COURSE LISTINGS

This section is arranged alphabetically by program titles. The three-digit number is a code keyed to student records including transcripts. Courses indicated by an asterisk (*) are offered at off-campus sites.

ACCOUNTING

ACCT 100 - ACCOUNTING INFORMATION AND MANAGEMENT DECISIONS
This course, for non-business majors only, is an accounting approach to measuring and reporting on the economic activity, resources, and obligations of a business. Also discussed is the accounting approach to the application of accounting information to performance evaluation and the decision making process. Basic accounting processes, evaluation of financial position earnings, measurement in retailing and manufacturing, basic cost accounting and budgeting are discussed. This course is not available to accounting, business administration or computer information systems majors.

3 credits (3 lecture hours), fall or spring semester

ACCT 101 - PRINCIPLES OF ACCOUNTING I
An introduction to accounting theory and principles as applied to a business enterprise is covered in Principles of Accounting I. Principles and procedures as applied to the accumulation, processing and reporting of financial information resulting from business transactions are discussed. Students are exposed to manual and electronic media for the preparation of journals, ledgers, financial statements. Inventories, receivables, payables, plant assets and payroll accounting are also covered.

Prerequisite: MAGN 101
3 credits (3 lecture hours), fall or spring semester

ACCT 102 - PRINCIPLES OF ACCOUNTING II
This course covers the methods of accounting for corporate organization and operation including equity-related transactions, corporate income statement, and statement of cash flows. Financial statement analysis is also covered. Managerial accounting is also included and covers such topics as product costing, short-run decision making, budgeting, and CVP analysis.

Prerequisite: ACCT 101 minimum grade of C
3 credits (3 lecture hours), fall or spring semester

ACCT 103 - COMPUTERIZED ACCOUNTING
Introduces students to the advanced automated accounting system used in today's business environment. Teaches skills to convert accounting data into a format that can be processed through contemporary accounting software packages. Exposure to advanced accounting problems incorporates knowledge from the Financial and Managerial Accounting courses. Students will work with spreadsheets, databases, Internet, presentation software, and general ledger programs.

Prerequisite: ACCT 102, minimum grade of C
3 credits, spring semester

ACCT 105 - MANAGERIAL ACCOUNTING
This course continues the presentation of managerial accounting topics from Principles of Accounting II. Emphasizes use of accounting data within an organization by its managers. The purpose of this course is to define the information needed, identify sources of information and explain how managers use the information in planning, control, and making decisions. A sampling of relevant articles from recent professional publications will focus on new management techniques necessary in today's changing business environment.

Prerequisite: ACCT 102, minimum grade C
3 credits, spring semester

ACCT 201 - INTERMEDIATE ACCOUNTING I
This course covers advanced accounting principles, practices of corporations, and current trends using publications of the leading accounting organizations such as the Financial Accounting Standards Board and AICPA. Topics include financial statements, current assets, investments, plant assets and current liabilities.

Prerequisite: ACCT 102 minimum grade of C
3 credits (3 lecture hours), spring semester

ACCT 205 - COST ACCOUNTING
Topics covered include elements of production cost, material, labor and overhead. Also covered are the job cost system, process cost system, standard cost system, and other miscellaneous cost accounting topics.

Prerequisite: ACCT 102 minimum grade of C
3 credits (3 lecture hours), spring semester

ACCT 212 - FEDERAL INCOME TAX ACCOUNTING
Basic principles of federal income taxation are covered. Topics include: federal and state income taxation for the individual including filing requirements exemptions, deductions, determination of taxable income, computation of tax, tax credits and tax payments. A project is required.

Prerequisite: Overall GPA of 2.0
3 credits (3 lecture hours), spring semester

AGRICULTURAL BUSINESS

AGBS 100 – AGRICULTURAL ECONOMICS
In this course, fundamental economic principles key to agriculture are discussed. Emphasis is placed on specialization and exchange, the commercial banking system, monetary and fiscal policy, and supply and demand. Units on gross national product and the consumer price index, Global international trade, United States and New York state economics are also discussed.

3 credits (3 lecture hours), fall and spring semester

AGBS 110 – INTRODUCTION TO AGRICULTURAL BUSINESS MANAGEMENT
AGBS 110 is a dual-credit course with designated high schools to acquaint selected high school students with the basic principles of agricultural business. Students will have the opportunity to gain valuable career planning skills through job shadowing experiences, resume writing and interviews. Students will learn about the various forms of business organizations, agriculture marketing, sales; consolidated and diversified agriculture business opportunities. Students will also be exposed to the financial management and decision making process of owning and operating an agriculture business.

Prerequisites: Junior or senior level standing
3 credits (3 lecture hours), spring semester

AGBS 200 – MARKETING AGRICULTURAL PRODUCTS
Supply and demand analysis, elasticity of demand, commodity futures exchange with emphasis on individual projects in futures trading are included in this course. Market structure, marketing orders, pricing, advertising, and approaches to studying marketing problems are also covered as well as units on cooperatives and marketing alternatives.

3 credits (3 lecture hours), spring semester
AGBS 225 - ENVIRONMENTAL ECONOMICS
This course covers applications of basic economic principles to environmental problems, pareto optimality, efficiency, price theory, perfect competition, market intervention and failure, and how the neoclassical theory affects policy decisions regarding the environment. Economic concepts are presented in an environmental context.

3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

AGBS 230 – AGRICULTURAL BUSINESS MANAGEMENT
Fundamentals of small agricultural business operation. Forms of business organization. Sources and uses of long and short term credit and extending credit. Capital budgeting and investment analysis.

2 credits (2 lecture hours)

AGBS 240- FARM MANAGEMENT AND FINANCE
This course is designed to give students a broad understanding of the management skills required to be successful in 21st century agriculture. Students will study organizational behavior, human resource management and financial decision making as they relate to agricultural businesses with a particular emphasis on: dairy, equine, vegetable and fruit production. Major emphasis is on the fundamental principles underlying sound farm organizational and operational decision making. The principles and techniques developed are general enough to have validity through time, in any geographic area under any conditions. On the other hand, they are specific enough to be applied to an individual farm at a given time. This course requires a 15 page research paper (APA format) applying sound theoretical and practical research to an agricultural business of choice.

Prerequisite: AGBS 100 or permission of the instructor
4 credits: fall and spring

AGBS 250 – DECISION MAKING FOR AGRICULTURAL MANAGERS
Using economic models and managerial decision making processes, students will be responsible for completing weekly analysis of farm operations, identifying and solving problems and/or creating opportunities for improving farm operations. Students will be actively involved in the process of gathering, organizing, and analyzing financial, production, and labor efficiency data. Upon completion of data analysis, evaluation of alternatives and making final recommendations to management, students will be actively involved in the implementation and monitoring processes. Each semester, students will complete a comprehensive case study analysis.

3 credits, (2 lecture hours, 2 laboratory hours), spring and fall semesters

AGBS 305 – AGRICULTURAL FINANCIAL DECISION MAKING
This course involves case work and on-farm consulting with the Farm Credit System. All lectures will be taught at Morrisville State College. Most laboratory assignments will be completed at First Pioneer Farm Credit (the largest agricultural lender in the United States) in Sangerfield, NY, or at selected farms in which students will act as agricultural leaders.

Prerequisites: ACCT 101, AGBS 240
3 credits (2 lecture hours, 2 laboratory hours), fall semester

AGBS 350 – AGRICULTURE BUSINESS DEVELOPMENT
This course provides basic economic theories to help students understand issues related to agribusiness development. Following the study of economic theories, empirical issues will be discussed including agricultural tourism, pollution and environment, the green revolution and the new trends in alternative energy focusing on the economic impact of utilizing bio diesel and ethanol. Students will learn how to look at issues related to agribusiness development from an economic perspective, and will learn how to apply the basic tools of economic analysis to a wide range of issues relating to renewable and non-renewable natural resource use.

Prerequisites: AGBS 240 or permission of the instructor
3 credits (3 lecture hours), fall semester

AGBS 400 – DISTRIBUTION AND MARKETING OF AGRICULTURAL PRODUCTS
Through a series of six modules--cooperatives in agriculture; agriculture commodity purchasing and selling; food processing; product distribution; consumer retail relations; and financial feasibility --students will gain valuable experience and insight into the rapidly developing value added sector of the agriculture industry. Students are required to take a field trip to New York City and numerous other consumer markets to meet course requirements. All laboratory exercises will be conducted at either Nelson Farms, the Agribusiness Dairy Processing facility or established off-campus collaborating businesses. Students will rotate through each module.

Prerequisites: AGBS 100 Agricultural Economics or ECON 100 Introduction to Macroeconomics or ECON 140 Introduction to Microeconomics, AGBS 200 Marketing of Agricultural Products or BSAD 112 Marketing, AGBS 240
4 credits (1 lecture hour, 6 laboratory hours), fall or spring semester

AGBS 405 – CAPSTONE FOR FARM MANAGERS AND RURAL ENTREPRENEURS
Students will be introduced to successful rural entrepreneurs. They will work in teams and act as consultants to evaluate farm and rural agriculturally based businesses financial, human resources, and strategic management practices. Students interested in food and agricultural entrepreneurship will evaluate food processing techniques, packaging and food safety procedures. Upon identifying key problems, students will present their finding to both class and entrepreneur. All lectures will be taught at Morrisville State College. Most of the laboratory assignments will be completed at the farm or rural business in which the students will be serving as consultants.

Prerequisites: AGBS 100, AGBS 240, 305, ACCT 100 or ACCT 101
3 credits (2 lecture hours, 2 laboratory hours), spring semester

AGBS 450 – AGRICULTURE POLICY AND DEVELOPMENT
This course will provide students with a foundation in the principles and practices of agricultural policy and the policy process. Students will develop an understanding for the policy process as it relates to agriculture, its interaction with other institutional arrangements, and an awareness of policy analysis. Specific emphasis will be placed on the National Farm Bill, New York State Agriculture Policy and its impact on the rural economy as well as the individual producer. Students are required to participate in field trips to the National Agriculture Outlook Conference in Arlington, Virginia, and Agriculture Awareness day in Albany, New York.

Prerequisites: AGBS 100 Agricultural Economics or ECON 100 Introduction to Macroeconomics or ECON 140 Introduction to Microeconomics
3 credits (3 lecture hours), spring semester ours

AGBS 460 – INTERNATIONAL AGRICULTURE MARKETING
The globalization of markets for food and agricultural products makes it essential to understand how international food and agricultural markets function and how they influence the options and choices of food and agribusiness firms. This course examines emerging globalization issues, the global food and agribusiness environment, potential markets, global agribusiness strategy, and global agribusiness operations. The course will also examine the impact of our changing social demographics on domestic product sales. Students will be
required to prepare and present an analysis of barriers to international trade and opportunities for emerging national and international markets, as well as develop an international marketing plan for a product of their choice.

Prerequisites: AGBS 100
3 credits (3 lecture hours), spring semester

AGBS 470 - INTERNSHIP IN AGRICULTURAL MARKETING AND MANAGEMENT
In this course, students will participate in supervised fieldwork in a selected agriculture business or agriculture service organization. Students carry out a planned program of educational experiences under direct supervision of an owner, manager, or supervisor of the agriculture business/organization. Each intern will be advised and monitored by a member of the faculty on a regular basis. Requirements include a journal, interim reports, supervisor evaluations, a summary report and an oral presentation.

15 credits

AGBS 480 - RETAILING AGRICULTURE PRODUCTS
This course provides students with a comprehensive view of retailing and direct marketing of agriculture products. Students will study and analyze current multi-channel retail strategies among box stores, roadside/farms stands, farmer's markets, grocery stores and e-commerce activities. Students will be required to research and track the life of a value-added product from the farm to the table, prepare and present a plan to market a value-added agriculture product to a box store of their choice, as well as obtain experience working in a retail setting.

Prerequisites: AGBS 240
3 credits (3 lecture hours), spring semester

AGRICULTURAL ENGINEERING

AGEN 100 - EQUIPMENT CARE AND MAINTENANCE
Care, adjustments and overall maintenance of gasoline and diesel power applications. Servicing, fuel systems, lubrication, cooling, exhaust systems, clutch and brake adjustments and hydraulic systems will be covered. Principles of safety as applied to mobile machinery are emphasized. The course is designed for basic competency skills in care and maintenance.

3 credits (2 lecture hours, 2 laboratory hours)

AGEN 102 - AGRICULTURAL EQUIPMENT OPERATION
Familiarize students with the safe and proper methods of operating, performing maintenance, managing and selecting equipment in an economically viable way. Equipment that will be covered includes stationary and mobile machines such as auxiliary power units and equipment found on small farms and horticultural applications. It does not include the in-depth study into any specific machine, but covers the basics.

2 credits (1 lecture hour, 3 laboratory hours), fall semester

AGEN 103 - NATURAL RESOURCE EQUIPMENT OPERATION
Operation, safety and preventative maintenance of natural resource equipment including chain saws, log skidder, log loader, dump truck, bulldozer, fork lift, skid steer loader, backhoe, and flatbed trailer is practiced. Included in this course is the instruction and hands-on operation of chain saws, which with additional training in adult first aid/CPR and environmental concerns will qualify students for New York State Logger certification.

2 credits (1 lecture hour, 2 laboratory hours), fall or spring semester

AGEN 104 - ESTATE AND SMALL FARM EQUIPMENT OPERATION
This course will familiarize the student with safe and proper methods of operating, performing maintenance, managing and selecting equipment in an economically viable way. Equipment covered will include stationary and mobile machines such as auxiliary power units and equipment found on small farms and horticultural applications. It does not include the in-depth study into any specific machine, but covers the basics.

2 credits (1 lecture hour, 3 laboratory hours), fall semester

AGEN 105 - PRINCIPLES OF FARM MACHINERY
Care, adjustment, operation and repair of tillage, planting and harvesting field machinery common to New York state farms with special attention to adjustment and maintenance in the laboratory are covered in this course. Efficient machinery selection and use is also investigated.

2 credits (1 lecture hour, 2 laboratory hours), fall semester

AGEN 110 - SMALL POWER EQUIPMENT
Principles of operation, service and repair of 2 and 4 cycle small engines and the equipment which they operate such as lawn and garden equipment, chain saws, small power generators and outboard motors. Laboratory practice in testing, servicing and rebuilding the equipment.

2 credits (1 lecture hour, 2 laboratory hours), fall semester

Non-majors only

AGEN 115 - AGRICULTURAL ENGINEERING—INDUSTRY OVERVIEW
This course will expose the student to the many and varied opportunities that exist for graduates in Agricultural Engineering Technology and Agricultural Mechanics. The course will present a broad spectrum of speakers to describe their careers and the linkages that exist to their educational background.

1 credit (1.5 lecture hours), first 10 weeks of fall semester

AGEN 120 - WATER SUPPLY AND SANITATION
Development of sources of water. Selection, servicing, installation of pumping equipment, and treatment of water. Designing and installing supply plumbing and sanitary disposal systems.

2 credits (1 lecture hour, 2 laboratory hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement.

AGEN 125 - RESIDENTIAL ELECTRIFICATION
Design, installation, and troubleshooting of alternating current circuits used in residential construction. Circuit planning and layout as per national electrical code is emphasized. A set of hand tools is required for this course.

3 CREDITS (2 LECTURE HOURS, 2 LABORATORY HOURS), SPRING SEMESTER

AGEN 131 - FUNDAMENTALS OF HYDRAULICS
Students will develop a foundation of hydraulic principles and system operation as found on mobile hydraulic systems. Topics studied will include the principles of flow and pressure and how force can be multiplied within a mobile hydraulic system. The student will be introduced to components used in hydraulic systems: pumps (gear, vane and piston), valves, cylinders and accumulators. Students will also develop an understanding of how an open center hydraulic system functions.

3 credits (2 lecture hours, 2 laboratory hours), fall semester

AGEN 135 - CONSTRUCTION SURVEYING
Basic concepts of construction surveying as it specifically relates to agriculture and conservation applications, including field work in land
drainage, pipeline stakeout, building stakeout and road construction. Survey planning and associated survey computations. Emphasis is on the operation of modern land measurement equipment including dumpy, laser and automatic levels, theodolite and EDM.

3 credits (2 lecture hours, 3 laboratory hours), fall semester

AGEN 140 - WELDING
Operation of oxyacetylene and electric welders. Laboratory practice in welding and cutting of ferrous metals by processes common and current to the industry.

3 credits (1 lecture hour, 1 recitation, 2 laboratory hours), spring semester

AGEN 145 - AGRICULTURAL BUILDING SYSTEMS
The design of agricultural production facilities as an integration of unique structural, environmental, and waste management systems is studied along with the principles of design and construction of the structure and associated environmental systems with emphasis on coordination of various systems. Laboratory exercises include construction of an exemplary structure on site.

3 credits (2 lecture hours, 3 laboratory hours), spring semester

AGEN 151 – APPLIED HYDRAULICS FOR HYDROPOWER GENERATION
This course covers the basic concepts of water hydraulics as applied to hydropower generation. The course is introductory in nature and is intended to provide basic review of fluid static and hydrodynamic conditions as applied to micro- and mini-hydro power generation systems. Focus will be on the utilization of the conservation of energy principle to establishing the conditions that will impact the selection of a hydropower generation system along with the assessment of how to harness energy from flowing fluids (water).

Prerequisites: MATH 102
3 credit (2 lecture hour, 2 laboratory hours), spring semester

AGEN 161 - BASIC HYDRAULICS
This course will present the fundamental principles of hydraulic and pneumatic systems as used on mobile agricultural, construction and on-highway machinery. Disassembly and inspection of the various components in hydraulic systems will be completed throughout the course. Introduction to ISO graphic symbols and how they are represented in actual systems will be stressed. Additionally, diagnostics and testing of equipment will be discussed.

Co-requisite MAGN 101 or permission of instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

AGEN 210 - ADVANCED SMALL POWER EQUIPMENT
Students will learn technical and business aspects of operating a small engine repair business and technical theory covering design characteristics of different types of compact power units for lawn and garden, recreational vehicle, and commercial and industrial applications. Laboratory classes simulate repair shop conditions. Students are responsible for scheduling, servicing, performing repairs of equipment for the college community. A basic set of tools is required.

Prerequisite: AGEN 100 and AGEN 110 or DTEC 150
3 credits (2 lecture hours, 3 laboratory hours), spring semester

AGEN 220 – MAINTENANCE, REPAIR, AND PERFORMANCE TUNING OF ARCTIC CAT RECREATIONAL EQUIPMENT
This course will cover the maintenance, repair, and performance tuning of Arctic Cat Snowmobiles and All-Terrain Vehicles. The concepts taught will be common to many other sport equipment manufacturers’ products. The systems studied will include: Suspension, EFI, DriveTrick, Electrical, Fuel, and 2 and 4 stroke engines. The course will include mandatory testing that will allow the student to be certified at the basic level of Arctic Cat CatMaster Technician Certification.

Prerequisite: AGEN 210 and successful completion of EETC 4-Stroke Cycle Test
4 credits (2 lecture hours, 4 laboratory hours), fall semester

AGEN 240 - ADVANCED WELDING
Bonding and fusion of metals including alloy steels and nonferrous metals. Metallurgical changes which accompany welding and the fabrication of metals, TIG, MIG, Flux-cored and plasma-arc processes are stressed.

Prerequisite: AGEN 140 or AUTO 102
2 credits (1 recitation, 2 laboratory hours), fall semester

AGEN 261 - ADVANCED HYDRAULICS
This course will be an application of previously mastered principles of hydraulic systems to both farm and light industrial equipment. Inspection, testing and servicing hydraulic circuits, systems and components, such as pumps, lift systems, hydraulic transmissions and motors will be emphasized. Appropriate testing procedures and equipment will be used. System difficulties and common service problems will be diagnosed.

Prerequisite: AGEN 161, MAGN 101 or permission of instructor.
4 credits (2 lecture hours, 1 recitation hour, 2 laboratory hours), fall semester

AGEN 270 - TRACTOR OVERHAUL AND REPAIR
In this course, students study principles, overhaul and repair of multi-cylinder internal combustion engines and various types of engines used in farm and light industrial power applications. Design and construction of engine components and systems and fundamentals and principles of systems of power transmission are covered. There is a laboratory practice in which students may use their own machines.

Prerequisites: AGEN 100, AGEN 261, DTEC 250, or permission of instructor, agricultural engineering majors only
5 credits (2 lecture hours, 4 laboratory hours), spring semester

AGEN 300 - INTERNSHIP IN AGRICULTURAL ENGINEERING
Students work in an approved job in the agricultural engineering industry. Comprehensive written report required at the end of the work period. Employer and staff evaluation are due upon completion of internship.

Prerequisite: Completion of one semester in Agricultural Engineering and permission of staff, overall GPA of 2.0.
4 credits (12-Week, 480-hour minimum), fall or spring semester

AGRICULTURE AND NATURAL RESOURCES

AGNR 200 – JOB PREPARATION SKILLS AND RESOURCES
This course investigates career opportunities in the field of agriculture. Students learn how to prepare for a job interview in their specific field. They will prepare resumes, cover letters, and practice various types of interview skills.

Prerequisite: Senior Standing
1 credit (2 hours lecture/seminar)

AGNR 400 – INSTRUCTIONAL ASSISTANCE EXPERIENCE
Designed to concentrate students’ knowledge in an Agriculture Science or Natural Resource discipline to the extent that they can convey that knowledge to associate degree level students. As part of their course work they will research class topics, lead discussions for 100 or 200 level course work, demonstrate practical applications during laboratory sessions, and
assist the professor with class and lab preparation. Student is expected to meet regularly with a discussion or laboratory section, to gain instructional experience, and to regularly discuss course objectives, techniques, and subject matter with the Lead Faculty member.

