, but it should not prevent the characters from being displayed at all.

Char.	Explanation	Notes
ê	e with circumflex	Latin 1 character, should be ok
—	em dash	Windows Latin 1 character, should be ok, too
Ā	A with macron (line above)	Latin Extended-A character, not present in all fonts
Ω	capital omega	A Greek letter
−	minus sign	Unicode minus
#	diameter sign	relatively rare in fonts

Jukka Korpela

Date of creation: 2000-09-15. Last update: 2013-03-21.

Admissions

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