Prerequisite: “B” or better in the required course or by permission of the Instructor.
1-4 credits (as arranged with the Professor)
Fall or Spring Semester

AGRONOMY (CROPS AND SOILS)

AGRO 105 - SOIL AND WATER CONSERVATION
Principles of soil and water conservation are covered in this course as well as practical application through land use, runoff and erosion control and soil management practices.
2 credits (3 lecture hours, 2 laboratory hours), spring semester (8 weeks)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

AGRO 110 - SOIL SCIENCE
This course covers the fundamentals of soil science, origin, nature and formation of soils, physical and chemical properties and soil management practices.
3 credits (2 lecture hours, 2 laboratory hours), fall and spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

AGRO 210 - FIELD CROPS
Production of field crops, their importance, adaptation, varieties and cultural practices are covered in this course.
Prerequisite: AGRO 110 or permission of instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

AGRO 215 - SOIL FERTILITY AND FERTILIZERS
Principles involved in supplying essential elements for growing plants. Soil and tissue analysis, nutrient deficiency symptoms. Factors in manufacture, applications and economics of fertilizers, amendments and organic materials.
Prerequisite: AGRO 110
3 credits (2 lecture hours, 2 laboratory hours), spring semester

AGRO 310 - PASTURE MANAGEMENT AND FORAGES PRODUCTION
Fundamentals of pasture management and forages production for maximum yield, quality, and longevity.
Prerequisite: AGRO 110
3 credits (2 lecture hours, 2 laboratory hours), fall semester

AGRICULTURAL SCIENCE

AGSC 120 - DOMESTIC ANIMAL BEHAVIOR
This course is designed to provide the student with an introduction to, and a general understanding of domestic animal behavior. The evolutionary aspects of behavior, learning theory, normal and abnormal behaviors will be studied. Material will be presented concerning dogs, cats, sheep, goats, hogs, cattle and horses with an emphasis on cattle and horses.
3 credits (3 lecture hours), spring semester

AGSC 132 - INTRODUCTION TO COMPUTER APPLICATIONS IN PRECISION FARMING I
Application of computer software in agricultural business, crop production, and dairy management as it relates to precision farming including: GPS, GIS, fertilizer recommendation, dairy ration software, dairy genetic software, and farm management software.
2 credits, fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

AGSC 135 - COMPUTER APPLICATIONS IN AGRICULTURAL RESEARCH I
Application of computer software in agricultural research including: statistical packages which include ANOVA, Duncan Multiple range test, correlation, etc.
1 credit, spring semester

AGSC 137 - ANALYSIS AND INTERPRETATION OF AGRICULTURAL DATA
This course encompasses an introduction to statistical methods to agricultural students using examples and applications. It focuses on teaching students basic statistical analysis using spreadsheet programs and other pertinent computer tools.
2 credits, spring semester

AGSC 140 - COMPUTER APPLICATIONS IN PRECISION FARMING II
The student will pursue research projects in the area of GPS, GIS and other precision farming-related areas and then make presentations using PowerPoint.
Prerequisite: AGSC 132 & 135 or consent of instructors
1 credit, spring semester

AGSC 145 - COMPUTER APPLICATIONS IN AGRICULTURAL RESEARCH II
The student will pursue projects in the areas of basic and applied research and then make presentations on the project using PowerPoint.
Prerequisite: AGSC 130 & 135 or consent of instructors
1 credit, fall semester

AGSC 246 - INTERNSHIP IN AGRICULTURAL SCIENCE
This internship involves students working in an approved job in agriculture. A journal, written report, and employer and faculty evaluation are required upon completion of the internship.
4 credits (12 weeks, 480 hours minimum), fall semester

AGSC 350 - ANIMAL GENETICS
This course provides an application of the principles of genetic selection for the improvement of dairy cattle and horses. The basic concepts of inheritance from both mathematical and biological perspectives are emphasized. Progeny and performance testing programs, pedigree analysis, mating systems and their application to selection and production of genetically superior animals are discussed.
Prerequisites: DAS 100 or ESCI 305 and DANS 120 or ESCI 110 with a C or better (prerequisite or co-requisite)
3 credits (3 lecture hours), spring semester for equine or fall semester for dairy students, alternate years, even years
AMERICAN SIGN LANGUAGE

AMSL 101 -AMERICAN SIGN LANGUAGE I
American Sign Language may be used to satisfy the SUNY General Education requirement for Foreign Language only by students in programs leading to certification in elementary and secondary education and in programs leading to careers where there is likely to be significant contact with the hearing impaired. This is an introductory course for students in American Sign Language with basic vocabulary, structure, syntax and grammar. Conversational skills will be emphasized from an expressive and receptive perspective, as well as the manual alphabet, numbers, colors and facial grammar. Exposure to Deaf Culture and culturally appropriate behaviors will be included in the course.

3 credits (3 lecture hours); fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Foreign Language.

AMSL 102 – AMERICAN SIGN LANGUAGE II
A continuation of AMSL I involves the study of advanced ASL vocabulary, linguistic structures, and Deaf culture. Students will develop advanced levels of receptive and expressive conversational skills.

Prerequisite: AMSL I or permission of instructor
3 credits (3 lecture hours); fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Foreign Language.

ANIMAL SCIENCE

ANSC 100 - ANIMAL SCIENCE AND INDUSTRY - CONCURRENT ENROLLMENT
This is a concurrent enrollment course with designated high schools to acquaint high school students with animal science and industry. It offers an introduction to farm and companion animal production and its affiliated industries with emphasis on the biological nature of animals, infrastructures and economic uniqueness of affiliated industries, animal products and services, and the management of animal enterprises.

3 credits (minimum of 45 lecture hours), spring semester

ANTHROPOLOGY

ANTH 101 -INTRODUCTION TO ANTHROPOLOGY
An introduction to the study of human beings, ranging across the four fields of biological and cultural anthropology, archaeology and linguistics. Focus is placed on human evolution and origins, development of human culture, and description and comparison of differing ways of life around the world. Emphasis on basic anthropological concepts of evolution, culture, kinship, institutions, globalization and socio-historical change.

3 credits, fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Other World Civilization.

Students may not receive credit for both SOCS 122 and ANTH 101

ARCHITECTURAL STUDIES AND DESIGN

ARCH 101 - ARCHITECTURAL GRAPHIC COMMUNICATIONS
This is a drawing course designed to teach the student interested in architecture to recognize and graphically depict forms and textures in the natural and built environment. Instruction will be given in the use of basic pencil, color drawing and rendering techniques; freehand and hardline drafting/drawing; orthographic projections as well as in the principles of pictorial (oblique, axonometric and perspective) drawing. These drawing techniques, methods and principles will aid the student in the development of their drawing skills and in their own rendering style. The course will culminate in the execution and composition of a comprehensive architectural presentation.

Co requisites: MATH 102 (minimum), ARCH 141 or permission of instructor
2 credits* (1 lecture hour, 2 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for the Arts

ARCH 102 - INTRODUCTION TO ARCHITECTURE
This course seeks to examine the questions, “What is an architect?” “What does an architect do?” and “What is architecture?” Addressed will be the development of the architectural education system in the United States, including an introduction to the internship development program, licensure and registration, and professional practice. Particular focus will be given to the wide range of tasks that architects are required to perform. Also studied through the exploration of the social, environmental, behavioral, aesthetic, technological and political influences, will be the place of architects in society and architecture in culture.

Co-requisite: COMP 100 (min.) or permission of instructor
2 credits (2 lecture hours), fall semester
This course counts toward the Liberal Arts and Sciences requirement

ARCH 141 - ARCHITECTURAL DESIGN I
This course is will introduce the study of three dimensional design principles. The content of the course will address the design process, the vocabulary of design, rationale and meaning of design, as well as compositional and organizaional strategies. The student will explore and express solutions to multiple design problems through different architectural media. The semester will culminate in a final project in which students will be expected to demonstrate their understanding of basic design.

Pre-or Co-requisites: ARCH 101, MATH 102 (min.) or permission of instructor
4 credits* (2 lecture hours, 4 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for the Arts

ARCH 142 - ARCHITECTURAL DESIGN II
This course, second in a series of four courses, is the sequential course to Architectural Design I. The principles of three dimensional design explored in Architectural Design I, will be applied to problems and analyses dealing with order and definition through the creation and manifestation of spatial volumes. In working through these problems, students are expected to develop and demonstrate a design logic that accounts for composition, precedent and context. Students will also study the relationship of natural light and architectural volume - space. Anthropomorphism will be probed and constructed in response to the words of Vitruvius: firmness, commodty and delight. Ultimately the studio will conclude with a comprehensive final project.

Prerequisite: ARCH 141
4 credits* (2 lecture hours, 4 laboratory hours,) spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for the Arts
ARCH 151 - ARCHITECTURE: PREHISTORY TO 1800
This survey of architecture is an overview of the history of architecture from pre-history to the nineteenth century. The major architects and cultural forces shaping each era will be given primary focus. In addition, the social, environmental, behavioral, aesthetic, technological and political forces that influence and affect architectural forms, ideas and urban patterns will be studied.
Pre- or Co-requisite: COMP 101 or permission of instructor
3 credits (3 lecture hours), spring semester
This course counts toward the Liberal Arts and Sciences requirement

ARCH 243 - ARCHITECTURAL DESIGN III
This is the sequential course to Architectural Design II. It emphasizes the study of the relationship between facade, plan, and section as two-dimensional constructs, describing three-dimensional reality. This will be explored through a combination of analysis problems, and then through associated design problems. Throughout the semester, each student will develop an architectural portfolio emphasizing their creative design process and documenting work from this course and other courses. The presentation of creative work in this portfolio will be approached as a design problem. The portfolio will be created in a digital format.
Prerequisites: ARCH 142
4 credits* (2 lecture hours, 4 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for the Arts

ARCH 244 - ARCHITECTURAL DESIGN IV
This is a final course in a four-course sequence. A series of architectural projects proposed and developed in response to the natural and built environment of which the principles of design developed in the previous architectural design courses and other courses will be synthesized. With the use of analyses, design presentations and critiques, students will employ a directed approach to the design projects. Students may work in teams and individually to creatively design and present solutions. Projects will vary depending on the progress and approach to architectural design as deemed appropriate by the faculty member.
Prerequisite: ARCH 243
4 credits* (2 lecture hours, 4 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for the Arts

ARCH 252 - ARCHITECTURE: 1800 TO PRESENT
This survey of the western tradition in architecture is an overview of the history of architecture from the nineteenth century through today. The major architects and cultural forces shaping each era will be given primary focus. The social, environmental, behavioral, aesthetic, technological and political forces that influence and affect architectural forms, ideas and urban patterns will be explored through analytical study.
Prerequisite: ARCH 151, COMP 101 or permission of instructor
3 credits (3 lecture hours), spring semester
This course counts toward the Liberal Arts and Sciences requirement

ARCH 271 - ARCHITECTURAL TECHNOLOGY I
An introduction to building construction and materials with an emphasis on the various enclosure systems developed for wood. The student will explore floor, wall and roof assemblies including joists, rafters, studs, windows, doors and advanced pre-engineered products. Students will be expected to design appropriate solutions for specific loading configurations as determined through calculations and material criteria. Building code use and construction document creation will be integrated throughout the course.
Prerequisite: ARCH 101, CAD 181 or permission of instructor
Pre- or Co-requisite: CAD 183
3 credits (1 lecture hour, 4 laboratory hours), fall semester

ARCH 272 - ARCHITECTURAL TECHNOLOGY II
Building upon knowledge developed in ARCH 271, students will investigate various interior and exterior enclosure systems, with an emphasis on materials such as concrete and steel. Students will study the principles of these materials from individual structural characteristics, industry uniqueness, to industry uses. This course will investigate in detail sitecast and precast concrete framing systems, concrete reinforcing and detailing, and steel framing systems and detailing. Also included in this course are site planning (interpolation and grading), traditional and innovative roofing systems, building accessibility and traditional construction drawing documentation – project manuals/specifications.
Prerequisites: ARCH 271, or permission of instructor
3 credits (1 lecture hour, 4 laboratory hours), spring semester

ART

ART 101 - BASIC ART
Students will study visual perception through the use of drawing and painting media, stressing both technical skills and individual expression; and exploring both form and content. Students are assigned projects and critiques that are based on drawings from still life, interiors and the imagination.
2 credits (4 laboratory hours), fall or spring semester

ART 102 - ADVANCED ART
In this course the student will continue to develop competence in drawing and painting techniques with emphasis on developing work in an atmosphere of experimentation and exploration. Short, informal slide presentations on various artists will be given throughout the course. Group and individual problems and critiques will be given.
Prerequisite: ART 101 or permission of instructor
2 credits (4 laboratory hours), fall or spring semester

ART 110 – INTRODUCTION TO THE VISUAL ARTS
This course introduces students to the world of visual arts, including how to look at, interpret, analyze, and understand a variety of art forms, such as drawing, printmaking, painting, sculpture, architecture, design, and the camera arts. We study art from around the world and from the beginning of human civilization as a way of understanding the social, political, and cultural attitudes that influence how art is produced, viewed, and critiqued.
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.

ART 120 - INTRODUCTION TO DRAWING
This course introduces students to drawing as artistic expression and communication, studio work in a variety of drawing media, emphasizing principles of line, shape, value and the fundamentals of perspective.
2 credits* (4 lab/lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.
ART 121 - INTRODUCTION TO PAINTING
An introduction to painting using various techniques and materials. Basic vocabulary of painting skills in value, color and composition with an emphasis on style and expression.
Prerequisite: ART 120 or ART 101
2 credits* (4 lab/lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.

ART 131 INTRODUCTION TO PHOTOGRAPHY
An introduction to photography and the photographic processes, with an emphasis on the fundamentals of lighting, exposure, processing, printing and the composition of photographic prints.
3 credits (2 lecture hours, 2 laboratory hours) fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.

ASTRONOMY

ASTR 101 - SOLAR ASTRONOMY
The study of planetary systems is covered in this course. Topics include the history of understanding the solar system and the celestial sphere, principles of telescope design, the nature of the solar system, sun, terrestrial and Jovian planets, Pluto, the various moons, comets, asteroids, and extra solar planets.
Prerequisite: Math at the level of MAGN 101.
3 credits (2 lecture hours, 2 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

ASTR 110 - STELLAR ASTRONOMY
This course studies stars, galaxies, and cosmology, constellations, the motions of the night sky, earth- and space-based telescopes, the nature of starlight, the classification, structure and evolution of stars and galaxies, distance scales, the large scale structure of the universe, cosmology, and extraterrestrial life.
Prerequisite: Math at the level of MAGN 101.
3 credits (2 lecture hours, 2 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

AUTOMOTIVE TECHNOLOGY

FORD ASSET PROGRAM

ASET 101 - INTRODUCTION TO AUTOMOTIVE SERVICE
This course covers the basic concepts and terms of automotive technology, work place safety, state inspections, pre-delivery, safety and environmental regulations, and use of service information resources. Topics include familiarization with components along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe terms associated with automobiles, identify and use basic tools and shop equipment, and use information sources and conduct safety/emissions and/or PDI inspections.
2 credits (64 hours combined lecture and laboratory), alternate fall semesters

ASET 102 - BRAKING SYSTEMS
This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disk brakes involving hydraulic, vacuum boost, hydra boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive systems.
Prerequisite: ASET 103
3 credits (80 hours combined lecture and laboratory), alternate fall semesters

ASET 103 - BASIC ELECTRICAL SYSTEMS
This course covers basic electrical theory and wiring diagrams, test equipment, and diagnoses/repair/replacement of batteries, starters, alternators and basic electrical accessories. Topics include diagnosis and repair of battery, starting, charging, lighting and basic accessory systems problems. Upon completion, students should be able to diagnose, test, and repair the basic electrical components of a car.
Prerequisite: ASET 101
3 credits, (96 hours combined lecture and laboratory) alternate fall semesters

ASET 121 - ENGINE REPAIR
This course covers the theory, construction, inspection, diagnosis and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis/repair of automotive engines using appropriate tools, equipment, procedures, and service information.
Prerequisite: ASET 102
3 credits (128 hours combined lecture and laboratory), spring semester

ASET 122 - ELECTRICAL AND ELECTRONIC SYSTEMS
This course covers electrical theory and electronic systems, wiring diagrams, test equipment, and diagnosis/repair/replacement of electrical and electronic systems problems including networks and multiplexing. Upon completion, students should be able to use meters, oscilloscopes, NGS, SBTS, and SBDS test equipment, and repair automotive electrical and electronic components and systems.
Prerequisite: ASET 102
4 credits (128 hours combined lecture and laboratory), alternate spring semester

ASET 123 - COOPERATIVE TRAINING I
A supervised field work program with the students’ sponsoring Ford or Lincoln-Mercury dealer under the supervision of an experienced technician that is certified in the specialties area covered during the previous semester. Work experience to take place during break between fall and spring semesters.
Prerequisite: ASET 102
1 credit (2-3 weeks of combined experience), alternate spring semesters

ASET 160 - APPLIED ELECTRICITY AND ELECTRONICS
The student will learn the rules governing basic direct current circuits and passive components, as well as the methods of measuring these properties. Fundamental analysis of basic automotive series and parallel circuits, and measurement with digital meters and oscilloscopes will be covered. Simple controlling elements such as basic relays, diodes and transistors used as switches will be examined. Practical troubleshooting using digital meters and oscilloscopes (voltage drops, current testing, and resistance checks) are covered.
Prerequisite: ASET 103 or permission of instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester
ASET 200 - COOPERATIVE TRAINING II
A supervised fieldwork program with students' sponsoring Ford or Lincoln-Mercury dealer under the supervision of an experienced technician that is certified in the specialties area covered during the previous semester. Work experience to take place during break between spring and fall semesters.
Prerequisite: ASET 121 and 122
4 credits (10-12 weeks of combined experience), summer

ASET 201 - STEERING AND SUSPENSION SYSTEMS
This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair various steering and suspension components, check and adjust various alignment angles, perform NVH diagnosis and balance wheels.
Prerequisite: ASET 122
3 credits (96 hours combined lecture and laboratory), alternate fall semesters

ASET 202 - MANUAL TRANSMISSION AND DRIVE TRAINS
This course covers the operation and diagnosis/repair of manual transmissions/transaxles, clutches, drive shafts, axles, and final drives. Topics include theory of torque, power flow, manual drive train service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair manual drive trains.
Prerequisite: ASET 122
3 credits (80 hours combined lecture and laboratory), alternate fall semesters

ASET 203 - CLIMATE CONTROL
This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis and repair of climate control systems. Topics include diagnosis/repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.
Prerequisite: ASET 122
2 credits (64 hours combined lecture and laboratory), fall semesters

ASET 204 - ENGINE PERFORMANCE
This course covers the principles of fuel delivery/management, exhaust/emission systems, and electronic engine control and procedures for diagnosing and restoring engine performance using appropriate test equipment. Topics include procedures for diagnosis and repair of fuel delivery/management and emission systems using appropriate service information. Upon completion, students should be able to describe, diagnose, and repair engine fuel delivery/management and emission control systems using appropriate service information and diagnostic equipment.
Prerequisite: ASET 121 and 122
4 credits (128 hours of combined lecture and laboratory), spring semesters

ASET 205 - AUTOMATIC TRANSMISSIONS
This course covers operation, diagnosis, service and repair of automatic transmissions/transaxles. Topics include hydraulic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair automatic drive trains.
Prerequisite: ASET 122
4 credits (128 hours combined lecture and laboratory), spring semester

ASET 225 - CO-OPERATIVE TRAINING III
A supervised field work program with students' sponsoring Ford or Lincoln-Mercury dealer under the supervision of an experienced technician who is certified in the specialties area covered during the previous semester. Work experience to take place during break between fall and spring semesters.
Prerequisite: ASET 201, 202 and 203
1 credit (2-3 weeks of combined experience), alternate spring semesters

AUTOMOTIVE TECHNOLOGY TRADITIONAL PROGRAM

AUTO 100 - INTRODUCTION TO AUTO TECH
This course covers the basic fundamentals of automotive chassis. It will include wheels, tires, brakes, steering and suspension alignment.
1 credit (2 lecture hours, 4 laboratory hours), permission of instructor required

AUTO 102 - METALS
Characteristics and properties of metals, metallurgy, fabrication, oxyacetylene and arc welding. TIG and MIG welding and other industrial processes.
3 credits (1 lecture hour, 2 laboratory hours, 1 hour recitation)

AUTO 103 – INTERNAL COMBUSTION ENGINES I - THEORY
Operating principles and nomenclature of internal combustion engines used as automotive power plants. Laboratory emphasis is on technician level analysis and repair of mechanical components.
3 credits (2 lecture hours, 3 laboratory hours)

AUTO 104 - BASIC AUTOMOTIVE ELECTRICAL SYSTEMS
Direct and alternating current circuits, magnetism, inductance, electrochemical action, and semiconductors.Introduction to automotive wiring diagrams, using voltage, amperage, and resistance measurements to troubleshoot opens, shorts, and excess resistance problems in basic DC circuits. Introduction to automotive cranking and charging systems.
3 credits (2 lecture hours, 3 laboratory hours), fall or spring semester

AUTO 105 – CAR AND LIGHT TRUCK DIESEL FUNDAMENTALS
This course explores the operation and service of modern car and light truck diesel engines. Principles and theories are studied by running, testing, dissembling, and reassembling components, systems and engines.
2 credits (2 lecture hours, 2 laboratory hours), spring semester, meets for 10 weeks.

AUTO 109 - CHASSIS ANALYSIS I
Construction, operation and repair of modern chassis components. Including: Brakes (disc, drum, diagonal, quick take-up, and anti-lock); Suspensions (coil, leaf, McPherson, wishbone, and active); Steering systems including: linkage and rack & pinion. Tires, wheels and bearings.
4 credits (3 lecture hours, 3 laboratory hours), fall semester

AUTO 110 - SUMMER WORK EXPERIENCE
Work experience of at least 10 weeks in a transportation/mechanical area between the first and second year. Report will be due before the 10 week of the fall semester. A student may receive credit for this course from prior academic experience given appropriate articulation agreement.
3 credits
AUTO 138 - CAREER AWARENESS
Introduction to the complex and diverse automotive industry. Guest speakers will discuss the many career opportunities as well as the requirements for today’s technicians.
1 credit hour (1 lecture hour). A student may receive credit for this course from prior academic experience given appropriate articulation agreement.

AUTO 155 - INTERMEDIATE AUTOMOTIVE ELECTRICITY & ELECTRONICS
Application of the principles of electricity to the Diagnosis, operation, service, and repair of automotive electrical and electronic systems troubleshooting, battery, starting, Charging, and accessory circuits with multimeters, labscopes, and scan tools is emphasized.
Prerequisite: AUTO 104 or ASET 103 or permission of instructor
3 credit hours (2 lecture hours, 3 laboratory hours), spring semester

AUTO 171 - AUTOMOTIVE DRIVE TRAINS
This course introduces the automotive student to the theory and repair of modern automotive drive trains. Emphasis is given to testing drivetrain system components to determine faults prior to removal from the vehicle. Topics include automatic transmissions, manual Transmissions, four wheel drive systems, all-wheel drive systems and final drive systems. Lecture and laboratory assignments are combined to give the students both theory and hands on experience.
Prerequisites: AUTO 109, AUTO 104 or Instructor Permission
3 credits (2 lecture hours, 3 laboratory hours), fall/spring semester

AUTO 202 - AUTO BODY FUNDAMENTALS
Construction, damage analysis, and repair of the modern automobile. Basic sheet metal repair, refinishing systems, panel adjustments, trim panel removal, plastic repair, and restraint systems.
Prerequisite: AUTO 102
3 credits (2 lecture hours, 1 recitation hour, 3 laboratory hours), spring semester

AUTO 203 - INTERNAL COMBUSTION ENGINES II
Practical experience in automotive engine rebuilding. Application of basic physical and thermodynamic principles in engine design. Laboratory emphasis is on utilization of special equipment involved in the rebuilding process.
Prerequisite: AUTO 103 and permission of instructor
3 credits (2 lecture hours, 3 laboratory hours), spring semester

AUTO 204 - AUTOMOTIVE ELECTRONIC SYSTEMS
Application of the principles of diagnostics to the design, operation, service and repair of today’s sophisticated computerized automotive systems. Troubleshooting problems with the ignition system, sensors, and networks with multimeters, labscopes, and scan tools is emphasized
Prerequisites: AUTO 103, AUTO 104, or permission of instructor.
Co-requisite: AUTO 205
3 credits (2 lecture hours, 3 laboratory hours), fall semester

AUTO 205 - ELECTRONIC FUEL SYSTEMS
Principles of service and repair of automotive fuel systems including TBI, PFI, SFI, EFI and pump circuits, together with the relationship of design as it affects service and repair.
Prerequisites: AUTO 103, 104, and permission of instructor.
Co-requisite: AUTO 204
3 credits (2 lecture hours, 3 laboratory hours), fall semester

AUTO 209 - CHASSIS ANALYSIS II
Designed to give the student detailed instruction in the diagnosis and repair of modern suspension, steering and break systems and in the troubleshooting and repair of 4-wheel alignment systems. On car brake lathe and road force balance machines included.
Prerequisites: AUTO 109
Co-requisite: AUTO 102, AUTO 104
4 credits (2 lecture hours, 1 recitation hour, 3 laboratory hours), spring semester

AUTO 255 - DRIVABILITY AND PERFORMANCE PROBLEMS
Methods and procedures used in the diagnosis and correction of performance issues, using advanced test equipment. Laboratory practice to ensure a degree of occupational proficiency.
Prerequisites: A grade of C or better in AUTO 204, AUTO 205, and permission of the instructor.
Pre- or Co-requisite AUTO 155
5 credits

AUTO 259 AUTO BODY NON-STRUCTURAL REPAIR AND REFINISHING
Designed to give the student extensive hands-on experience necessary to develop the skills required to repair collision damage to the modern unibody vehicle. Includes identification and analysis of damage as well as advanced repair and refinishing techniques.
Prerequisite: Must pass AUTO 202 with a grade of C or better and permission of instructor.
5 credits (2 lecture hours, 7 laboratory hours), spring semester

AUTO 260 - AUTO AIR CONDITIONING AND REFRIGERATION RECOVERY
Introduction to the theory, operation, service, repair and diagnosis of factory installed air conditioning.
1 credit (1 lecture hour, 2 laboratory hours), 8 weeks, fall semester

AUTO 261 - AUTOMOTIVE AIR CONDITIONING AND HEATING
Basic principles, nomenclature and operation as applied to the automotive air-conditioning and heating units. Labs prepare students for required certification in the handling of refrigerant as well as repairs.
3 credit hours (2 lecture hours, 3 laboratory hours), spring semester

AUTO 269 – ADVANCED AUTO BODY REFINISHING AND STRUCTURAL MEASUREMENT
This course covers techniques required to properly repair multi-coat paint finishes, including spot and panel painting with HVLP spray equipment, fundamentals of color perception, color, light sources and tinting. It will also cover structural and non-structural analysis and collision repair of Unibody vehicles.
Prerequisite: Must pass AUTO 259 with a grade of C or better and permission of instructor.
5 credits (2 lecture hours, 8 laboratory hours), fall semester

AUTO 279 – AUTO BODY STRUCTURAL REPAIR
This course covers techniques required to properly analyze and repair Unibody and full frame collision damage. It will also include extensive hands-on experience for increased employability in many segments of the collision industry.
Prerequisite: Must pass AUTO 269 with a C or better and permission of the instructor.
6 credits (2 lecture hours, 12 laboratory hours) spring semester
AUTO 309 - ADVANCED AUTOMOTIVE CHASSIS
This course contains information about construction and geometry of modern automobile suspension systems. Topics include introduction to metallurgy, suspension design, suspension angles and future trends. The laboratory requirements include a group project, related to automotive vehicle steering and suspension. A laboratory practicum will be required in which the student will assist instructors in developing a training aid and presentation for class.
Prerequisite: A.A.S in Automotive Technology or successful completion of the first 2 years of the BT program with a minimum of a “C” in AUTO 109 & 209 or equivalent.
4 credits (2 lecture hours, 3 laboratory hours & laboratory practicum).

AUTO 355 - ADVANCED AUTOMOTIVE DIAGNOSTICS
This course focuses on automotive troubleshooting techniques and tools. Emphasis will be placed on diagnosing engine performance conditions related to mechanical, fuel injection, ignition, and emissions systems. Diagnosis of other computer controlled and networked automotive systems will also be covered. It includes theory of system operation with an emphasis on comprehension and systematic troubleshooting. Included is an emphasis on hands-on practice and familiarity with factory and aftermarket scan tools, and automotive labscopes.
Prerequisite: A.A.S. in Automotive Technology or successful completion of first 2 years of BT
3 credits (2 lecture hours, 3 laboratory hours)

AUTO 359 - COLLISION & BUSINESS MANAGEMENT
This course covers the operation and management of modern auto body collision repair facilities. Topics covered include: safety and environmental issues, terminology, duties of collision shop personnel, cost control, tools and equipment, collision estimating and shop layout. It also covers interaction with insurance companies, auto body products suppliers, new and recycled parts suppliers and mobile specialty repair businesses.
Prerequisite: A.A.S. in automotive or permission of instructor
3 credits (2 lecture hours, 3 laboratory or field trip hours)

AUTO 360 - AUTOMOTIVE SHOP MANAGEMENT AND SUPERVISION
Practicum in shop management. Practical experiences in demonstrating leadership skills, problem-solving skills, motivational skills, goal setting, time management, counseling, implementing policy and procedures, conducting meetings, implementing codes of conduct, enhancing professional ethics, interfacing with customers, conflict resolution and dealing with personnel issues in the workplace, such as sensitivity skills, harassment issues and stress management.
Prerequisite: BSAD 116
3 credits (2 lecture hours, 3 laboratory hours)

AUTO 371 - ADVANCED POWERTRAIN MANAGEMENT
This course describes performance and design features, as well as diagnosis and repair procedures for the modern automatic transmissions. Emphasis is given to understanding electrical/electronic controls and the proper use of electrical/electronic test equipment. Disassembly and reassembly of the transmission enables the students to understand and visualize the mechanical and hydraulic components.
Prerequisite: A.A.S. in Automotive Technology/successful completion of first 2 years of BT
3 credits (2 lecture hours, 3 laboratory hours)

AUTO 380 - AUTOMOTIVE PARTS INVENTORY MANAGEMENT AND MERCHANDISING
Fundamentals of computer-based parts inventory and P.O.S. systems. Inventory management, core procedures, warranty claims, remanufactured vs. rebuilt parts, team concept of parts and repair departments, customer assistance, marketing strategy, sales techniques, identifying customer base, merchandising, and forecasting business with analysis of profit and loss statements.
Prerequisite: BSAD 112 and AUTO 360
3 credits (2 lecture hours, 3 laboratory hours)

AUTO 400 - AUTOMOTIVE FLEET MAINTENANCE
An overview of all automotive repair tasks will be reviewed. Analysis of pertinent tasks for fleet maintenance will emerge and be coupled with labor and price guides time on task evaluations, absolute necessity, intervals of inspection, safety concerns, failure records, component life cycles and environmental issues. Further analysis will reveal decision-making process for in-house repairs or out-sourcing component failure records and vendor responsibilities will be discussed along with fleet discount structure and avenues of saving time, inventory and other overhead to ultimately make the organization efficient. Record-keeping systems and the development of a fleet maintenance log will be implemented. Written report will include a fleet maintenance guide.
Prerequisite AUTO 360
3 credits (2 lecture hours, 3 laboratory hours)

AUTO 420 - AUTOMOTIVE INDUSTRY INTERNSHIP ORIENTATION
This course is designed to orient the student for successful completion of their internship. The orientation process will assist the student in developing a realistic time-line, to prepare him or her for meeting the responsibilities of an intern and exposing him or her to the various forms and reports related to the internship.
Prerequisite AUTO 360
1 credit

AUTO 421 - AUTOMOTIVE INDUSTRY INTERNSHIP
This course is based upon work experience acquired at a pre-approved manufacturer, dealer, distributor, repair facility, or other location with permission in Internship Program Coordinator. Orientation sessions must be competed the semester prior to the internship. The work experience must have employer and program coordinator approval and will include a problem-centered project planned in joint agreement with the employer, student and coordinator and be presented as a written term paper.
Prerequisites: Successful completion of required courses, permission of Internship Program Coordinator, completion of orientation sessions (AUTO 420)
12 credits (1 lecture hour, 15-week internship)

BIOLOGICAL SCIENCE

BIOL 101 - INTRODUCTION TO BIOLOGY
This course provides a basic introduction to biological principals for non-biology related majors. Lecture topics in this course include: introduction to science, the chemistry of life, cellular organization of life, heredity and natural selection, biological diversity, and population and community ecology. The lab covers a variety of techniques and tools related to the investigation of selected topics in biology.
4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science
**BIOL 102 - BOTANY, FORM AND FUNCTION OF SEED PLANTS**
Structure and function of higher vascular plants, with emphasis on cell structure, photosynthesis and respiration, anatomy, physiology, reproduction and Mendelian genetics.

*3 credits (2 lecture hours, 2 laboratory hours), fall or spring semester*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 103 - BOTANY: PLANT DIVERSITY**
An evolutionary survey of the plant kingdom with emphasis on the structure, life cycles, and significance of non-vascular and lower vascular plants.

*Prerequisite: BIOL/ENSC 102 or permission of instructor.*
*3 credits (2 lecture hours, 2 laboratory hours), spring semester*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 105 - HUMAN BIOLOGY**
A course for non-majors that focuses on human structure, function, diseases and current health topics. Emphasis is on each of the organ systems. Included are lecture discussions on cancer, heredity, genetic engineering, cloning and evolution.

*3 credits (3 lecture hours), fall or spring semester*
Students planning to transfer BIOL 105 as a science course or continue to additional biology courses including BIOL 120, enroll in the lab BIOL 105L.
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 105L - HUMAN BIOLOGY LABORATORY (OPTIONAL)**
An optional laboratory course that provides experiences to emphasize the biological concepts behind the lecture topics of Human Biology.

*Prerequisite or Co-requisite, BIOL 105.*
*1 credit, 2 laboratory hours, fall or spring semester*
This course counts towards the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 107 - TOPICS IN CONTEMPORARY BIOLOGY**
This course covers selected topics in Biology currently in public focus. The understanding and use of the scientific method is stressed. Students will apply their understanding of the scientific method while examining topics such as biotechnology, stem cell research, and the human genome project and cancer biology. This course is primarily for non-science majors. (Actual topics change each semester).

*3 credits (3 lecture hours), fall or spring semester*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 120 - GENERAL BIOLOGY I**
This course provides the first half of a typical two-semester sequence for biology-related majors. Topics in this part of the sequence are: organization of life, chemistry of living things (including cellular respiration and photosynthesis), cell biology and biological membranes, heredity and reproduction (including meiosis, meiosis and Mendelian genetics), molecular genetics, evolution and ecology. The lab covers a variety of procedures and microscopic studies applied to selected animals and plants. A variety of laboratory techniques and procedures relative to the study of selected plants, animals and microbes is also covered.

*Prerequisite: Placement in BIOL 120 or higher, or successful completion of BIOL 105 with at least a C-.*
*4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 121 - GENERAL BIOLOGY II**
This course is a continuation of BIOL 120, and assumes mastery of the material covered in it. This second half of the sequence covers: taxonomy of plants and animals, viruses and bacteria, fungi, seedless and seed plants (including plant structure and physiology), animal diversity (an overview of animal phyla), and animal structure and function (including all the life functions and body systems with emphasis on the human.

*Prerequisites: BIOL 120 with a C- or better*  
*4 credits (3 lecture hours, 2 laboratory hours), spring semester*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 135 - MYOLOGY I**
The study of the muscles of the body; specifically the muscles of the head, neck and trunk with superficial and postural muscles emphasized. The actions of major muscle groups, origin and insertion of each muscle as well as the physical location via palpation. Nerve innervation will be discussed. Students will practice muscle palpation and muscle testing.

*Pre- or Co-requisite: BIOL 150*
*3 credits (2 lecture hours, 3 laboratory hours), fall semester*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 136 - MYOLOGY II**
This course continues the study of the muscular system with emphasis on the muscle groups and muscles of the extremities. Discussion will focus on the origins, insertion sites and functions of the muscles. Muscle testing will also be included.

*Pre-requisites: BIOL 135 with a grade of C or better*
*Pre- or Co-requisites: BIOL 151*
*3 credits (2 lecture hours, 3 laboratory hours), spring semester*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 137 - NEUROLOGY**
A detailed study of the nervous system including nerve origin, insertion and function. Topics include the anatomy and physiology of the nervous system including the brain and cranial nerves, spinal cord, nerves and plexuses, and the sensory, motor and autonomic nervous system. The laboratory component is composed of hands-on exercises including computer simulation, physiological testing, and nerve tracing as well as identification of anatomical structures on specimens, models, and microscopic slides.

*Pre-requisites: BIOL 151 with a C- or better*
*4 credits (3 lecture hours; 2 laboratory hours), fall semester*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 150 - HUMAN ANATOMY AND PHYSIOLOGY I**
Structure and function of the human body (a systems view). Covers: cells, tissues, skeletal, muscular and nervous systems. The lab includes practical experience with lecture topics including animal dissection.

*Prerequisite: placement in BIOL 120 or higher or completion of BIOL 105 with at least a C-.*  
*4 credits (3 lecture hours, 2 laboratory hours), fall and spring semesters*
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

**BIOL 151 - HUMAN ANATOMY AND PHYSIOLOGY II**
Structure and function of the human body (a systems view). Covers: endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems. The lab includes practical experience with lecture
topics and dissection of animals.

Prerequisite: BIOL 150 with a C- or better,
4 credits (3 lecture hours, 2 laboratory hours), fall and spring semesters

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

BIOL 230 - HUMAN GENETICS

Introduction to the study of heredity and developmental genetics of the human organism. History, problem-solving and statistical methods will be studied as well as contemporary social and ethical problems.

Prerequisites: BIOL 120, or BIOL 150 with a minimum grade of C- 3 credits (3 lecture hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

BIOL 250, 251, 252 - BIOLOGY DEPARTMENT INTERNSHIPS I, II, III

A supervised internship to be undertaken in the summer or between semesters by students majoring in biology, medical laboratory technology, sports nutrition and fitness management or health-related transfer programs. Preparation for the internship will commence in the semester prior to the actual internship. A written and oral report of the internship will be presented. (Students who have completed Allied Health Partnership programs, New Visions, or similar academic internships may use their portfolios to satisfy the requirements of BIOL 250, 251, 252).

Prerequisite: Full-time enrollment in a Biology/Chemistry Department program. Satisfactory completion of at least the first semester of course work in the major: a GPA of at least 2.5 and no less than a C in all courses required in the student’s program.
1 credit per course number. The number of courses to be determined by the supervising Biology Department faculty member. Fall, spring or summer

BIOL 260 - PRINCIPLES OF ZOOLOGY

This course offers a basic introduction to the animal kingdom, including specific studies pertaining to terrestrial and aquatic invertebrates and vertebrates. Emphasis on zoological organization, identification, structure and life histories.

Prerequisite: Successful completion of BIOL 120 or an animal life science course, from the School of Agriculture, with at least a C- or better, Environmental & Natural Resource Conservation and Natural Resources Conservation students by permission of instructor.
4 credits (2 traditional lecture hours plus 1 lecture hour with a 2-hour laboratory)

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

BIOL 285 - GENERAL MICROBIOLOGY

The biology of microscopic organisms including bacteria, fungi, protozoa, algae, and viruses. An introduction to basic principles of microbiology, with an emphasis on morphology, classification, cultivation, growth, physical, and chemical controlling agents, antibiotics, host-parasite interactions, and the benefits of microorganisms including genetic engineering applications. The lab includes proper technique in observation, identification of micros, and reactions under various physical and chemical conditions.

Prerequisite: Placement in BIOL 120 or higher or one semester of a college-level biology course (ex. BIOL 105 with at least a C-).
4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

BIOL 300 - BIOLOGY OF NORMAL AND NEOPLASTIC CELLS

The biology of normal and tumor cells will be examined using current data from population, macroscopic, microscopic, and molecular perspectives. Cell biology topics include cell chemistry, basic genetic mechanisms, internal organization and physiology of the cell, and cell-cell interaction. The cancer biology portion of the course will examine these topics as they occur in neoplastic cells, along with epidemiology, heredity, causation, diagnosis, treatment, and prevention.

Pre-requisite: Completion of college biology course with lab, DANS 120, or ESCI 110 with grade of C or better.
3 credits (3 lecture hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

BIOL 301 – PATHOPHYSIOLOGY

This course is designed to increase the student’s understanding of human diseases caused by alteration of physiologic processes. Emphasis is on advanced pathophysiologic mechanisms and manifestations of disease across the lifespan including genetic and cultural variations.

Prerequisites: C- or better in BIOL 151 or ESCI 430 and BIOL 235 3 credits (lecture hours)

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

BIOL 302 - EPIDEMIOLOGY

The purpose of this course is to introduce the student to key concepts and methods of descriptive and analytical epidemiology. The utilization of epidemiology by the health profession in culturally diverse populations is reviewed. Disease occurrences and patterns of disease entities including their progression will be examined. Application of epidemiological information will be stressed as well as its relationship to health promotion and disease prevention. Students will utilize critical thinking skills to correlate cause, frequency and distribution of disease processes to infection control, health planning and health policy intervention. Case findings surveillance and screening by health professionals is discussed. Assessing the validity and reliability of health care literature and research studies and its application to epidemiology is also covered.

Prerequisites: C- or better in BIOL 235 and MATH 141, MATH 123, BSAD 221, or other statistics 3 credits (3 lecture hours) fall semester
3 credits (3 lecture hours) fall semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

BIOL 405 - BASIC IMMUNOLOGY

This course is an introduction to the field of immunology for both majors and non-majors. Students will gain an understanding of how the human immune system guards against disease. Included are lecture/discussions on the components of the immune system, how these components interact, and the end results of these interactions. Relevant clinical topics, such as allergy, autoimmune disease, immunodeficiency diseases (including AIDS), organ transplantation, and cancer will also be discussed.

Prerequisites: C- grade or better in the lecture and lab of a college-level biology course with a lab.
3 credits, fall semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

BUSINESS ADMINISTRATION

BSAD 100 - BUSINESS IN THE 21ST CENTURY

This course provides a broad introduction to the essentials of American business for students who have little familiarity with business or who may be
considering a career in business. The course will explore broad areas of business such as economics, entrepreneurship, forms of business organization, production and operations management, marketing, money and banking, financial management, securities markets, insurance, human resources management, international business, and career opportunities in each field.

3 credits, (3 lecture hours), fall or spring semester

BSAD 102 - MATHEMATICS OF BUSINESS
This course incorporates the development of arithmetical tools in the mechanics of computation and the fundamentals of problem solving. Emphasis is on the solving common business problems. Topics include: business checking accounts, credit card processing, cash and trade discounts, principles of markup markup and markdown, payroll, simple and discount interest notes, mortgages, property taxes, consumer loans and insurance.

3 credits (3 lecture hours), fall or spring semester

BSAD 104 - ORGANIZATIONAL BEHAVIOR
Introduction to organizational behavior and human relations with emphasis on developing skills in dealing with human behavior, particularly as it exists in business organizations. Motivation, leadership, communications, group behavior, organizational change, personality, negotiation and conflict management are topics covered in this course.

3 credits (3 lecture hours)

BSAD 107 - LEGAL & REGULATORY ASPECTS OF GAMING
The course examines the legal aspects of operating a casino with particular attention to liability, personal and property liability, labor laws, crimes, torts, evictions and negligence. Also an examination of the laws and regulations particular to the gaming industry are explored with specific emphasis on the history and development of regulations in the casino industry as well as requirements for gaming licenses.

3 credits, fall semester

BSAD 108 - BUSINESS LAW I
This course incorporates the fundamental concepts of the law of business and commerce important to business. Contracts, agency, and negotiable instruments with emphasis on the Uniform Commercial Code become part of the course. An introduction to legal reasoning and the legal approach to business problems play an important role.

3 credits (3 lecture hours), fall or spring semester

BSAD 109 - PERSONAL FINANCE
This course covers the basic concepts relating to lifetime financial planning including choosing a career, setting financial goals, measuring financial performance, budgeting, reducing taxes, evaluating savings programs, acquiring and using credit, evaluating housing options, understanding insurance needs, and examining various types of investment opportunities including stocks, bonds, mutual funds, and estate planning.

3 credits (3 lecture hours), fall semester

BSAD 112 - MARKETING
This course introduces students to the marketing of goods and services in a dynamic business environment. This course is designed to familiarize students with most of the activities and strategies employed by marketers. Emphasis is placed on small business and the focus is directed to both business and non-business situations. The course will examine product development, pricing, distribution, promotion, consumer behavior, sales retailing and wholesaling, marketing research, and ethics and other related topics. Emphasis is placed on small business and the focus is directed to both business and non-business situations.

3 credits (3 lecture hours), fall or spring semester

BSAD 116 - BUSINESS ORGANIZATION AND MANAGEMENT
This course covers the introduction to concepts of management, development of management thought, and management environments. Special emphasis is placed on the functions of managers including planning and decision making, organizing and staffing, leading, motivating, communicating, and controlling. Review of social responsibility management ethics, and workplace diversity is covered.

Pre- or Co-requisite COMP 100
Pre-requisites CITA 101 or CITA 110 or OFFT 100 and OFFT 109, or HORT 110 or HORT 111, or permission of instructor.

3 credits (3 lecture hours), fall or spring semester

BSAD 117 - INTRODUCTION TO ENTREPRENEURSHIP
The objective of this course is to establish a basic understanding of the entrepreneurship process. Today's successful entrepreneurs need more than just a good idea. This course will introduce the student to the entrepreneurial mindset and explore entrepreneurial opportunities. The student will be exposed to a brief overview of the various steps involved to bring an idea to reality. The class will incorporate several case studies and guest lecturers to expose the student to real life entrepreneurial situations.

3 credits, 3 lecture hours

BSAD 140 - BUSINESS COMMUNICATIONS
Fundamentals of effective English in written and oral business communications are discussed. Planning and writing effective business letters and memos, letters of application and resume, sales, credit collection, inquiry, order, acknowledgment, claims adjustments, and personnel letters are covered. Gathering and presenting information for reports in written and oral form through research, interviewing, questionnaires, and conferences are presented. The course includes discussion and topics such as understanding the impact of international business teamwork, technology, and multiculturalism on business communications. The course further incorporates networking as well as teamwork opportunities.

Prerequisite: COMP 101 with a C or better

3 credits (3 lecture hours), fall or spring semester

BSAD 203 - BUSINESS LAW II
This course is an in-depth study of business organizations including sole proprietorship, partnerships, limited liability companies and corporations. Basic concepts of property law including personal property (both tangible and intangible), intellectual property (including Internet issues), real property and securities regulation are covered.

3 credits (3 lecture hours), fall or spring semester

BSAD 206 - PROMOTION MANAGEMENT
Principles, concepts and techniques of personal selling, advertising, sales promotion, publicity, and public relations are covered in the course. The course develops the nature and role of promotion, marketing and management of the promotion program. The practice of promotion in a changing environment is an important aspect of this course.

Prerequisites: BSAD 100 or 112 or permission of instructor

3 credits (3 lecture hours), fall or spring semester

BSAD 208 - INTRODUCTION TO TOTAL QUALITY MANAGEMENT
This course introduces students to the philosophy, concepts, and practices of total quality leadership. The course will introduce students to total quality philosophy and concepts, total quality teams, problem-solving and decision-making techniques and tools used in total quality and the total quality focus on customers.

Prerequisites: BSAD 100 or 116 or permission of instructor

3 credits (3 lecture hours)
BSAD 209 - SALESMSHIP
This course covers principles and techniques of personal selling and sales management within a marketing framework. Topics include the selling process, sales ethics, building trust, planning and controlling, persuasive communication negotiation, sales presentations, creating value, earning commitment, overcoming objections and building long-term customer relationships.

3 credits (3 lecture hours), spring semester

BSAD 212 - PRINCIPLES OF FINANCE IN MANAGEMENT
A first course in finance, which develops an understanding of the links between economic theory, management theory, and the practical managing of the financial aspects of any organization are part of the course. Sources of money and credit for businesses, agriculture units, consumers, governments, and charitable institutions are related topics.

Prerequisites: BSAD 100 or permission of instructor
3 credits (3 lecture hours)

BSAD 215 - HUMAN RESOURCE MANAGEMENT
Personnel principles and tools useful to any employee or prospective manager are part of this course. Topics include recruitment, selection, personnel evaluation, personal development, compensation and benefits, the development and influence of labor unions and collective bargaining, public policy and laws in the labor and personnel field, and reconciliation of varying viewpoints. This course uses a case approach.

3 credits (3 lecture hours), fall or spring semester

BSAD 216 - CURRENT PROBLEMS IN HUMAN RESOURCE MANAGEMENT
This course introduces students to contemporary problems in Human Resource Management. Issues include AIDS testing, alcohol abuse, and sexual harassment problems in the workplace. The course is designed to allow students to critically analyze the relevant issues encompassed in contemporary business topics and problems.

3 credits (3 lecture hours)

BSAD 220 - INVESTMENTS
The course will provide the student with an understanding of the nature of the investment process. Students will grasp a fundamental understanding of portfolio management, asset allocation, risk assessment, the securities market and exchanges, equity and debt securities, and margin, futures and option trading. Students will have the opportunity to prepare and present a portfolio of investments.

3 credits (3 lecture hours), spring semester

BSAD 221 - BUSINESS STATISTICS
This course covers the principles and methods of elementary statistics theory and methodology with an understanding of the role of statistics in business and practical affairs. Emphasis is on using statistical methods as an analytical tool. Topics covered include sources of basic data, tabular and graphic presentation, frequency distributions, averages, measures of dispersion, probability, sampling methods, confidence intervals, hypothesis testing, and, simple regression. Focus is on computerized calculations using Excel, and case studies. A background in Excel is recommended strongly.

Prerequisite: CITA 101 or OFFT 110 and MAGN 101, or permission of instructor.
3 credits (3 lecture hours), fall or spring semester

BSAD 224 - MANAGING DIVERSITY IN THE WORKPLACE
This entry-level management course explores the impact that a culturally diverse work force has on a business, industry and global/international environment. The course illustrates the manager's role/responsibility in managing a culturally diverse work force and develops student awareness and understanding of the role of culture, values, social behavior and politics in managing diverse groups of employees.

3 credits (3 lecture hours)

BSAD 225 - INTERNATIONAL BUSINESS
This course examines the importance of: cultural understanding; international economics including current fiscal policy; international trade agreements and their effect on the American economy. The course will pay special attention to both the fiscal and human effects of new alliances and the influence on the future of American agriculture, production, banking, finance, communication, and professional services including the legal and medical profession. The American involvement in the growth of multi-international corporations focusing on American ventures in such areas as production and distribution will be discussed.

3 credits (3 lecture hours)

BSAD 226 - INTERNATIONAL MARKETING
This course emphasizes the importance of social, cultural, economic, political, and geographical concerns that international marketers have to deal with when marketing products in other countries. The effects of national policies, political elections and legal systems are discussed. Understanding the contribution that businesses make to underdeveloped nations and understanding trade restrictions are discussed in this course. Risk assessment of developing businesses in areas is evaluated in this course.

3 credit hours (3 lecture hours)

BSAD 291 - STUDENT INTERN PROGRAM IN BUSINESS
A field-based internship experience provides majors in the School of Business an opportunity to apply their knowledge in business situations. Students will work 135-150 hours at a training site, and their work will be coordinated through a faculty member in the School of Business. Course work includes resume writing, interviewing and job preparation.

3 credits, grade S/U

BSAD 295 - SPECIAL TOPICS IN BUSINESS
This course allows students to participate in a computer application that simulates activities of a real business. This course is recommended for seniors because it is a comprehensive business curriculum course. In addition to the simulation, ethics and job preparation are emphasized.

Prerequisites: ACCT 101, BSAD 112
3 credits (3 lecture hours), fall or spring semester

BSAD 300 - MANAGEMENT COMMUNICATIONS
This course is designed to provide students with the range of communication issues a manager will face in the future. Enduring issues on how to write and speak effectively and devise a successful communications strategy as well as how to make the best use of telecommunications technology will be explored. Through lecture and application, the student will study such areas as handling feedback, managing meetings, communicating change, communicating with diverse populations and external audiences.

Prerequisites: COMP 110 or 312 or BSAD 140, BSAD 116 or Permission of Instructor.
3 credits, fall or spring semester
BSAD 310 - HUMAN RESOURCE MANAGEMENT
A course designed to analyze the problems, strategies and procedures in managing and assessing human resources in contemporary organizations. Special attention is given to problems in assessing abilities and performance, effective recruitment, selection and training, motivational strategies and developing the organization's human resources. Special emphasis is placed on such topics as Equal Employment Opportunity, ethics, organizational development/teamwork, and total quality management.
Prerequisite: BSAD 116
3 credits, fall or spring semester

BSAD 320 - ENTREPRENEURSHIP
This course explores the basic framework of the beginning stages of a start-up business, starting with the development of an idea and going through the various stages of bringing the idea to market. The course will include assessing risk and reviewing various financing activities. Students will incorporate the class work into a workable business plan, which will address areas which need to be included in starting a new business. The course will use case studies to help reinforce the lecture material.
Prerequisite: two of the following, ACCT 101, BSAD 108, BSAD 112 or permission of the instructor
3 credits (lecture hours), fall or spring semester

BSAD 325 - ANALYTIC MARKETING
This course primarily focuses on data manipulation, data analysis and data comparison relative to the marketing mix (price, product, promotion and distribution). Students will learn basic marketing principles, research techniques and strategies for analyzing and interpreting data. Using computers and software applications, students will gather and interpret information, assess marketing conditions and suggest corrective strategies for success. Additionally, students will complete marketing plans supported by appropriate analysis and a final presentation.
Prerequisites: BSAD 116, ECON 100 or 140, or permission of instructor.
3 credits (2 lecture hours, 2 laboratory hours), fall or spring semesters

BSAD 327 - ADVERTISING MANAGEMENT
This course examines advertising with a focus on managerial activities and decision-making in the advertising process. Topics include selection of target markets, establishment of communications objectives, selection of and working relationships with advertising agencies, creative strategy and execution, media selection, appropriations and budgets, and program evaluation procedures. The course will also cover ethical approaches to advertising and other promotional activities.
Prerequisites: BSAD 325, junior level standing or permission of instructor.
3 credits (3 lecture hours), spring semester

BSAD 329 – CONSUMER BEHAVIOR
This course will examine managerial applications of consumer behavior and provide students with the conceptual, quantitative, and analytical skills necessary to develop strategies that directly address consumer behavior and the competitive environment. Topics include factors and trends in consumer behavior, consumer motivation and attitudes, decision-making, consumer relationships and consumer loyalty, and consumer value creation. The course will also cover researching and online consumer behavior.
Prerequisite: BSAD 325 or permission of the instructor.
3 credits (3 lecture hours), fall semester

BSAD 330 – LEADING AND MANAGING THE FAMILY BUSINESS
This course introduces students to family and closely held businesses, the strategic and operating challenges encountered, and the requirements for success. The course explores and analyzes unique issues and challenges relative to the family, the business, and ownership of these businesses. Designed to enhance student awareness of and appreciation for the unique challenges involved in leading and managing the family and closely-held business, topics include the nature, importance, and uniqueness of family businesses, strategy creation, succession and transfer of power, estate planning, financial, and family business governance.
Prerequisite: BSAD 116, or AGBS 240, or permission of the instructor.
3 credits (3 lecture hours)

BSAD 343 – INTRODUCTION TO SPORT MANAGEMENT
The course is designed to provide insight as to contemporary sport, such that the student clearly understands how three basic management structures (clubs, leagues, and tournaments) operate. The student of the Introductory Sport Management course will develop knowledge of the history and nature of sport management, along with how the principles of management, marketing, finance, strategy, ethics, law, and leadership are applied to this discipline.
Prerequisite: BSAD 116, or permission of instructor.
3 Credits (3 lecture hours), fall or spring semester

BSAD 350 - PRINCIPLES OF CORPORATE FINANCE
This course introduces the areas of finance: financial markets, managerial finance, and investments and the importance each has on business transactions and operating performance. Overview of financial markets and financial instruments are important topics. Explanation of basic finance concepts including interest rates, time value of money, valuation, cost of capital, risk and rates of return. Role of finance in decision-making regarding managing daily operations, seeking financing, and providing financing. Incorporates spreadsheet modeling to apply financial concepts and conduct financial analysis.
Prerequisites: ACCT 100 or ACCT 101, CITA 101 or CITA 110, and MATH 102, junior level standing, or permission of instructor.
3 credits (3 lecture hours), fall or spring semester

BSAD 353 – SPORT MARKETING, A STRATEGIC APPROACH
This course will provide an intensive evaluation of marketing techniques and promotional strategy. In addition, the topical coverage will include the marketing mix, new product strategy and services, interactive promotion, event marketing and value-added marketing. The student of sport marketing will acquire extensive understanding as to consumers as spectators and participants. In addition to planning the sports marketing mix (product, price, promotion and place), the student will examine the execution and evaluation of the planning process, as part of an integrated marketing strategy. This course is designed primarily for student in the B. Tech Technology Management program, with the Sports Management Option.
Prerequisites: BSAD 325, BSAD 343 or permission of instructor.
3 credits (3 lecture hours)

BSAD 354 – FINANCIAL MANAGEMENT AND MODELING
This course examines financial modeling, forecasting and financial management through case study method. The students will examine valuation of companies, forecasting financial results to value companies, execute capital budgeting, and understand working capital management. The student will obtain understanding through using the case study methodology and modeling of financial problems in each area under consideration.
Prerequisite: BSAD 350
3 credits (3 lecture hours)
BSAD 375 - MANAGEMENT INFORMATION SYSTEMS
This course introduces students to solving business problems and developing new solutions using spreadsheet and database software. Topics include business information systems, E-business (how businesses use information systems), achieving competitive advantage with information systems, IT infrastructure, and foundations of business intelligence. Further topics include telecommunications (the Internet and wireless technology), securing information systems, achieving operational excellence and customer intimacy, E-commerce (digital markets and digital goods), improving decision making and managing knowledge, building information systems, and ethical and social issues in information systems.
Prerequisites: BSAD 310, BSAD 325, BSAD 350, ACCT 102 or permission of the instructor.
3 credits (3 lecture hours), spring semester

BSAD 380 - INTERNATIONAL BUSINESS
This course introduces students to management within an international context. Embracing culture and globalization as its foundation, discussions include the latest theories and concepts regarding business interactions within a global environment. Topics include the global business environment, national business environments, international trade and investment, international financial systems, and international business management. Course discussions include managerial risk implications arising from different cultural, socio-economic, political, and legal systems; volumes and patterns of international trade and investments; international finance systems including international markets and money systems; and international strategy and organizational structure design. Additional topics include identification of international opportunities and entry mode selection; and international management sub-issues including marketing, production and staffing within a global environment. The course incorporates recent, real-world examples, and integrates technology.
Prerequisites – BSAD 310, BSAD 325, BSAD 350 and junior level standing or permission of the instructor.
3 credits (3 lecture hours), spring semester

BSAD 391 INTERNSHIP IN BUSINESS
The course is designed to initially overview the consulting profession with a subsequent emphasis on organizational consulting issues. The application of theory from the various disciplines to business problems in a consulting environment is emphasized. Definitions of problems, analysis of appropriate variables, and recommendations are provided by students for implementation by management. Students may choose from two options: (1) Business Project: Students are assigned projects for problem analysis and solution or (2) Consultancy: Student develops a project that is of value with a client organization using academic theory. Student will provide a journal and present the written report to management, the faculty advisor, and class colleagues.
Co and Prerequisites: BSAD 350 with a “B” or higher, concurrent enrollment in BSAD 470 or ENTR 417 or permission of the instructor. Successful completion of CIT 405 is highly recommended.
3 credit hours, fall or spring semester

BSAD 400 - PRODUCTION AND OPERATIONS MANAGEMENT
This course examines the strategy and control processes that transform resources into finished goods and services. The primary focus is the use of quantitative techniques for analysis and decision-making, the role of productivity, quality, job design, human resources and other tasks to maximize operational performance. The emphasis is on principles of production system design and operation. Prior exposure to statistics is strongly recommended (MATH 141 or BSAD 221).
Prerequisites: MATH 102 or higher and CIT 101, CIT 110 or OFFT 110, and junior level standing or permission of instructor
3 credits (2 lecture hours, 2 laboratory hours), fall or spring semester

BSAD 408 – RESPONSIBLE BUSINESS OWNERSHIP
This course covers the issues involved in the responsible and ethical conduct of business. It explores responsibility issues from the viewpoint of all the stakeholders in a business. The consequences of irresponsible business behavior and non-compliance with business laws and generally accepted business standards are also explored. Course work will consist of case studies and textual readings in both Ethical and responsible business behavior. Areas of study may include (but not limited to): Business and Social Responsibility, Responsible practices in Human Resources, Ethics in the Marketplace, Financial Responsibility, and The Environmentally Friendly and Compliant Business.
Prerequisite: ACCT 100 or ACCT 101, BSAD 108 or BSAD 116 or FSAD 153, and junior level standing, or permission of the instructor.
3 credit hours (3 lecture hours), fall or spring semester

BSAD 411 - LEADERSHIP IN ORGANIZATIONS
This course reviews and analyzes the major theories and conceptualizations of leadership, giving special attention to how each theoretical approach is applicable to real-world organizations. Major concepts include transformational leadership, team leadership, the psychodynamic approach, women and leadership, and responsible business practices. A discussion regarding the important link between leadership and responsible business behavior is included.
Prerequisites: BSAD 116, junior level standing or permission of instructor
3 credits (3 lecture hours), fall semester.

BSAD 415 - INTERNATIONAL HUMAN RESOURCES MANAGEMENT
This course will provide students with a unique blend of theory and practice to help them analyze the vast array of employment practices, employment structures, and human resources management strategies in a comparative and global context. The purpose of the course is to provide the conceptual and practical tools necessary to address the impact of globalization on the practice of Human Resources. The course is taught from comparative and cross-national perspectives. Students will be asked to take a critical approach to Corporate Social Responsibility and Corporate Citizenship Behavior and the impact these have on business policy.
Prerequisites: Senior standing, BSAD 116 and either BSAD 215 or 310.
3 credits (lecture hours), spring semester

BSAD 417 – INTERNATIONAL FINANCIAL MANAGEMENT
This course examines the international flow of money and financial markets. An important aspect of the course will focus on foreign exchange rates and the management of changes in currency rates. Students will learn about managing transaction, accounting and translation risks. In addition, students will cover trade financing and international cash management.
Prerequisite: BSAD 350
3 credits (3 lecture hours), fall semester

BSAD 418 – SPORT LAW
This course examines legal issues affecting amateur and professional sports. Students will analyze sports cases and materials that cover multiple disciplines, including contracts, torts, constitutional law, antitrust, labor and employment, intellectual property, and criminal law. Students will participate in problem-solving exercises and drafting and negotiation sessions, which explore areas such as player and coaching contracts, investigation of NCSAA rules infractions and possible sanctions against universities. Students will augment their learning through analysis and discussion of up-to-the-minute professional and collegiate sports law developments. This course demonstrates how knowledge of the law creates a competitive advantage and helps build a more efficient and successful...
operation that better serves the needs of its constituents. Learning objectives will be organized around management functions rather than legal theory. This approach will allow students to understand how legal concepts relate to specific managerial functions and will help prepare them to assume a broad range of responsibilities in sport, education, or recreation.

Prerequisites: BSAD 108 and BSAD 343 or by permission of instructor

3 credits (3 lecture hours)

**BSAD 419 – GLOBAL MARKETING**
This course will examine culture and international trade reflecting on the impact of the marketing mix. Students will examine and assess different cultures as well as the political and legal environment of different countries. During the course, the examination of global marketing opportunities and strategies to exploit those opportunities will take place. A review of product and service marketing in an international setting will be emphasized during the course.

Prerequisite: BSAD 325
3 credits (3 lecture hours), fall semester

**BSAD 443 – STRATEGIC SPORTS BUSINESS**
The primary objective of this course is to provide students the opportunity to analyze and integrate business and managerial concepts, tools, techniques, and strategies in sport management. This course is the culmination of student learning in sports management. Students will effort to assess problems and to make decisions facing sport managers and business leaders. Emphasis will focus on the strategic, profit-oriented, and ethical decision-making that are necessary for sport managers to be successful. The course also focuses in detail on a senior thesis that will provide opportunities for in-depth analysis of a specific area in the field. Small group discussions, case studies, and experiential learning will be utilized in order to facilitate learning. This course will augment critical thinking and analysis skills through analytical essays and strategic group projects associated with the industry. This is a writing-intensive course, therefore the development of quality writing skills will be emphasized. Since the internship of Tech Management Students whose focus is in sport management is imminent at this point, this course will also attempt to provide an analysis as to effective management and leadership strategies and the body of knowledge associated with pursuing a career in sport management. Thorough class preparation and participation are critical for student success.

Prerequisites: BSAD 353 and BSAD 418
3 credits (3 lecture hours)

**BSAD 449 - MANAGEMENT POLICY AND ISSUES**
The emphasis is on analyzing the criteria for which ultimate business decisions are made; business strategies in international and domestic operations and the impact of political, economic and legal factors. Focus will be given to actual situation analysis and applying current functional and managerial techniques to a variety of case studies.

Prerequisites: Must complete two of the following courses with a C or better: ACCT 101, BSAD 112, ECON 100 and BSAD 116; and six additional credits of 300/400 level BSAD or RRMT course work; or have permission of instructor.
3 credits (3 lecture hours), spring semester

**BSAD 465 MANAGEMENT CONSULTING**
The course is designed to initially overview the consulting profession with a subsequent emphasis on organizational consulting issues. The application of theory from the various disciplines to business problems in a consulting environment is emphasized. Definitions of problems, analysis of appropriate variables, and recommendations are provided by students for implementation by management. Students may choose from two options: (1) Business Project: Students are assigned projects for problem analysis and solution or (2) Consultancy: Student develops a project that is of value with a client organization using academic theory. Student will provide a journal and present the written report to management, the faculty advisor, and class colleagues.

Co and Prerequisites: BSAD 350 with a “B” or higher, concurrent enrollment in BSAD 470 or ENTR 417 or permission of the instructor.
Successful completion of CITA 405 is highly recommended.
3 credit hours, fall or spring semester

**BSAD 470 - STRATEGIC MANAGEMENT**
This course is a capstone course in the Business Administration (B.B.A) degree program and is required of all seniors. Emphasis is given to the integration of subject matter from other business courses and disciplines in the discussion and analysis of organizational problems. The course attempts to balance theory, research, and practice within a coherent framework. Cases help students integrate and apply concepts and knowledge to actual real-world problems.

Prerequisite: Senior standing, admission into the Bachelor of Business Administration degree program, and Math 153.
3 credits (3 lecture hours), fall or spring semester

**CASINO CAREERS PROFESSIONAL DEVELOPMENT**

**CAS 101 - INTRODUCTION TO THE CASINO INDUSTRY**
This course surveys the history of gaming, casino regulations, organizational structure within gaming, daily casino operations, various types of games, financing and the future development of the industry.
3 credit hours, fall semester

**CAS 102 - INTRODUCTION TO GAMING**
This course is designed to familiarize individuals with the various games offered at typical casinos. It provides a survey of the games offered as well as a rather in-depth investigation of the most common games.
3 credit hours, fall semester

**CAS 103 - CASINO SECURITY**
This course is designed to familiarize individuals with the various types of security measures used in the casino industry to protect the agency from loss and maintain the integrity of the games. In addition to providing information relative to typical cheating methods in each game, the course will also provide information relative to the legal aspects of surveillance.
3 credit hours, fall semester

**CAS 104 - CONTEMPORARY ISSUES IN HUMAN RESOURCE MANAGEMENT FOR THE HOSPITALITY INDUSTRY**
This course surveys current issues, techniques and applications for managing human resources in the hospitality industry. Information strategies, team building, legislation and their impact on achieving service objectives will be studied. Development of a management philosophy appropriate for the service industry shall be the final outcome.
AHMA certification.
3 credits (3 lecture hours), fall semester

**CAS 105 - FOOD AND BEVERAGE IMPLICATIONS FOR CASINO OPERATIONS**
This course focuses on volume food service in multiple casino operations. Various performance, service and financial objectives as well as interface of the food & beverage department with other casino operations shall be presented.
Prerequisite: Acceptance in the CAS program or permission of instructor.
3 credits (2 lecture hours, 2 recitation hours), fall semester
CAS 230 - TECHNOLOGY AND CONTROLS IN GAMING
An overview of internal controls, computer applications technological advances and their impact on customer service strategies in the gaming industry. The applications of technology in various facets of gaming/casino operations.
Prerequisites: CAS 101, 103, 251, and BSAD 107 or permission of instructor.
3 credits (3 lecture hours), fall semester

CAS 240 - HOSPITALITY SALES & MARKETING
Marketing in the service industries and developing strategies/processes necessary for successful gaming and hospitality operations will be the focus of this course. Interventions which facilitate desirable exchanges and the achievement of financial objectives in the hospitality industry will be examined.
Prerequisite: second year standing in the Casino Management Program or permission of instructor
3 credits (3 lecture hours), fall semester

CAS 251 - COOPERATIVE WORK EXPERIENCE
Cooperative Work Experience will be completed in an approved position in the gaming/casino industry (320) hours. Comprehensive written and oral reports are required at the conclusion of the work experience during the fall semester lecture hours.
2 credits (2 lecture hours), fall semester

CAS 280 - LEADERSHIP DEVELOPMENT
STRATEGIES FOR THE HOSPITALITY INDUSTRY
This course focuses on leadership and developing strategies which result in a healthy organizational climate and the achievement of objectives. Competencies of great leaders, ethical leadership and the leader's role in addressing socio/cultural concerns will be studied along with Baldridge Award criteria.
Prerequisites: 2nd year CAS standing, CAS 104, 230, or permission of instructor. AHMA certification.
3 credits (3 lecture hours), spring semester

CAS 290 - PROFESSIONALISM, IMAGE AND PUBLIC RELATIONS FOR GAMING/HOSPITALITY MANAGEMENT
This capstone course is designed to integrate knowledge and skills into the critical thinking process required for corporate level decision making. Case studies and research of an existing corporation will be the basis for studying issues and presenting issues related to Casino Management. Development of a framework and format for effective operation of a service sector business.
Prerequisites: 2nd year CAS standing, CAS 240, 250, 251, or permission of instructor.
3 credits (3 lecture hours), spring semester

CAS 311 - FUNDAMENTALS OF SURVEILLANCE & SECURITY TECHNOLOGIES
This lecture series will survey the security and surveillance controls and emerging technologies of the gaming industry. An overview of the daily operations of a gaming facility will be presented. Attendees will acquire an understanding of the gaming industry, its environment, and the role of technology.
Prerequisites: CAS 103 and BSAD 107 or permission of instructor
1 credit (15-hour lecture series), fall semester Offered as an elective

CHEMISTRY
CHEM 101 - BASIC CHEMISTRY
Primarily for students with no previous chemistry. Fundamentals of chemistry including mathematical concepts, classification and states of matter, chemistry symbols, formulas and equations, Chemical reactions, mole concepts, atomic structure, bonding and solutions.
Prerequisite: Knowledge of basic algebra strongly suggested.
Co-requisite: CHEM 101L
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 101L - LABORATORY FOR BASIC CHEMISTRY
Correct techniques and methods for handling chemicals, equipment, and data. A laboratory experience that allows the first time chemistry student to be comfortable in a laboratory setting.
Co-requisite: CHEM 101
1 credit (2 laboratory hours), fall or spring semester

CHEM 110 - CONTEMPORARY CHEMISTRY
A descriptive, but non-mathematical approach to chemistry for non-science majors based on issues important to society and the chemical sciences. Topics to be discussed include, but are not limited to, atmospheric chemistry, gases, and air pollution; aqueous chemistry, water pollution, and acids and bases; thermodynamics, fossil fuels, and alternative energy sources; organic chemistry, plastics, and recycling; drugs, pharmaceuticals, and consumer chemicals; food, chemistry, and agricultural chemicals; biochemistry and biotechnology. Chemistry concepts are presented as needed to discuss a particular issue. The course is meant to fulfill a student’s science/liberal arts requirement and does not serve as a prerequisite for CHEM 121 or 141. This course is not meant for students who have taken or will take CHEM 101, CHEM 121/122, or CHEM 141/142 as part of their program requirements.
Co-requisite: CHEM 110L
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 110L - LABORATORY FOR CONTEMPORARY CHEMISTRY
Designed as a co-requisite for Contemporary Chemistry for those students also requiring a laboratory experience. Experiments are designed to reflect and amplify the concepts discussed in class as well as to afford students the opportunity to develop laboratory skills, powers of observation, an appreciation of safety concerns and proper disposal methods, and troubleshooting techniques. Experiments include synthesis, analysis, and the investigation of the properties of materials.
Co-requisite: CHEM 110
1 credit (2 laboratory hours), fall or spring semester

CHEM 121 - GENERAL COLLEGE CHEMISTRY I
A course using chemical principles to explain chemical phenomena. Units, significant figures, dimensional analysis, and math and calculators as tools; chemical symbols, atomic structure, bonding, and the periodic table; anions, cations, molecules, acids, bases, formula writing, and nomenclature; classification of chemical reactions, equation writing, solutions, and stoichiometry. Additional topics to be taken from the gaseous state, the liquid state, the solid state, and thermochemistry.
Prerequisite: placement in CHEM 121 or higher and high school algebra, or placement in MATH 102 or higher, or CHEM 101 with a C- or better
Co-requisite: CHEM 121L
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science
CHEM 121L - LABORATORY FOR GENERAL COLLEGE CHEMISTRY I

Exercises to develop competence in basic laboratory techniques: to develop skills in proper methods of collecting, organizing, and handling of data; to develop preparation skills; to develop trouble shooting skills; to develop written communication skills. Experiments designed to reinforce and supplement lecture topics.
Co-requisite: CHEM 121
1 credit (2 laboratory hours), fall or spring semester

CHEM 122 - GENERAL COLLEGE CHEMISTRY II

A continuation of CHEM 121 emphasizing the practical aspects and applications of chemistry in the fields of health, medicine, agriculture, foods, biology, and engineering. Topics covered include chemical equilibrium, chemical kinetics, acid-base equilibrium, oxidation-reduction and electrochemistry, nuclear chemistry, and organic chemistry.
Prerequisite: CHEM 121
Co-requisite: CHEM 122L
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 122L - LABORATORY FOR GENERAL COLLEGE CHEMISTRY II

Reinforcement of lecture topics in the areas of equilibrium, acid-base chemistry, oxidation-reduction reactions, electrochemistry, and organic chemistry. Quantitative exercises in spectrophotometry and analysis. A short scheme of qualitative analysis is also included.
Co-requisite: CHEM 122
1 credit (3 laboratory hours), spring semester

CHEM 141 – CHEMICAL PRINCIPLES I

Prerequisite: Placement into CHEM 121 or CHEM 141; three units of high school mathematics
Corequisite: CHEM 141L
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 141L – LABORATORY FOR CHEMICAL PRINCIPLES I

Use of precision equipment in collecting data. Experiments quantitatively oriented with considerable use of unknowns.
Corequisite: CHEM 141
1 credit (3 laboratory hours), fall semester

CHEM 142 – CHEMICAL PRINCIPLES II

Theoretical approach to reaction kinetics, principles of equilibrium and their applications, oxidation-reduction reactions, thermodynamics, nuclear chemistry, metal ion complexes, and organic chemistry.
Prerequisite: Chem 141 or permission of instructor
Co-requisite: CHEM 142L
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 142L – LABORATORY FOR CHEMICAL PRINCIPLES II

Experimental determination of reaction rates, activation energies, equilibrium, dissociation and solubility product constants. Qualitative scheme of analysis utilizing unknowns. Volumetric and gravimetric determinations with use of some instrumentation.
Corequisite: Chem 142
1 credit (3 laboratory hours)

CHEM 220 - INTRODUCTION TO ORGANIC CHEMISTRY

This is a survey of organic chemistry utilizing functional group and mechanistic approaches. The course will review the basics of chemical bonding, thermodynamics, kinetics, and acid-base chemistry needed to understand the chemistry of organic molecules. The chemical and physical properties of the standard functional groups will be examined. Transformations of functional groups will be explored and the fundamentals of the spectroscopic identification of each functional group will be practiced. The three dimensional structure of molecules will be a point of major focus. Examples of the relevancy of organic chemistry to everyday activities will be stressed, and the relationship of organic molecules to the chemistry of life will be highlighted.
Prerequisite: CHEM 122 and CHEM 122L or CHEM 142 and CHEM 142L
3 credits (3 lecture hours) fall and spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 220L – LABORATORY FOR INTRODUCTION TO ORGANIC CHEMISTRY

This is the laboratory component of Introduction to Organic Chemistry. The basic unit operations necessary for the practice of organic chemistry, such as melting point determination, index of refraction, density, crystallization, thin layer chromatography, column chromatography, gas-liquid chromatography, simple distillation, fractional distillation, extraction, and infrared spectroscopy will be practiced by the student. Students will then apply these operations to the isolation and preparation of a variety of organic functional groups.
Prerequisite: CHEM 122 and CHEM 122L or CHEM 142 and CHEM 142L
Pre- or Co-requisite: CHEM 220
1 credit (3 laboratory hours) fall or spring semester

CHEM 241 - ORGANIC CHEMISTRY I

Bonds and bonding, nomenclature, properties and methods of preparation of the aliphatic compounds as well as conjugation, resonance, stereochemistry and aromaticity. The study of the functional groups correlates with the study of reaction mechanisms, conformational analysis, concepts of resonance, transition state theory, and spectroscopic properties.
Prerequisite: CHEM 122 or CHEM 142 or permission of instructor
Co-requisite: CHEM 241L
3 credits (3 lecture hours), fall semester
This course satisfies SUNY General Education Requirements for “Natural Sciences” as long as students also enroll in the lab.
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 241L - LABORATORY FOR ORGANIC CHEMISTRY I

Separations, purifications, and characterization methods such as distillation, crystallization, chromatography and spectrophotometry. CARRYING OUT ORGANIC REACTIONS, ISOLATING, PURIFYING, AND CHARACTERIZING PRODUCTS. Significant number and types of experiences.
Co-requisite: CHEM 241
1 credit (4 laboratory hours), fall semester
CHEM 242 - ORGANIC CHEMISTRY II
A continuation of CHEM 241. Nucleophilic substitution, aromatic substitution, ethers, aldehydes, ketones, alcohols, carboxylic acids, amines, phenols and special topics. EMPHASIS ON REACTIONS MECHANISMS.
Prerequisite: CHEM 241 and CHEM 241L or permission of instructor
Co-requisite: CHEM 242L.
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 242L - LABORATORY FOR ORGANIC CHEMISTRY II
A continuation of CHEM 241L. Emphasis is on synthesis and application of techniques learned in the first semester.
Co-requisite: CHEM 242
1 credit (4 laboratory hours), spring semester

CHEM 321 - QUANTITATIVE ANALYSIS, INORGANIC
Principles and practices of the quantitative treatment of chemical reactions and equilibria. Major emphasis on volumetric, redox and UV-VIS spectrophotometry in addition to other topics. Problem solving.
Prerequisites: CHEM 142, CHEM 142L or CHEM 122, CHEM 122L
Co-requisite: CHEM 321L
2 credits (2 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 321L - LABORATORY FOR QUANTITATIVE ANALYSIS, INORGANIC
Titrametric methods of analysis and basic experiments in spectrophotometry in addition to other topics. Problem solving.
Co-requisite: CHEM 321
2 credits (4 laboratory hours), fall semester
This course counts towards the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 322 - CHEMICAL INSTRUMENTAL ANALYSIS
Introductory principles and theories underlying modern chemical instrumentation for both inorganic and organic compounds.
Prerequisite: CHEM 321 or permission of instructor
Co-requisite: CHEM 322L
2 credits (2 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

CHEM 322L - LABORATORY FOR CHEMICAL INSTRUMENTAL ANALYSIS
Analytical experiments including potentiometry, gas chromatography, and high pressure liquid-chromatography. Emphasis on spectrophotometry with work in UV, IR, NMR, AA, flame emission and fluorescence.
Co-requisite: CHEM 322
2 credits (4 laboratory hours), spring semester

CHEM 361 - BIOCHEMISTRY
A study of the molecular components of cells, catabolism, and biosynthesis with applications of principles from general and organic chemistry.
Pre- or Co-requisite: CHEM 242
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

COACHING
COAC 101 - COACHING EFFECTIVENESS TRAINING
Introduction to sport science including the fields of sport psychology, sport pedagogy, sport physiology, and sport management. Introduction to the rules and regulations of the New York State Public High School Athletic Association (NYSPHSAA). One of three courses fulfilling New York State requirements for coaching certification.
3 credits (3 lecture hours), fall or spring semester

COAC 102 – THEORY AND TECHNIQUES OF COACHING
This course introduces the student to the basic concepts of coaching in New York State including general instructional strategies, rules and regulation of play, and periodization of training. Topics to include athletic security and safety, organization and management of practices and sport specific training. One of three courses fulfilling New York State requirements for coaching certification.
2 credits (2 lecture hours) fall or spring semester

COAC 103 – HEALTH RELATED ASPECTS OF COACHING
Examines the responses of the body to exercise and the relationship between various physiological systems and athletic performance and improvement. Provides the basic principles of conditioning and nutrition to enable development of safe and effective training and nutritional programs for athletes. Includes basic first-aid and safety as related to athletic participation. One of three courses fulfilling New York State requirements for coaching certification.
3 credits (3 lecture hours) spring semester

COMMUNICATION
COMM 101 - CRITICAL READING
The study of extracting and analyzing information. Content includes recognition of such concepts as analogies, metaphors, organizations and arguments. Issues from popular culture and politics are used as examples of how messages are tailored to influence us. Emphasis on critical thinking skills, the recognition and avoidance of logical fallacies.
3 credits (3 credit hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement.

COMM 111 - INTRODUCTION TO SPEECH
Speech as communication. Composition and delivery of informative and persuasive speeches. Practice in addressing a group in order to develop confidence and proficiency. Lectures and discussion of techniques of organization and presentation ideas.
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Basic Communication.

COMM 121 - THEORIES OF INTERPERSONAL COMMUNICATION
This course examines dyadic communication and the major variables that impact it. Some issues which will be examined are issues of gender, power, conflict, and culture. Nonverbal communication and the impacts of technology will also be included. Students are given opportunities through in-class exercises and writing assignments to learn new theories, apply them and to assess their competence in using them.
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.
COMM 131 - SMALL GROUP DISCUSSION
Introduction to the organization and behavioral characteristics of group interaction in oral decision making. Content includes the analysis of leadership, conflict and consensus, systems theory, and other issues in task-oriented groups. The course will closely examine the impact of communicating over distances on modern small group theory. The impact of technology on modern group theory will also be a covering concept throughout the semester.

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement.

COMM 300 - VISUAL COMMUNICATION
This is a survey course that examines the evolution of visual communication from the invention of the printing press to the development of the World Wide Web. Students will learn the many ways information is produced and consumed in a modern, media-rich society. Typographic, graphic, informational, cartoon, still, moving, television, and computer images are analyzed within a framework of personal, historical, technical, ethical, cultural and critical perspectives.

Prerequisite: C or better in COMP 101 and junior or senior standing, or permission of instructor
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Basic Communication.

COMPOSITION

COMP 100 – INTRODUCTION TO COLLEGE WRITING
Review of essay components and structure. Students will refine their mastery of Standard English by writing narrative essays that demonstrate college-level thesis construction and execution.

Pre-requisite: Placement in COMP 100; or C or better in SKLS 088 or equivalent
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement.

COMP 101 – COMPOSITION AND RESEARCH
College composition and research. Students practice modes of rhetoric by writing expository essays, culminating in an argumentative research paper.

Pre-requisite: Placement in COMP 101 or C or better in COMP 100 or equivalent
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Basic Communication.

COMP 102 – WRITING ABOUT LITERATURE
Introduction to literature. Students learn the elements of literature by studying different genres to develop interpretive and analytical skills

Pre-requisite: C or better in COMP 101.
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

COMP 110 - TECHNICAL COMMUNICATIONS
Designed to introduce students to internal and external workplace communications such as memos, manuals, instruction sheets, and proposals. Research and group projects are required and may include oral presentations and visual aids. Students cannot receive credit for both COMP 110 and COMP 310

Prerequisite: C or better in COMP 101

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Basic Communication.

COMP 220 - WRITING IN THE DISCIPLINES
Designed to strengthen students’ writing and analytical skills by examining the written language used by arts and humanities, social sciences and public affairs, natural sciences and technology, and business professionals. Students will read and evaluate a diverse spectrum of published materials and contrast for fundamental assumptions, concerns, methodology, terminology, and goals. Imitative and analytical papers are required.

Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Basic Communication.

COMP 221 - ADVANCED COMPOSITION AND RESEARCH
Rhetorical argument and critical thinking through writing and research are among the topics that will be covered in this course. Students will learn and develop skills of logic and argument in essays requiring rigorous critical thinking and synthesis of information in an argumentative research paper.

Prerequisite: C or better in COMP 101 and COMP 102 or equivalent, or by permission of the instructor
3 credits (3 lecture hours), spring or fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Basic Communication.

COMP 230 – CREATIVE WRITING: SHORT STORY
This is a creative writing course. Students will study the elements of fiction and practice various techniques. Class will be conducted as a workshop and students will critique each other’s writing. Submission of a portfolio and a completed short story is required by the end of the semester.

Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), spring or fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

COMP 231 – CREATIVE WRITING: POETRY
This is a creative writing course. Students will study the levels of poetry and its various elements. They will practice generating different poem forms to develop the craft of writing poetry. Class will be conducted as a workshop and students will critique each other’s works. They will submit portfolio work throughout the semester.

Prerequisite: “C” or better in COMP 101.
3 credits (3 lecture hours), spring semester, even years.
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

COMP 232 - CREATIVE WRITING
A five-week, one-credit course in creative writing designed to encourage students to develop their creative writing skills and techniques, and to share and discuss their works in a workshop setting.
1 credit (5-week course), offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement.

COMP 240 - EDITING 1
Improve your written work. This course helps you identify and correct errors in grammar, punctuation, capitalization and spelling. Develop the editing skills of careful reading, good judgment and correct use of the English language.

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Basic Communication.
Prerequisite: COMP 101
1 credit, offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement.

COMP 241 - EDITING 2
Improve your written work. This course helps you identify and correct errors in phrases, clauses, sentence structure and sentence punctuation as well as develop variety in your use of the various types of English sentences. This course will help you develop the editing skills of careful reading, good judgment and correct use of sentences.
Prerequisite: COMP 101
1 credit, offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement.

COMP 242 - EDITING 3
Fine-tune your written work. This course applies the editing skills learned in Editing 1 and Editing 2 and examines editing for appropriate use of diction and document format. Edit documents written for different audiences and purposes in areas relevant to a variety of college programs and career fields.
Prerequisites: COMP 240, 241
1 credit, offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement.

COMP 310 - ADVANCED TECHNICAL COMMUNICATIONS
Open only to students in bachelor degree programs, this course requires students to study workplace communication. Students will study and produce common workplace documents such as memos, letters, manuals, instruction sheets, abstracts, proposals, analytical reports, feasibility studies, etc. and will also consider ethical issues surrounding workplace communication. Research projects and the production and use of visual aids are required. Oral presentations and collaborative projects may be required. Students cannot receive credit for both COMP 110 and COMP 310.
Prerequisite: Junior or senior standing and C or better in COMP 101, or by permission of instructor
3 credits (3 lecture hours), fall and spring semesters
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Basic Communication.

COMPUTER-AIDED DESIGN

CAD 181 - INTRODUCTION TO COMPUTER-AIDED DRAFTING
This is an introduction to the fundamental concepts and techniques of two-dimensional drafting using AutoCAD software. Topics include file management, the drawing environment, basic drafting and editing commands, multi-view object representation, text creation, dimensioning, and section views.
1 credit (2 laboratory hours), fall or spring semester

CAD 183 - ARCHITECTURAL COMPUTER-AIDED DRAFTING AND DESIGN
This course will introduce computer-aided drafting and design (CAD) software designed for the utilization in the field of architecture. By Using CAD software, students will first learn to generate professional quality two-dimensional drawings and details. Ultimately by using multiple software packages, students will explore three-dimensional modeling, culminating in the creation of realistic color renderings of buildings and furnishings.
Prerequisite: CAD 181
Pre- or Co-requisite: ARCH 271
2 credits (1 lecture hour, two laboratory hours), fall semester

CAD 184 - COMPUTER-AIDED DRAFTING FOR MECHANICAL DESIGN
A comprehensive introduction to two-dimensional drafting techniques. Topics include file management, drawing environment and coordinate systems, geometry construction and modification, inquiry techniques, text, dimensioning, sectional views, blocking and assembly drawing. Emphasis is placed on accuracy of object geometry construction.
Co-requisite: DRFT 151 or permission of instructor
2 credits (1 lecture hour, 2 lab hours), fall semester

CAD 186 - 3D PARAMETRIC SOLID MODELING
Utilization of 3D parametric modeling software to develop and document mechanical part component and assembly models. Topics include the parametric model concept, dimensional and geometric constraints, feature-based modeling techniques, fits in assembly, and plotting dimensioned multiview drawings. Emphasis is placed on model integrity and documentation.
Prerequisite CAD 184 or permission of instructor
2 credits (1 lecture hour, 2 laboratory hours), spring semester

CAD 288 - ADVANCED SOLID MODELING
Advanced parametric solid modeling concepts and applications. Topics include solid modeling with 3D sketches, surface modeling, functional assembly modeling, simple mold design, sheet metal modeling, fasteners, visualization and animation tools, kinematic motion analysis, static stress analysis, and dimensioning with geometric tolerances. Emphasis is placed on model integrity and documentation.
Prerequisite: CAD 186, DRFT 252
2 credit hours (4 laboratory hours), spring semester

COMPUTER INFORMATION SYSTEMS

CITA 101 – PRINCIPLES OF COMPUTERS AND APPLICATIONS
This course covers the fundamentals of computer systems and is designed to progress students from an introductory skill level to an intermediate (proficient) skill level in word processing, graphics, communications, multimedia, and spreadsheets. It includes an overview of computer hardware components and examines the issues and trends in computing technology. This course moves students from early modeling instruction through project-based exercises similar to situations they may encounter in the workplace and requires students to use their critical thinking skills.
3 credits (3 lecture hours), full and spring semester

CITA 110 - COMPUTER APPLICATIONS I
A survey of equipment and programs used in common computer systems. Topics include internal storage, input/output devices, operating systems, popular applications packages. Current and future trends will be discussed in reference to networks, mainframe and microcomputers. (Note: This course may be challenged with a formal testout process. Contact your advisor or CIT Dept for information)
3 credits (3 lecture hours), fall and spring semester

CITA 112 – INTRODUCTION TO GAME DEVELOPMENT
This course involves game development, game concepts, design components and processes, game worlds, character development, storytelling and narrative, creating the user experience, core mechanics, game balancing, and leveling. The creation of 2D games is used to introduce the concepts of game design. No traditional programming languages are involved and no programming experience is required.
3 credits (2 lecture hours, 2 laboratory hours), spring semester
CITA 120 - COMPUTER CONCEPTS AND OPERATING SYSTEMS
A study of the terminology and concepts associated with computer systems hardware and software. Topics include system hardware components, memory organization and management, operating systems, and troubleshooting fundamentals. Students will install, configure, test and troubleshoot system software to apply the various concepts covered in the course.
Prerequisites: CITA 110 or CITA 101, or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 140 - INTRODUCTION TO PROGRAMMING
Programming in a high level language emphasizing problem-solving and object-oriented programming techniques. Topics include assignment, input/output, selection, loops, scalar and array data structures, string and numeric data and modular development.
Prerequisite: MAGN 101 with C or better or placement in MATH 102 or higher.
3 credits (2 lecture hours, 2 lab hours), fall and spring semester

CITA 150 - DATA MANAGEMENT TECHNIQUES
Advanced object-oriented high-level language programming focusing on internal memory management techniques, programming structures, and programming style. Topics include character string processing, sorting, searching and lists.
Prerequisite: CITA 140 (with C or better) or equivalent, or permission of the instructor.
3 credits (2 lecture hours, 2 lab hours), spring semester

CITA 190 - INTRODUCTION TO LINUX/UNIX OPERATING SYSTEMS AND ADMINISTRATION
Lecture and hands-on instruction in the installation, configuration, and use of the Linux and UNIX operating systems. Hands-on laboratory exercises are used to help students gain experience with practical application of concepts discussed in lecture. Upon successful completion of the course, students will understand basic Linux/UNIX terms and history, installation procedures, Linux/UNIX file systems, the command interface, X Windows, managing processes, common administrative tasks, and Linux/UNIX network services and security...
Prerequisite: CITA 110 or COSC 111 or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 200 - DATA COMMUNICATIONS AND NETWORKING
A study of the terminology, hardware, and software associated with data communications and networking systems. Topics include design principles for human-computer dialogues, selection criteria for communications devices, the technology behind data transmission, techniques and message protocols for line control and error processing, networking components, and network topologies, routing and protocols.
Prerequisite: CITA 120, or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), fall and spring semester

CITA 210 - VISUAL PROGRAMMING AND DEVELOPMENT TOOLS
Lecture and hands-on instruction in visual programming which is commonly defined as the visual expressions including drawings, animation, or icons that are directly manipulated by the user in an interactive way. Object oriented and event driven programming that include forms, controls, properties, and solutions. Solutions to application problems encountered in the typical business organization.
Prerequisite: CITA 140 (with a C or better), or equivalent, or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 212 - FUNDAMENTALS OF GAME DESIGN
The design of games, both for education as well as entertainment, is explored in detail. The course involves programming in a high-level scripting language. Topics include game concepts, design components and processes, game worlds, character development, storytelling and narrative, creating the user experience, core mechanics, game balancing, and leveling. A user-centric approach to design is emphasized.
Prerequisites: CITA 140 or COSC 111, or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 220 - SYSTEMS ANALYSIS
This course explores the philosophy, objectives and organization of the systems analysis activity. Topics include: the justification of the need for information systems to support management decisions; the impact of information systems on individuals and organizations; life cycle and prototyping methodologies; tools and techniques of systems analysis. Emphasis is on transaction processing systems.
Prerequisite: CITA 140, or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 230 - NETWORK TECHNOLOGY
Survey and evaluation of network media, access methods, and topologies. Design, configuration, operation and maintenance questions are explored. Topics will include end user perspective, network operating systems, cabling, hardware protocols, software, design, and administration.
Prerequisite: CITA 200, or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 240 - WEB AND E-COMMERCE DEVELOPMENT
A study of software, clients, and servers used in Web and E-commerce development. Topics include basics of server side programming, client side programming, and database programming. Students will install a web application server and implement a basic application in the Model View Controller (MVC) framework.
Prerequisite: CITA 120 and CITA 140 (with C or better), or permission of the instructor.
3 credits (3 lecture hours), fall semester

CITA 260 - PHOTOGRAPHY AND DIGITAL IMAGING
An introduction to the principles of photography. This course will include the use of the camera, processing and printing. Computer scanning and the manipulation of photographic images with software editing tools will be covered. Design and composition will be stressed. Students will be expected to have access to a good camera, and they must purchase additional materials.
Prerequisite: CITA 110 or CITA 101 (with C or better), or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 270 - FUNDAMENTALS OF NETWORK SECURITY
Survey of fundamental knowledge needed to analyze security risks to systems and implement a workable security policy that protects information assets from potential intrusion, damage, or theft. Students learn to deploy effective countermeasures to thwart potential attacks in a hands-on laboratory environment.
Prerequisite: CITA 200, Math 103 eligibility or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), spring semester
CITA 275 – INTRODUCTION TO COMPUTER CRIME AND DIGITAL FORENSICS
A study of computer crime and digital forensics providing an introduction to foundational terminology and concepts. Areas of study include current trends in computer crime, methodologies for computer crime investigation, techniques for maintaining legal chain-of-custody and documentation, and application of basic digital forensics tools.

Students may not receive credit for both CITA 270 and CITA 275.

Prerequisites: CITA 101 or CITA 110, or permission of instructor
3 credits (2 lecture hours), fall and spring semesters

CITA 280 - TOOLS AND TECHNIQUES FOR APPLICATION DEVELOPMENT
This course includes lecture and hands-on instruction in application and database development. Topics include data modeling; database design; the use of database management software, screen and report generators; query languages; 4GLs. Current topics in application development are also discussed.

Prerequisite: CITA 220, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 300 - COMPUTER SYSTEM SUPPORT AND MAINTENANCE
This is a project-oriented course that focuses on the support and maintenance of PCs. Students will learn how plan, organize, implement and operate a support system and apply this knowledge and skill through actual participation in a help desk environment. Students will also learn how to upgrade, troubleshoot, and maintain PC hardware and software, and how to build and repair PCs in a hands-on environment.

Prerequisite: CITA 120, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 310 - WEB SERVER ADMINISTRATION
A comprehensive survey of all aspects of Web server administration. Students will gain hands-on experience by actually installing and administering their own Web servers in a lab environment. Topics include: server installation and configuration, site planning, supporting dynamic content with CGI’s, server maintenance and site security.

Prerequisite: CITA 110 and CITA 190, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 312 – INTERMEDIATE COMPUTER GAME DESIGN AND APPLICATIONS
The design of intermediate games and simulations, both for education as well as entertainment, will be explored in detail. Involves programming in a high-level scripting language and algorithmic development. Topics include 3D game/simulation concepts, design components and processes, 3D game/simulation worlds, 3D character/vehicle/terrain development, creating the user experience, core mechanics, and multi-tier client/server support. A user-centric approach to design will be emphasized.

Prerequisite: CITA 212 (with C or better), or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 320 - NETWORK ADMINISTRATION
Students will use a variety of network management tools to manage, monitor, support and troubleshoot network operations. Topics will include performance issues, end-user accounts, data security, disaster recovery, supporting applications and documentation.

Prerequisite: CITA 230 or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 325 - NETWORK DEFENSE AND COUNTERMEASURES
Network Defense and Countermeasures provides the student with a solid foundation in network security fundamentals; while with the primary emphasis is on intrusion detection, the course also covers such essential practices as developing a security policy and then implementing that policy by performing Network Address Translation, packet filtering, and installing proxy servers, firewalls, and Virtual Private Networks. Students will learn to design, configure and deploy an IDS and analyze current network security risks.

Prerequisite: CITA 270 and eligibility for Math 103, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 330 - WEB PUBLISHING
This course provides a comprehensive survey of Web publishing technologies and design. Students create a professional quality Web site and publish projects to a hosting site. Topics include HTML5, CSS3, database driven content, and responsive web. Design considerations include Web 2.0 design, simplicity, usability, hierarchy, navigation, and visual message.

Prerequisite: CITA 210 or CITA 240, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 335 - INTERNET TECHNOLOGIES FOR ELECTRONIC DEPLOYMENT
This course provides instruction on how Internet technologies provide an information-sharing architecture for electronic commerce (EC). Focusing on the architectural level, this course provides students with an understanding of how technologies enable business processes rather than how the technologies work. Strategy and management issues are examined in the context of important EC market segments. Case studies illustrate the skills students need to become managers of EC. An examination of commercial software package demonstrates how a team of managers, technologists, designers and others is required for commercial implementation of an EC strategy.

Prerequisite: BSAD 116 and CITA 125 or equivalent, and at least second-year status, or permission of the instructor.
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 340 - DATABASE CONCEPTS
The course is a study of the theory, terminology, languages, and software associated with database systems. Topics include data organization and structure, relational data-bases, data access methods, and database languages. Students will plan, analyze, design, develop, and test database systems. Current topics in database design and development are also discussed.

Prerequisites: CITA 210, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 350 - OBJECT-ORIENTED SYSTEMS
A study of object-oriented systems, including systems analysis and design and programming techniques. One or more graphical user interface object-oriented languages are used to build business application prototypes.

Prerequisite: CITA 210 or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 360 - OPERATING SYSTEMS AND SOFTWARE DEPLOYMENT
This is a project oriented course which requires the installation and use of software found in business and industry. Students will gain experience implementing and deploying a variety of industry-wide software products including, but not limited to, operating systems (MS Windows, Macintosh, Linux, etc.), mail systems, backup, WSUS, office productivity suites, and virus protection software.

Prerequisite: CITA 200, CITA 190 recommended, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester
CITA 370 - NETWORK DESIGN CONCEPTS
This is a laboratory-oriented course in which students will design and implement network systems utilizing the various topologies, media, protocols and network hardware, such as bridges, switches, hubs, and routers.
Prerequisite: CITA 230 or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 375 - INTERNET AND INTRANET FIREWALLS
Firewalls are the primary tools used to prevent unauthorized access to network resources. This course focuses on protecting the network using various firewall designs. Students will gain extensive hands-on experience installing and configuring firewalls. Students will learn how to allow access to key services while maintaining information security.
Prerequisite: CITA 325 and Math 103 eligibility or permission of the instructor;
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 380 - DYNAMIC GRAPHICS AND ANIMATION
This is a survey of the use of dynamic graphics in user interfaces and animation in the simulation and visualization of information. Tools and techniques for the production of computer graphics and animation will be introduced and student projects will be required.
Prerequisite: CITA 210 or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 385 – USER INTERFACE DESIGN
Design, evaluation, and prototyping of user interfaces for a variety of computing devices will be covered. This course focuses on user-centered design for interfaces that promote usability, interactivity, and accessibility. A range of interface types will be considered to include those for desktop applications, Web applications, mobile devices, turnkey systems, and others as technology continues to advance. Design and prototyping projects will be included. Evaluation techniques will be applied to existing interfaces and those created by students as part of this course.
Prerequisites: CITA 210, or permission of the instructor
3 credits (3 lecture hours), fall semester

CITA 395 - INTERNSHIP ORIENTATION SEMINAR
This course will be taken in the semester prior to the student’s internship experience. Topics include the role of the internship in the student’s professional development, formulating personal and professional goals, the current employment outlook in the Information Technology field, employer expectations of an intern, formulating a job search strategy, the role of networking through the use of personal contacts and referrals, interviewing skills, the work environment in large, medium and small organizations. The documents and methods that will be used to evaluate the student during the internship will be clearly defined.
Prerequisite: At least junior status, or permission of the instructor
1 credit (1 lecture hour), 15 weeks, fall and spring semester

CITA 400 - QUANTITATIVE APPROACHES TO MANAGEMENT
A study of the decision-making process and how quantitative methods are used to find solutions to business problems. Computer software tools will be used to analyze and process data. Opportunities, problems and decisions that confront managers are analyzed and solutions are developed. Topics covered include, but are not limited to: cost-volume-profit analysis, forecasting, decision theory, linear programming, probability concepts and applications, inventory control, queuing theory, and game theory.
Prerequisites: BSAD 221 or MATH 141, or permission of the instructor
3 credits (3 lecture hours), spring semester

CITA 405 - PROJECT MANAGEMENT
This course provides an introduction to project management. Students learn project management concepts and how to use appropriate tools and software to manage various types of projects from start to finish. Students are challenged with the wide range of issues professional project managers are required to master: planning, prioritizing, scheduling, budgeting, negotiation, organizing, controlling cost, and handling change. Project management applies to a wide spectrum of real-world projects both within and outside the technical sciences. This course emphasizes learning through lecture, homework, student participation and presentations. Class projects give students hands-on experience applying project management skills and use of software tools.
Prerequisites: CITA 110 or CITA 101 and BSAD 300 or permission of instructor
3 credits (2 lecture hours, 2 laboratory hours), fall and spring semester

CITA 410 - MULTIMEDIA COMPUTING
This course is a study of the simultaneous control of media elements including graphic, hypertext, digital audio, CD audio, MIDI, digital video and animation. Students will learn and apply the process of creating participant interactive or self-running computer presentations.
Prerequisite: CITA 380 or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 412 – ADVANCED GAME DESIGN AND APPLICATIONS
An in-depth study of complex, object-oriented, 2D and 3D game development including, but not limited to: animation, character modeling, textures, terrains, collision detection, particle effects, lighting, audio, and networking. Students work in teams to produce a functional digital game suitable for distribution.
Prerequisite: CITA 312 or permission of the instructor
3 credits (2 lecture hours, 2 lab hours), fall semester

CITA 420 – WEB DEVELOPMENT
This course combines server-side, client-side and database programming to develop a dynamic Web application. Web technologies include HTML5, CSS3, OOP design, and SQL programming. Mobile/responsive web applications are emphasized. A Model View Controller (MVC) framework is developed. A semester long development project includes topics of database design, user authentication, roles, and privileges, managing user requests, dynamic forms, security/data filtering, many-to-many design, unit testing, and naming conventions.
Prerequisites: CITA 240 and CITA 330, or permission of instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 425 - OPERATING SYSTEM SECURITY
The course will provide in-depth explanations of operating system security features as well as systematic configuration guides for proper operating system configuration. This course also provides the knowledge and skills students need to maintain the integrity, authenticity, availability and privacy of data. Through extensive hands-on lab exercises, students will gain experience establishing user, file system, and network security for enterprise computing environments. Students will learn to use tools and utilities to assess vulnerabilities, detect configurations that threaten security and provide effective access controls.
Prerequisites: CITA 325 and Math 103 eligibility or permission of the instructor;
3 credits (2 lecture hours, 2 laboratory hours), fall semester
CITA 430 - COMPUTER INTEGRATION AND INTEROPERABILITY

The study of system integration and the construction of system components that are designed to provide capabilities for cooperation in the accomplishment of given tasks. Topics covered include communication, synchronization, and representation of data. Methods of system integration and design for interoperability will be covered.

Prerequisite: CITA 370 or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 440 - DESIGNING AND MANAGING ORGANIZATIONAL TRAINING

In this course students will apply theories of adult learning and instructional development to the design, delivery, and evaluation of training for organizational and end-user information systems. Topics include: needs assessment, instructional design and strategy, live and mediated instruction, implementation management, evaluation and follow-up methods, and evaluation of training strategies.

Prerequisite: BSAD 300, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 450 - APPLIED DATABASE MANAGEMENT

A study of object-oriented system applications including, but not limited to relational database concepts and methodology, SQL, ODBC. Access programming with VBA, client/server concepts, and SQL server. One or more graphical user interface, object-oriented languages will be used.

Prerequisite: CITA 340 and CITA 350, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 460 - ORGANIZATIONAL AND END-USER INFORMATION SYSTEMS

This course is a study of the management of organizational information systems. Relevant information technology and business concepts will be used to explore the role of information systems within organizations and the relationship of information systems to the external organizational environment. Emphasis will be on organizational results, attaining efficiency and effectiveness, and achieving competitive advantage in the global economy. Information systems management case studies will be utilized.

Prerequisite: BSAD 300, senior status, or permission of the instructor
3 credits (3 lecture hours), fall semester

CITA 480 - INTERNSHIP IN INFORMATION TECHNOLOGY

Supervised fieldwork in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the CIT Department faculty in accordance with CIT Internship Guidelines. Written and oral reports of work experience activities will be required.

Prerequisite: Enrolled in CIT Bachelor Degree Program, CITA 395 and senior status, or permission of the internship committee.
12 credits, fall, spring, or summer semester

COMPUTER SCIENCE

COSC 111 - INTRODUCTION TO COMPUTER SCIENCE

An introduction to algorithms and programming using a contemporary programming language such as Python. Students learn object-oriented problem-solving, properties and qualities of algorithms, the software life cycle, data types, flow control, arrays, events, input, output, and interaction. By the end of the course, students will have written several computer programs and will have been exposed to many of the issues of interest to computer scientists.

Co-requisite: MATH 102 or higher
3 credits (3 lecture hours), fall semester

COSC 111L - INTRODUCTION TO COMPUTER SCIENCE LABORATORY

Hands-on sessions where students apply the concepts and techniques covered in the lecture portion of the course. Students develop interactive applications with an object-oriented language such as Python that include graphics, user interfaces, simple games, and calculations.

1 credit (2 laboratory hours), fall semester

COSC 112 – ELEMENTARY DATA STRUCTURES

Continuation of COSC 111 with emphasis on abstract data types and their implementation. Includes linked lists, stacks, queues, and trees, design and testing principles and software interfaces.

Prerequisite: COSC 111 or equivalent with a grade of C or better
3 credits (3 lecture hours), spring semester

COSC 201 - PROGRAMMING WITH C

General introduction to fundamentals of programming with the C programming language in a UNIX environment. Topics include: syntax and semantics, identifiers, data types, functions, arrays, strings, pointers, structures, unions, macros, and applied data structures. Emphasis is on systems programming and the use of standard libraries.

Prerequisite: COSC or CIS major with programming experience or permission of instructor
3 credits (3 lecture hours), spring semester

COSC 211 - COMPUTER GRAPHICS TECHNIQUES

General introduction to the elements and techniques of creating programs that produce graphic images or analyze graphic content. Covers the basic shapes (points, lines, poly-objects, text, circles) and transformations, and then advances to user interaction, animation, three-dimensional images, fractals and scene analysis.

Prerequisite: Knowledge of Java or similar language and permission of instructor
3 credits (3 lecture hours), fall semester

COSC 212 - ASSEMBLY LANGUAGE PROGRAMMING

Basic concepts of computer systems, computer architecture, and programming in an assembly language. Representation and storage of information; components of the hardware; CPU architecture; instruction sets; addressing modes; using the debugger, linking modules, and macros; I/O ports and interrupts; DOS and BIOS services.

Prerequisites: COSC 111 or equivalent, and MATH 145, or permission of instructor
3 credits (3 lecture hours), fall semester

COSC 231 - ADVANCED PROGRAMMING TECHNIQUES

Utilization and expansion of analysis and programming techniques developed in previous courses. This course covers various topics of current interest such as neural networks, genetic algorithms, artificial intelligence, finite state machines, and non-procedural languages. More sophisticated problem-solving techniques are utilized to address typical computing situations.

Prerequisite: COSC 112 with a grade of C or better, or permission of instructor
3 credits (3 lecture hours), spring semester
COSC 232 - SOFTWARE DEVELOPMENT INTERNSHIP
Interns develop instructional interactive software applications for use by other departments on campus. Working as a team, interns learn firsthand about designing, creating, delivering, documenting, and maintaining software in a business-like environment.
Prerequisite: COSC 112 and permission of instructor
1-3 credits (1-3 laboratory hours), fall or spring semester

CRIMINAL JUSTICE

CJUS 101 - INTRODUCTION TO CRIMINAL JUSTICE SYSTEMS*
A survey course which examines the linkages which exist between and among the police, courts, prosecutors, corrections, probation and parole.
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement.

CJUS 201 - CORRECTIONS
An introduction to community, county, state and federal correction procedures and administration. This course examines punishment, rehabilitation and incarceration. Legal issues and the complexities of prison management are also explored.
Prerequisite: CJUS 101: Introduction to Criminal Justice
3 credits (3 lecture hours) spring semester

CJUS 202 - POLICING
This course will examine the role of policing in a democratic society. The roles, responsibilities and behaviors of police will be studied. This course also gives attention to ethics and appropriate use of discretion.
Prerequisite: CJUS 101: Introduction to Criminal Justice
3 credits (3 lecture hours) fall or spring semester

CJUS 220 - CRIMINAL INVESTIGATION I
An introduction to the science of criminal investigation. Students learn information/evidence gathering, surveillance, interview, interrogation, use of informants and instrumentation techniques used in investigations of arson, narcotics, sex offenses and larceny crimes.
Prerequisite: CJUS 101: Introduction to Criminal Justice
3 credits (3 lecture hours) fall or spring semester

CJUS 221 - CRIMINAL INVESTIGATION II
A continuation of the science of criminal investigation. This course addresses the information gathering, interrogation and instrumentation used in investigations of homicide, assault and explosions. Rules of evidence, fingerprints, castings, firearms, trace minerals and criminal profiles are emphasized.
Prerequisite: CJUS 220 or permission of instructor
3 credits (3 lecture hours) fall or spring semester

CJUS 230 – BASICS OF PENAL LAW
An examination of the penal code and legislatively imposed legal parameters on law enforcement and citizens. Students will learn how to read and evaluate laws, to differentiate between numerous degrees of similar offenses, and apply the laws appropriately.
Prerequisite: “C” or better in COMP 101
Prerequisite or Co-requisite: CJUS 101
3 credits (3 lecture hours) fall semester

CJUS 231 - CRIMINAL PROCEDURE LAW
An examination of Criminal Procedure Law and its impact on law enforcement. Topics will include arrests, warrants, and rules of evidence. Court and Grand Jury procedures will be addressed.
Prerequisite: “C” or better in COMP 101
Prerequisite or Co-requisite: CJUS 101
3 credits (3 lecture hours) spring semester

CJUS 235 – JUVENILE DELIQUENCY
Social pressures on children in our society that push them toward deviant behavior are focused on in this course. Power structure, class and caste urbanization, minority groups, and the effects of technological change concurrent with urban growth. Family, peer group, gang and slum subcultures as influences in development of the delinquent role. Methods of prevention, treatment and correction.
Prerequisite: PSYC 101 or SOCI 101
3 credits (3 lecture hours) spring semester

CJUS 301 - CRIME SCENE INVESTIGATION AND MANAGEMENT
This course addresses the scientific and legal components of crime scene management and investigation. Methods of scene control, evidence collection, documentation, photography, and investigation are explored. Laws and court decisions and admissibility of evidence are emphasized.
Prerequisite: CJUS 221
3 credits (2 lecture hours, 2 lab hours) fall or spring semester

CJUS 310- SERIAL MURDER AND CRIMINAL JUSTICE
This course will examine the unique phenomenon of serial murder. Distinct from other forms of multiple murders, various types of serial murder will be studied along with definitions and ramifications and difficulties of apprehension. Other topics include the serial killer myths, race and gender, the impact of the media, profiles and possible criminological explanations. Students should be aware that due to the nature of the topic, graphic sexual and violent descriptions and images may be presented as part of this course.
Prerequisite: CJUS 202 Policing
3 credits (3 lecture hours), spring semester

CJUS 311- INTERVIEWING TECHNIQUES IN CRIMINAL JUSTICE
Interviewing Techniques in Criminal Justice addresses interviewing techniques of suspects and witnesses. Overcoming resistance, interviewing people under adverse or stressful circumstances and the detection of lies will be emphasized.
Prerequisite: CJUS 221
3 credits (3 lecture hours), spring semester

CJUS 312 - VICTIMIZATION
This course examines the plight of victims and their relationships with the criminal justice officials and agencies, policymakers, victim right advocates, the news media, offenders, security businesses, and service providers. Practical responses to victimization will be discussed.
Prerequisite: CJUS 202 Policing or permission of the instructor.
3 credits (3 lecture hours), fall semester
CJUS 315 - WHITE COLLAR CRIME
White Collar Crime addresses the illegal, unethical or deviant activity of institutions or individuals conventionally considered respectable or of high status. Students will explore the policing, prosecution and impact of white collar crime.
Prerequisite: CJUS 202
3 credits (3 lecture hours) fall or spring semester

CJUS 401 - EMERGENCY PLANNING AND RESPONSE
Emergency and security staff strategize and execute plans to prevent loss of persons and property for communities and businesses. This course will focus on planning considerations and technology, including the use of the Internet, GIS and GPS tools, direct and remote sensing, and warning systems.
Prerequisite: CJUS 221
3 credits (3 lecture hours) fall or spring semester

CJUS 402 - TERRORISM AND LAW ENFORCEMENT
This course addresses terrorism and its implications on law enforcement and domestic tranquility. The class will examine the terrorist profile and motivations. The impact of law enforcement’s response on civil rights will be emphasized.
Prerequisite: CJUS 221 and junior status
3 credits (3 lecture hours) fall or spring semester

CJUS 403 - PRIVATE SECURITY
This course will introduce students to the US Private Security Industry. Focusing on practical, real-world concepts, this course will address retail, business, employment, personal, premises, and other forms of security with professionalism and ethics.
Prerequisite: CJUS 301 Crime Scene Investigation and Management.
3 credits (3 lecture hours), fall semester

CJUS 412 ARSON AND BOMB INVESTIGATIONS
This course addresses arson and bomb investigations including the science of combustion of liquid, gas, and solid fuels in fire and bombs. Specific scenes, such as vehicles, structures, and the wilderness, will be examined as a means to study the behavior of fires and the courses of investigation.
Prerequisite: CJUS 221
3 credits (3 lecture hours) spring semester;

CJUS 414 - INVESTIGATION OF STAFF MISCONDUCT AND WORKPLACE VIOLENCE
This course provides the theoretical and practical tools to investigate staff misconduct and workplace violence.
Prerequisite: CJUS 221
3 credits (3 lecture hours) fall semester;

CJUS 449 - CRIMINAL JUSTICE INTERNSHIP PREPARATION
This course prepares the student for a full time internship in the criminal justice field. Also reviewed are career options within the discipline including law enforcement and private security. Job skills will be discussed.
Prerequisite: Successful completion of at least 90 credits of criminal justice degree requirements. Usually taken in the semester immediately preceding internship.
1 credit (3 lecture hours/5 weeks) fall or spring semester

CJUS 450 - CRIMINAL JUSTICE INTERNSHIP
The full-time internship is designed to immerse students into the Criminal Justice profession through an assignment at a pre-approved site.
Prerequisite: Grade of “C” or better in CJUS 449 and successful completion of 107 credits of criminal justice degree requirements.
15 credits, fall or spring semester

CULINARY ARTS

CUL 101 CULINARY ARTS I
An introduction to the principles, skills and techniques necessary for basic food preparation. Areas of culinary study will include the understanding and performing of a wide variety of cooking techniques. Broiling, Roasting, Sautéing, Grilling, Braising, Steaming and Stir Frying will be studied and learned to prepare basic and advanced menu items. The proper use of commercial kitchen equipment and recipes, basic sanitation and safety techniques in the kitchen will be practiced. Culinary terminology and product identification will be a focus.
4 Credits (1 lecture hour, 6 lab hours), fall semester/spring semester

CUL 111 PROFESSIONAL BAKING
An introductory course in the principles of baking, with emphasis on bakeshop ingredients, their function, measurement, and scaling. Scratch baked items to include quick breads and muffins, yeast breads, cookies, Danish pastries, cakes, pies, custards, creams and sauces.
3 Credits (1 lecture, 4 lab hours), falls/spring semester

CUL 201 ADVANCED CULINARY ARTS
A continuation on the principles, skills and techniques learned in Culinary Arts I. Areas of culinary study will include intense concentration on the understanding and performing of a wide variety of cooking techniques. Students will prepare advanced menu items while utilizing scratch cooking for all recipes whenever possible. Students will be able to convert recipes to provide purchasing lists and then fabricate portions from primal and sub primal cuts of meat and then produce those food items. Students will also continue to use basic sanitation and safety techniques in the kitchen.
Prerequisite: CUL 101 Minimum grade of C
4 Credits (1 Lecture Hour, 6 Laboratory Hours), fall semester

CUL 211 CULINARY RESTAURANT
This course is designed to give students a realistic view of a functioning restaurant operation. Students receive hands on experience in how to effectively manage, operate, and maintain a fine dining restaurant operation at the Copper Turret Restaurant in the village of Morristown. Working alongside professional chefs, servers and bartenders, students will plan, prepare and serve a fine dining menu in an upscale facility. Students will be tasked with developing menu items from a variety of cuisines. Students will learn how to construct menus, pair wines with the menus, and present food products properly for service. Students will rotate through all positions in the restaurant to gain practical experience. Emphasis is placed on menu authenticity, proper management techniques as well as fiscal responsibility.
Prerequisites: CUL 101, Cul 111, and FSAD 102
6 Credits Spring (1 lecture hour, 12 laboratory hours), spring semester

DAIRY - ANIMAL SCIENCE

DASC 100 – DAIRY CATTLE FEEDING MANAGEMENT – SHORT COURSE
An introduction to the management of feeding cattle, including forage storage, feed rates from storage, management of the feed bunk, mixing of feed, body condition scoring, lameness, cow comfort, and sampling of feed for analysis. The 2 credit option offers more in-depth exposure and analysis on all topics and will contain additional course material.
1 credit option (1.5 lecture hours, 1.5 lab hours per week for 6 2/3 weeks)
2 credit option (1.5 lecture hours, 1.5 lab hours per week for 13 1/3 weeks)
Offered during a winter term from November 1 – April 15
DASC 111 - DAIRY BREEDING - SHORT COURSE
This course covers breeding, including animal reproduction, male and female reproductive anatomy and physiology, hormonal control of the reproductive system, the estrous cycle, fertilization, and reproductive failures.
DASC 111 combined with DASC 112 will substitute for the three-credit DANS 110.
2 credits (1.5 lecture hours/week, 1.5 laboratory hours/week), total of 20 lecture hours plus 20 laboratory hours, 13 1/3 weeks
Offered during a winter term from Nov. 1-March 15.

DASC 112 - DAIRY BREEDING II - SHORT COURSE
This course covers animal breeding including animal reproduction and offers an in-depth look at reproductive programs to achieve cattle pregnancies. The course provides a hands-on approach where students will be practicing reproductive management daily. Introductory dairy cattle genetics will be discussed.
DASC 112 combined with DASC 111 will substitute for the three-credit DANS 110.
1 credit (10 lecture hours/week, 10 laboratory hours/week), total of 10 lecture hours plus 10 laboratory hours, 1 week
Offered during a winter term during one week of January

DASC 211 – DAIRY HERD HEALTH – SHORT COURSE
Prerequisite: Sufficient dairy experience as determined by the instructor
1-2 credits (1.5 lecture hours per week, 1.5 laboratory hours per week)
Offered during a winter term from November 1 to April 15.

DANS 100 - DAIRY NUTRITION
Functions and properties of nutrients, comparative digestive anatomy of non-ruminants and ruminants, the effects of proper nutrition on health and reproduction. Labs will deal with the composition and nutritive value of feeds and ration balancing for different classes of livestock. Emphasis on dairy cattle.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

DANS 110 - DAIRY BREEDING
Animal breeding including animal reproduction and basic genetics. Male and female reproductive anatomy and physiology, hormonal control of the reproductive system, the estrous cycle, fertilization, reproductive failures, diseases and management practices associated with reproduction and artificial insemination. Mendelian genetics utilizing simple dominance, sex influenced inheritance and systems of mating.
3 credits (2 lecture hours, 2 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

DANS 115 - DAIRY ARTIFICIAL INSEMINATION
Provides students with skills associated with the modern concept of artificial insemination. Topics include history, economic importance, equipment, techniques, estrous cycle of the cow, timing of insemination, and record keeping.
1 credit (1 lecture hour), spring semester

DANS 120 - ANATOMY AND PHYSIOLOGY OF THE DAIRY COW
A systematic introduction to the anatomy and physiology of the dairy animal, emphasizing structure and function. The practical aspects that relate to type, production, health, management and general knowledge are stressed. The laboratory follows the lecture course with a more in-depth application of lecture material in regards to functional anatomy. Lab includes dissection of fresh tissues.
3 credits (2 lecture hours, 2 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

DANS 140 - DAIRY CATTLE JUDGING
Judging, selecting and evaluating dairy cattle according to breed type qualifications to develop a well-balanced breeding program for milk production and type.
1 credit (2 laboratory hours), fall semester

DANS 150 - DAIRY FARM PRACTICUM
Hands-on practical experience in a commercial dairy operation at the college farm.
1 credit, fall and spring semester

DANS 151 - DAIRY TECHNIQUES
This course will focus on the refinement and development of Dairy Management skills involving all aspects of the dairy operation. Students will be responsible to attend to various needs of the dairy animals to include birth, calf raising, feeding, heat detection, animal comfort, data collection and entry. Increased emphasis will be placed on facility and employee management placing students in roles of supervisors in charge of action lists and student work schedules.
1 credit (45 laboratory hours), fall and spring semester

DANS 160 - INTRODUCTION TO DAIRY SCIENCE
An introductory course to the dairy industry with a focus on its evolution and the scope of New York’s, United States’ and the world’s industry. It will include discussion of farm types, production techniques, breeds of cattle, cattle behavior and selection, economics and trends. Dairy products will be studied, as well as consumer trends, milk quality and processing, a section on farm organization, cooperative careers, farm management structure and the future of the industry will be included. The lab will supplement the lecture and will include animal behavior, marketing, performing milk quality tests, and field trips.
3 credits, (2 lecture hours, 2 laboratory hours), fall semester

DANS 200 - NUTRITIONAL MANAGEMENT OF DAIRY CATTLE
Complete nutritional program assessment emphasizing analysis of crop production, forage analysis, ration balancing, pasture management, feeding strategies and feeding systems for optimum production and profit on a dairy farm. Computer applications, on-farm visits, and introduction to advanced technology will be included.
Prerequisite: DANS 100
2 credits (1 lecture hour, 3 laboratory hours), spring semester

DANS 210 - DAIRY HEALTH
Prerequisite or Co-requisite: DANS 151
3 credits (3 lecture hours), fall semester

DANS 220 - DAIRY HERD MANAGEMENT
The focus is on the dairy industry as a business enterprise, its history, future, productivity trends, milk production and management strategies to be competitive and profitable. Discussion on the application of scientific principles associated with progressive dairy cattle management including breeding systems, feeding systems, herd health practices, dairy herd replacements and heifer programs. Lab will include computer applications on the farm, dehorning, hoof trimming, herd health monitoring, dairy
DANS 225 - DAIRY PRODUCTION AND MANAGEMENT
This course is designed to study bovine mammary system, anatomy and physiology, milk secretion and ejection, milking machines, mastitis and prevention to attain high efficiency milk production. Herd record evaluation and use of Dairy management software will be used for production analysis. Students will work in teams and become assistant herd managers. The course will also include topics on housing systems and cost effective housing. Guest speakers, professional conferences and filed trips will be part of the course.
Prerequisite or Co-requisite: DANS 150, DANS 151
3 credits (2 lecture hours, 2 laboratory hours), spring semester

DANS 235 - DAIRY PRODUCTION SEMINAR
A course in seminar format where students, with the help of faculty and guest speakers, complete a study of dairy production literature and applications on topics in the dairy industry. The course is intended for students to gain technical and production knowledge of contemporary topics in the dairy industry by reinforcing course work with real-life applications.
Prerequisites: DANS 100, DANS 115, DANS 210, DANS 220
1 credit (1 lecture hour), spring semester

DANS 250 - DAIRY PERSPECTIVES
Principles and procedures involved in the management of a dairy business. Topics include setting personal and business goals; business planning and development; business analysis and capital investment; cash flow planning; economics and management dealings with facility planning; feeding efficiencies; environmental and community concerns; and leadership roles in tomorrow's dairy industry.
1 credit (1 lecture hour), spring semester

DANS 255 - DAIRY MANAGEMENT FELLOWSHIP
The program is for students with a serious interested in farm management. Objectives are to gain a better understanding of the integration and application of dairy farm management with respect to principles and programs with respect to progressive dairying and related industries. Topics include the trends, challenges, and positioning of dairy managers in businesses for competitiveness and profitability. Topics will integrate technical and management aspects of a farm business including establishing personal and business goals, business and planning development, business capital investment analysis, cash flow planning, and feeding efficiencies.
Prerequisites: At least two of the following: DANS 100, DANS 115, DANS 210, DANS 220, AGBS 240
2 credit hours (2 lecture hours), spring semester

DANS 260 - INTRODUCTION TO THE STUDENT HEIFER APPLIED RESEARCH AND RAISING PROGRAM (SHARRP)
The program is designated for students who have a sincere interest in dairy replacement management and applied research and demonstration. Objectives are to gain further understanding of the integration and application of technical principles in a management setting involving the dairy replacement program at SUNY Morrisville.
Prerequisites: DANS 100, DANS 115, DANS 210; DANS 220, and AGBS 240
2 credits (limited to seniors), spring or fall semester

DANS 300 - INTERNSHIP IN DAIRY HUSBANDRY
This internship involves students working in an approved job in the dairy industry. A journal, written report, employer and faculty evaluation are required upon completion of the internship. May be taken 2 times for credit if each is a different learning experience. Instructor permission required for each internship.
4 credits (12 weeks, 480 hours minimum), fall and/or spring semester

DANS 301 - CORNELL DAIRY MANAGEMENT EXPERIENCE
The Cornell Dairy Management Experience (CDME) consists of courses and the modules that are required for the Bachelor of Technology in Dairy Management. Students, in the spring semester of their junior year, will spend one semester in residency at Cornell University taking courses through the Department of Animal Science. The syllabus consists of courses and modules that place emphasis on practical technical and management applications in dairy herd management, herd health, dairy nutrition, and farm finance.
Prerequisites: DANS 100, DANS 110, DANS 120, DANS 140, DANS 151, DANS 160, DANS 210, DANS 220, DANS 225; DANS 250, AGBS 100, AGBS 200, AGBS 240
16 credits (limited to juniors in the BT Dairy Management), spring semester

DANS 305 - DAIRY HEIFER REPLACEMENT AND MANAGEMENT
This course is designed for students who have a sincere interest in dairy replacement management and the production practices associated with economical rearing of heifer replacements. Those considering career positions as calf and heifer managers should strongly consider taking this course. The objectives are to gain further understanding of the integration and application of management and technical principles associated with the heifer enterprise from the time the calf is born to the first calving. This includes the economics, feeding, health, facilities and management of the heifer enterprise in today's industry.
Prerequisites: DANS 100, DANS 115, DANS 210, DANS 220, AGBS 240
3 credits (2 lecture hours, 2 laboratory hours), spring semester

DANS 340 - ADVANCED DAIRY REPRODUCTION
This course is designed to study the dairy cattle reproductive system and provide students with expertise in managing herd reproductive programs effectively. Students will study in depth the anatomy and physiology of the male and female reproductive tracts, understand hormonal controls of the estrous cycle and be able to manipulate the estrous cycle with approved hormone therapies. Students will be responsible for herd heat detection and some artificial inseminations. Students will work with reproductive records, herd managers and artificial insemination technicians to manage the dairy herd’s reproductive program.
Prerequisites: DANS 110, DANS 115, or permission of instructor
3 credits (2 lecture hours, 3 laboratory hours), alternate years, odd years

DANS 450 - ADVANCED DAIRY HERD MANAGEMENT
Students will gain experience in managing a dairy herd with major emphasis placed in the areas of milking management, dairy nutrition, herd health and labor relations. Students will form a direct working relationship with dairy/farm managers, farm staff and industry professionals to effectively manage the dairy facilities at Morrisville State College. Students will be actively involved in gathering, organizing and analyzing data and records on the college farm. Students will use this information to generate weekly reports and will make effective weekly reports and recommendations for improvements in different areas on the dairy operation. Students will have additional opportunities to attend professional meetings in preparation for a career in the dairy industry.
Prerequisite: A “C” or better in  DANS 100, DANS 110, DANS 115, DANS 120, DANS 150, DANS 151, DANS 210, DANS 220, DANS 225 Or permission of Instructor

4 credits (1 lecture hour, 9 laboratory hours), fall semester

DANS 451 - ADVANCED DAIRY HERD MANAGEMENT II

This course is a continuation of DANS 450, Advanced Dairy Herd Management I. Students will gain a practical, hands-on experience in managing a dairy herd with a more detailed major emphasis in the areas of milking management, dairy nutrition, herd health and labor relations. Students will work directly with the dairy herd manager at Morrisville State College to gather, organize and analyze data and records on the college farm. Students will also be actively involved in working independently with industry personnel and representatives to gain additional hands-on experience and knowledge of relevant topics in the dairy industry. Students will have opportunities to attend professional meetings in the dairy industry that prepare them for a professional career in the dairy industry.

Prerequisites: DANS 450 or permission of instructor
4 credits (1 lecture hour, 9 laboratory hours), spring semester

DIESEL TECHNOLOGY

DTEC 105 - DIESEL POWERTRAINS I

A course covering the operation, diagnosis, and repair of power transmission components on Heavy Equipment and Over-The-Road Tractors. Topics addressed will include: Clutches, Standard Transmissions, Torque Converters, Automatic Transmissions, and Drive shafts.

4 credits (3 lecture hours, 2 laboratory hours), spring semester

DTEC 110 - DIESEL POWERTRAINS II

A course covering the operation, diagnosis, and repair of chassis components on Heavy Equipment and Over-The-Road Tractors. Topics addressed will include: Chassis systems, alignment, PTOs, single and tandem rear axles, springs, shocks and other suspension components, tires, wheels, and bearings, and braking systems including ABS and brake chamber servicing.

4 credits (3 lecture hours, 2 laboratory hours), spring semester

DTEC 125 - DIESEL ELECTRICAL SYSTEMS

An introduction to the fundamentals of electricity and their application in diesel engines and equipment. Basic theory of AC and DC systems used for charging, starting, lighting, and accessory circuits is covered. Lectures emphasize understanding of common circuit configurations and sample wiring schematics. Labs emphasize testing of components, troubleshooting circuits, and common repair techniques.

4 credits (3 lecture hours, 2 laboratory hours), fall semester

DTEC 150 - DIESEL SYSTEMS

Theories and principles of diesel operation and construction. Engine removal, inspection, disassembly, part analysis, and rebuilding. Engine run-in, dyno testing, and principles of troubleshooting will be discussed.

3 credits (2 lecture hours, 2 laboratory hours), fall semester

DTEC 151 - SEMINAR IN CATERPILLAR POWER SYSTEMS

Theories and principles of caterpillar diesel engines, operation and construction, engine removal, inspection disassembly and rebuild are covered in this course. Caterpillar-specific software and reference material will be used.

Co-requisites: DTEC 150 or permission of the instructor.
2 credits (1 lecture hour, 2 laboratory hours), fall semester

DTEC 250 - MECHANICAL INJECTION SYSTEMS

Principles of injection systems, design, and construction of different systems. Inspection, tear down, and service of various components. Use of special testing and calibrating equipment. Special emphasis on diesel equipment used on farm tractors and power equipment.

3 credits (2 lecture hours, 2 laboratory hours), fall semester

DTEC 225 - DIESEL ELECTRONICS

A continuation of DTEC 125. Expanding on basic AC and DC theory, to include multiplexing, active and passive sensors and digital electronics, this course addresses more complex wiring schematics, sensor troubleshooting and wiring harness repair. Students will use diagnostic equipment, lap top computers and current manufacturers’ software and communication adapters to analyze and repair digital electronic systems fund on construction, on highway, agricultural and electric power generation systems.

Prerequisite: DTEC 125
Pre-or Co requisite: MAGN 101, or by permission of instructor
4 credits (3 lecture hours, 2 laboratory hours), spring semester

DTEC 290 - DIESEL EQUIPMENT TECHNOLOGY INTERNSHIP 1

This course is designed for Diesel Equipment Technology majors to complete a limited time internship as part of their program. The student must select a diesel industry employer to work for during a college break most likely during the winter break. Students will be introduced to on-the-job skills as well as interpersonal skills necessary to maintain a job.

Prerequisites: DTEC 125, AGEN 100, permission of instructor, overall GPA of 2.0.
1 credit, spring semester (internship to take place during winter break)

DTEC 295 - DIESEL EQUIPMENT TECHNOLOGY INTERNSHIP 2

This course is designed for Diesel Equipment Technology majors to complete a limited time internship as part of their program. The student must select a diesel industry employer to work for during a college break most likely during the winter break. Students will be introduced to on-the-job skills as well as interpersonal skills necessary to maintain a job. Concentration will be on advanced skills and management systems.

Prerequisites: Final semester status in diesel program, permission of instructor, overall GPA of 2.0.
1 credit, spring semester (internship to take place during winter break)

DTEC 300 - DIESEL EQUIPMENT TECHNOLOGY INTERNSHIP 3

This course is designed for Diesel Equipment Technology majors to complete a limited time internship as part of their program. The student must select a diesel industry employer to work for during a college break most likely during the winter break. Students will be introduced to on-the-job skills as well as interpersonal skills necessary to maintain a job.

Prerequisites: DTEC 125, AGEN 100, DTEC 125, DTEC 105, permission of instructor, overall GPA of 2.0.
4 credits, fall semester

DTEC 350 - ADVANCED DIESEL FUEL SYSTEMS

A continuum of DTEC 250 involving more advanced concepts of diesel engines, injection systems, two and four cycle engines, use of advanced testing and calibration equipment. Electronic control of diesel fuel injection systems, operating principles and computer diagnostics will be addressed.

Prerequisite: DTEC 250
3 credits (2 lecture hours, 2 laboratory hours), spring semester
**COMPUTER-AIDED DESIGN TECHNOLOGY**

**DRFT 151 - ENGINEERING DRAWING**
Introduction to the graphic language, conventions, and tools of sketching and technical drawing. Topics include lettering, geometric constructions, multiview projection, dimensioning, sectional and auxiliary views, and geometric tolerancing.

Co-requisite: MAGN 101
2 credits (1 lecture hour, 2 laboratory hours), fall semester

**DRFT 252 - GEOMETRIC DIMENSIONING AND TOLERANCING**
This course covers functional dimensioning, tolerancing and design principles and applications based on ASME Y14.5M - the international engineering language used to communicate the size, form, orientation, and location of part features. Topics include fundamental rules, symbology, tolerance expression and interpretation, datums, fit systems, inspection techniques and design for manufacture.

Prerequisite: CAD 186, MATH 102
2 credits (4 laboratory hours), fall semester

**EARLY CHILDHOOD**

**ECHD 101 - INTRODUCTION TO EARLY CHILDHOOD**
This course is an introduction to the essentials of quality early childhood programs, current issues and career opportunities in early childhood education. It provides a comprehensive overview of learning theories, family involvement and contemporary issues in the field including diversity, classroom inclusion and integration of curriculum. Students will observe early childhood programs and/or classrooms.

Prerequisites or Co-requisite: None
3 credits (3 lecture hours), fall semester

**ECHD 102 - SOCIAL DEVELOPMENT AND POSITIVE GUIDANCE**
This course examines the social development of young children from birth to age eight from a positive child guidance perspective. Theoretical foundations related to child development will be explored in conjunction with the implementation of various models to effectively support young children in a global community. Topics will include: stages of social/ emotional development of children from 0-8 years old, defining and distinguishing problem behaviors, adopting appropriate guidance techniques for developing self-control and accountability in young children and structuring the classroom environment and curriculum to teach prosocial skills. Understanding and working with children with special needs in an inclusive setting, identifying and promoting culturally sensitive guidance, working with families and communities as partners and resources will be integrated throughout the course.

Prerequisite: ECHD 101
3 credits (3 lecture hours), spring semester

**ECHD 103 - TECHNIQUES OF OBSERVATION AND ASSESSMENT - FIELD I**
This course introduces students to observation and assessment techniques that are needed to understand and interpret young children’s growth and development in order to meet the individual needs of children in a diverse population. Students will examine formal and informal assessments of physical, cognitive, language and social/emotional development. Current methods, confidentiality and professionalism will be stressed. Students will have the opportunity to practice the techniques and assessments through the semester in a field placement setting.

Prerequisite: ECHD 101
3 credits (3 lecture hours), spring semester

**ECHD 201 - FAMILY AND CHILD HEALTH, SAFETY, AND NUTRITION**
This course will examine the health, safety and nutritional needs of children birth-8 years. The unique needs of early childcare settings will be addressed and include the following topics: personal hygiene, safety practices, nutritious meals, chronic conditions and health policies. In addition, students will explore the variety of environmental, behavioral and constitutional factors which influence health within the family, the childcare setting and the community. Investigation of current issues and community agencies will be included.

Prerequisites: ECHD 101
3 credits (3 lecture hours), fall semester

**ECHD 202 - LANGUAGE, LITERACY AND LITERATURE IN EARLY CHILDHOOD**
This course examines the development of language and literacy in young children from birth through the primary years. Theoretical foundations and various models that support young children’s early literacy will be explored. Other topics included are: working with families to support literacy development, assessing early literacy development, integrating literacy throughout the curriculum, and selecting quality literature that addresses cultural, racial, linguistic, religious, gender, age and family diversity. Students will be given the opportunity to explore all genres, and a student-created children’s book will be a culminating project. A two hour community project involving reading to children is required.

Prerequisites: ECHD 103 or Permission of Instructor
3 credits (3 lecture hrs.), fall semester

**ECHD 203 - INFANTS AND TODDLERS**
This course focuses on the development of high quality programs for infants and toddlers in group care, providing for their physical, social/emotional and cognitive needs. Understanding the significance of providing sensory rich and stimulating environments, experiences and relationships with infants and toddlers will be the foundation for developing programs. Developmentally and culturally diverse approaches, techniques and materials will be emphasized as well as setting up positive and nurturing learning and growing environments. Students will learn the importance of the caregiver’s role, building relationships with parents and the significance of early intervention. The role of a professional and professionalism will be stressed. There will be a minimum of one infant and one toddler observation experience in child care settings.

Prerequisites: ECHD 103, PSYC 241 or Permission of Instructor
3 credits (3 lecture hours), fall semester

**ECHD 204 - CHILDREN WITH SPECIAL NEEDS**
This course is intended to provide students with knowledge of the nature and requirements of children and families with special needs in the areas of health, sensory, physical, developmental, learning and behavior disorders as well as traumatic brain injuries and giftedness. The significance of early identification, assessment and intervention will be emphasized. Students will learn about Federal and State laws and regulations including the Individuals with Disabilities Education Act and the placement of students in special education settings and mainstream classroom inclusion. The emphasis will be on ways to adapt curriculum and the environment to meet the needs of a diverse population of children within the context of an inclusive classroom. Students will have the opportunity to observe children in different settings and participate in the development of developmentally appropriate anti-bias activities for children.
Prerequisites: ECHD 201, ECHD 202, ECHD 203 or Permission of Instructor
3 credits (3 lecture hours), spring semester

**EDU 201 - FOUNDATIONS OF EDUCATION**
This course provides an introduction to teaching as a career by exploring sociological, philosophical and historical aspects of education and the profession of teaching. Emphasis will be placed on the topics of the school environment, student diversity, teacher effectiveness, curriculum, and contemporary issues in education. Written and oral presentations, critical thinking, reflective reading, research and discussion are integral parts of this course.

Prerequisites: Cumulative GPA of 2.7 or better and admission to the Teacher Education Transfer Program or permission of instructor.
Co-requisite: EDU 202
3 credits (3 lecture hours), fall or spring semester

**EDU 202 - GUIDED FIELD WORK IN EDUCATION**
In this course, students learn introductory guided field work in an elementary or secondary school. This course provides a clinical experience to help students see the connection between educational theory and the actual classroom experience. It also helps students decide if teaching is an appropriate career choice. Field work experience includes observing, interviewing, assisting, and interacting with students, teachers, administrators, and staff. Thirty hours of field work and a reflective journal are required.

Prerequisites: Cumulative GPA of 2.7 or better.
Co-requisite: EDU 201
1 credit (30 field work hours) fall or spring semester

**ECONOMICS**

**ECON 100 - INTRODUCTION TO MACROECONOMICS**
Basic macroeconomics related to the development of the American Economics system. Factors which determine prices in a market economy, the use of budgets, efficiency in business and government, the role of money and monetary institutions and monetary policy in our economy, the measurement of economic activity, the principles of taxation, business cycles, and the determination of income and employment, economic security and economic stability, and economic growth and ecology.

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**ECON 140 - INTRODUCTION TO MICROECONOMICS**
Basic micro-economics related to the development of today’s American economic system. Principles of production, operation of the price system, the competitive market model, oligopoly, monopoly and the role of government, allocation of economic resources, income distribution, role of the U.S. in the international economy.

3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**ECON 300 - MONEY, BANKING AND FINANCIAL MARKETS**
This course is a study of essentials of the domestic monetary system, banking structure, and financial markets. It focuses on monetary practices, theory, and policy. Included in the course are an analysis of the nature, functions, and theory of money; an overview of the commercial banking system and the structure of the Federal Reserve System; and an examination of monetary policy as related to fiscal policy, economic activity, and international financial activities.

Prerequisite: ECON 100 or permission from the instructor.
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.
ECON 370 - INTERNATIONAL ECONOMICS
This interdisciplinary global course interrelates various elements of economics, government and history into the traditional economic analysis. Current debates, problems and issues are examined along with an analysis of production, money, finance and trade.
Prerequisite: ECON 100, Junior-level status (or permission of instructor)
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

ELECTRICAL ENGINEERING TECHNOLOGY

ELEC 190 - ELECTRICAL THEORY IB
An introductory electric circuits course for non-electrical majors. Course material covers basic DC and AC circuits utilizing resistors, inductors, capacitors, relays, and transformers. Students are taught to work competently with sinusoidal voltage expressions, sinusoidal phase displacement, complex numbers, complex impedance and circuit power factors.
Pre or Co-requisite MATH 102, or permission of the instructor.
4 credits (3 lecture hours, 2 lab hours), fall semester

ELEC 290 - DIGITAL CIRCUITS AND MICROPROCESSORS
An introduction to the digital circuits and microprocessors for non-electrical majors. Topics include basic electrical circuits using LEDs and switching transistors, use of the oscilloscope, number systems, logic gates, registers, memory devices, data transmission and programming applications.
3 credits (2 lecture hours, 1 recitation hour, 2 laboratory hours), spring semester

ELEC 291 - ELECTROMECHANICAL ENERGY DEVICES
The analysis of AC and DC power system components including rotary generators, motors, transformers and transmission lines. Single and poly-phase systems will be considered. The student will learn the theory of operation and methods of analyzing various electrical machines using algebra based phasor analysis.
Prerequisites: ELEC 190; Math 102
3 credits (3 lecture hours), spring semester

ENGINEERING SCIENCE

ENGR 100 – INTRODUCTION TO ENGINEERING
An introduction to the engineering profession followed by a survey of PC-based computer tools applicable to new Engineering Science students. These tools range from standard word processing through graphics and CAD to analysis tools such as spreadsheets and computer math packages. These tools are applied in project context providing an introduction to the engineering design process from initial identification of need through specification and communication of final design.
Pre- or Co-requisite: MATH 103 or equivalent
3 credits (2 lecture hours, 2 laboratory hours), fall semester

ENGR 135 – COMPUTING AND NUMERICAL TECHNIQUES
Introduction to a modern, math oriented programming language and to the computer-assisted solution of engineering problems. Introduction to more advanced programming topics including the handling and manipulation of complex numbers, the solution of large systems of equations and unknowns, and numerical searches and root finding. Structured programming methodology will be emphasized. This problem-oriented course will use a current programming language as recommended by the Engineering Science program coordinator.
Prerequisite: MATH 151 or permission of instructor
Pre- or Co-requisite: MATH 152
3 credits (3 lecture hours), spring semester

ENGR 201 - STATICS
Students will gain knowledge of composition and resolution of forces and couples, equivalent systems, equilibrium of simple structures, trusses and frames, friction, properties of areas. Free body diagrams and vector algebra will be used.
Prerequisite: PHYS 157
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

ENGR 202 - DYNAMICS
Kinematics of motion, Cartesian, path and polar coordinates, rigid body motion and relative motion analysis. Kinetics of particle and rigid body motion using force-acceleration, work-energy, and impulse-momentum approaches. Vector calculus used throughout.
Prerequisite: ENGR 201, MATH 261
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

ENGR 210 - ELECTRICAL SYSTEMS
Analysis of linear one-dimensional electric circuits including DC, AC and transient solutions. Basic network principles and theorems, loop and node solutions, transfer functions, frequency response, analogs, zero-pole concepts and coupled circuits. Computer analysis.
Prerequisite: MATH 262
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

ENGR 212 - MECHANICS OF MATERIALS
Examination of stress-strain relationships, physical properties of engineering materials. Analysis of mechanics of deformation, strain and stress for axial, torsion, and transverse loadings, combined stress, buckling of columns.
Pre- or Co-requisites: ENGR 202 and MATH 262
3 Credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science
ENGT 100 - INDUSTRIAL INTERNSHIP
A supervised internship program for students majoring in Architectural Studies and Design, Engineering Technology and related programs. Course enrollment and preparation for the internship will commence in the student's first year. Student will work a minimum of 10 weeks or 400 hours, full-time or part-time equivalent, in the field. A written and oral report of the internship project will be presented to the engineering technology faculty and participating company representatives by the middle of March or October following the semester of enrollment.

3 credits (10 weeks in industry), fall or spring semester

ENGLISH: LITERATURE, THEATER AND COMMUNICATION

ENGLISH: LITERATURE, THEATER AND COMMUNICATION
SKLS 087- READING ESSENTIALS
SEE SKLS COURSES
SKLS 088- WRITING ESSENTIALS
SEE SKLS COURSES
ENGLISH 100- INTRODUCTION TO COLLEGE WRITING
SEE COMP 100
ENGLISH 101- COMPOSITION AND RESEARCH
SEE COMP 101
ENGLISH 102- WRITING ABOUT LITERATURE
SEE COMP 102
ENGLISH 112- TECHNICAL COMMUNICATIONS
SEE COMP 110
ENGLISH 121- INTRODUCTION TO SPEECH
SEE COMM 111
ENGLISH 122- SMALL GROUP DISCUSSION
SEE COMM131
ENGLISH 123- THEORIES OF INTERPERSONAL COMMUNICATION
SEE COMM121
ENGLISH 124- INTRODUCTION TO THEATER
SEE THEA 124
ENGLISH 125- PLAY PRODUCTION
SEE THEA 125
ENGLISH 130- CRITICAL READING
SEE COMM 101
ENGLISH 203- AMERICAN LITERATURE TO 1900
SEE LITR 203
ENGLISH 204- AMERICAN LITERATURE 1900 TO PRESENT
SEE LITR 204
ENGLISH 205- ENGLISH LITERATURE TO 1800
SEE LITR 205

ENGLISH 206- ENGLISH LITERATURE 1800 TO PRESENT
SEE LITR 206
ENGLISH 207- WESTERN WORLD LITERATURE
SEE LITR 207
ENGLISH 208- EASTERN WORLD LITERATURE
SEE LITR 208
ENGLISH 211- BLACK AMERICAN WRITERS
SEE LITR 211
ENGLISH 212- EDITING 1
SEE COMP 240
ENGLISH 213- EDITING 2
SEE COMP 241
ENGLISH 214- EDITING 3
SEE COMP 242
ENGLISH 220- WRITING IN THE DISCIPLINES
SEE COMP 220
ENGLISH 221- LITERATURE OF GENDER
SEE LITR 221
ENGLISH 222- RURAL STUDIES
SEE HUMN 230
ENGLISH 230- SCIENCE FICTION
SEE LITR 342
ENGLISH 231- ADVANCED COMPOSITION AND RESEARCH
SEE COMP 221
ENGLISH 234- CREATIVE WRITING: SHORT STORY
SEE COMP 230
ENGLISH 235- CREATIVE WRITING: POETRY
SEE COMP 231
ENGLISH 238- MODERN LITERATURE
SEE LITR 231
ENGLISH 240- THE FILM EXPERIENCE
SEE HUMN 210
ENGLISH 246- MAJOR AMERICAN NOVELS
SEE LITR 232
ENGLISH 249- LITERATURE AND THE ENVIRONMENT
SEE LITR 233
ENGLISH 250- ASPECTS OF CONTEMPORARY LITERATURE
SEE LITR 234
ENGLISH 275- CREATIVE WRITING
SEE COMP 232
ENGLISH 312- ADVANCED TECHNICAL COMMUNICATIONS
SEE COMP 310
ENGLISH 342- SCIENCE FICTION
SEE LITR 342
ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT

ENTR 317 – THE ENTREPRENEURIAL PROCESS
The course will focus on the issues involved in the theory, process, and practice of Entrepreneurship. It is offered as the beginning course for the BBA in Entrepreneurship/Small Business Management. Subject areas covered include (but are not limited to) the current entrepreneurial environment, the individual as an entrepreneur, entrepreneurial planning, and creating and managing the venture.

Prerequisite: Admission into the BBA Entrepreneurship and Small Business Management program
3 credits (3 lecture hours) fall semester

ENTR 320 – ACCOUNTING FOR ENTREPRENEURS
This course examines the basics of accounting and accounting relationships. The course will cover the accounting cycle, Quick Books, financial analysis, cash flow, cost analysis, and budgeting. The student will obtain the fundamentals of accounting skills needed for entrepreneurs to use accounting in their business and be able to begin making financial decisions that are important to a newly created firm.

Prerequisites: MATH 102 and Junior Standing
3 credits (3 lecture hours), fall semester

ENTR 327 – GUERILLA TACTICS FOR SMALL BUSINESS MARKETING
This course will provide the student with the marketing fundamentals necessary in the startup, development, and operation of a small business. Students will develop successful marketing strategies with limited or nonexistent budgets. Guerilla Marketing tactics and innovation are emphasized.

Prerequisites: ENTR 317 and BSAD 325.
3 credits (3 lecture hours, 1 laboratory hour), fall semester

ENTR 335– ENTREPRENEURIAL FINANCE
This course examines the basics of financial analysis, cash flow, credit and lending, the process of financing and financial growth of a new venture. The student will be introduced to obtaining and using various financial resources. The student will also learn how to create value using financing and financial structure as well as how to measure the value of a firm that might be used to purchase the operations. Topics include financial statements, forecasting, banking, venture capital, financial resources, business plan as related to financial information, and management of the financial resources of the firm.

Prerequisites: Admission into the Entrepreneurship and Small Business Management BBA program, ENTR 317, BSAD 116, BSAD 221, ENTR 320, and ECON 100 or 140
3 credits, spring semester

ENTR 338 – LEGAL ISSUES FOR THE ENTREPRENEUR
This course focuses on several areas of the law that may affect Entrepreneurial success. The course will start with a discussion of contracts basics. From there we will cover the legal issues concerning; funding and finance, location issues (zoning, leasing, purchasing), types of business organizations (proprietorships, partnerships, limited liability companies, corporations), franchising, buying a business, product liability, insurance, intellectual property (patents, copyrights, trademarks), taxes, harvesting, and how, when and where to get legal help.

Prerequisites: ENTR 317, BSAD 116, BSAD 221, ENTR 320, and ECON 100 or 140
3 credits (3 lecture hours), spring semester

ENTR 342 – INNOVATION AND NEW VENTURE CREATION
This course examines product and venture creation for the entrepreneur. The student will also learn about innovation that would lead toward the creation of ideas for future ventures or businesses. The student will learn how to identify new opportunities and screen those opportunities for success versus failure. The student will also learn how to build a model for a future business and handle rapid growth of a business. The course will also look at the feasibility of the ideas generated by the student in order for the student to identify possible future businesses.

Prerequisites: ENTR 317 or BSAD 320, BSAD 116, BSAD 221, ENTR 320 or ACCT 102, and ECON 100 or 140 3 credits, spring semester

ENTR 352 – ENTREPRENEURIAL VALUE CHAIN MANAGEMENT
This course examines the management and optimization of various operations of a business. The student will learn how to handle vendors and purchasing, managing quality and project as well as logistics and inventory. The student will understand the various aspects of the supply chain in order to reduce the obstacles and maximize the efficiency and effectiveness of the operations of a new venture. The student will learn how to identify and assess risk concerning the business and learn how to manage the resources of the business so that the business is efficient and effective.

Prerequisites: ENTR 317, BSAD 116, BSAD 221, ENTR 320, and ECON 100 or 140
3 credits, spring semester

ENTR 417 – CREATING THE BUSINESS VENTURE
This course will require the student to use all of the entrepreneurial tools and business skills acquired in the Entrepreneurship and Small Business Management program by preparing two complete business plans. To that end, the course will cover the sections of a business plan in detail including: Executive Summary, Mission Statement/Business Description, Business Environment, Marketing Plan, Operations Plan, Management Team, Financial Section (forecasts), Legal/Insurance Section, Critical Risks, Assumptions/Conclusions, and Harvest Strategy. Each Student will be required to research and complete two full and detailed business plans for their chosen ventures. Students will also be required to give a 15-minute presentation of one of their business plans.

Prerequisites: ENTR 335, 342, 352, and 338
3 credits (3 lecture hours), fall semester

ENTR 474 – PREPARATION FOR FIELD STUDY
This course is designed to prepare the student for the capstone course in the Entrepreneurship and Small Business Management degree program, ENTR 475. The student, with the guidance of a faculty member, will explore their options for applying their prior coursework, both as an entrepreneur and an intrapreneur. They will develop several field experience plans to complete during the field study, their outcomes for the experience, and what skills and knowledge they anticipate deriving from the field study. The course culminates in a presentation and committee approval of the student’s field study plan.

Prerequisite: Junior standing in the Entrepreneurship and Small Business Management degree program or permission of instructor.
Co-requisite: ENTR 417
1 credit, fall semester

ENTR 475 – PRACTICUM IN ENTREPRENEURSHIP/BUSINESS CONSULTING
This course serves as the capstone experience in the Bachelor of Business Administration (BBA) in Entrepreneurship and Small Business Management degree program. This course requires students to undergo a practicum in business consulting or in creating their own business. The practicum will require student interns to work directly with successful entrepreneurs in high-growth, innovative companies or to engage in faculty-mentor supervised activities associated with
starting their own business. ONLY students of senior status in good standing enrolled in the BBA in Entrepreneurship and Small Business Management degree program are eligible for the practicum. The students must complete at least 480 hours of activities for at least 12 weeks with their host company. Students choosing to create their own businesses must devote a commensurate number of hours toward creation, start-up, and/or management of their own company.

Prerequisite: ENTR 417 (grade of C or better) and ENTR 474 or permission of instructor.
15 credits (15 laboratory hours) spring semester

ENVIRONMENTAL SCIENCE

ENSC 100 - INTRODUCTION TO ENVIRONMENTAL SCIENCE
A dual-credit course with designated high schools to acquaint selected high school students with the basic principles of environmental science-topics such as soils, water, air, energy, wildlife, IPM, population ecology, forestry and waste management will be covered. Students will design and carry out a long-term project which will be based on a current environmental issue.
3 credits (minimum of 45 lecture class hours), spring semester

ENSC 101 - AGRICULTURAL SCIENCE
Basic introduction to general agricultural and life science principles as an aid to the understanding of plant, animal and soil functions, as well as fundamental computations as applied to agricultural production. This course is intended for non-ENSC majors.
3 credits (3 lecture hours), fall semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

ENSC 102 - BOTANY: FORM AND FUNCTION OF SEED PLANTS
Structure and function of higher vascular plants, with emphasis on cell structure, photosynthesis and respiration, anatomy, physiology, reproduction and Mendelian genetics.
3 credits (2 lecture hours, 2 laboratory hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

ENSC 103 -BOTANY, PLANT DIVERSITY
An evolutionary survey of the plant kingdom with emphasis on structure, plant life cycles, ecological significance, and importance of non-vascular and lower vascular plants.
Prerequisite: BIOL/ENSC 102 or permission of instructor
(3 credits; 2 lecture hours and 2 laboratory hours per week), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

ENSC 106 - PESTICIDE USE AND HANDLING
Basic principles of pesticide use, handling and application, including laws, safety, the environment, storage and disposal. Students will be given the opportunity to be tested by the Department of Environmental Conservation to receive certification at the end of the course.
2 credits (1 lecture hour, 2 laboratory hours), spring semester

ENSC 107 - INTEGRATED PEST MANAGEMENT
Principles of pest control emphasizing biological, cultural, and regulatory control methods in a sound ecological and economic manner. Introduction to integrated pest management tactics of monitoring, forecasting, determining thresholds and control options. The course will also survey pest management programs used in various agricultural environments.
1 credit (1 lecture hour), fall semester

ENVIRONMENTAL TECHNOLOGY

ENVT 100 - INTRODUCTION TO ENVIRONMENTAL TECHNOLOGY
A study of the basic concepts of water pollution control, air pollution control, and solid waste management. Review of regulations relating to Environmental Protection and waste minimization/pollution prevention activities are covered.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

ENVT 201 - FIELD OVERSIGHT
Students will be introduced to job responsibilities of field personnel, including construction, investigating and remediation. The course provides fundamentals required for field oversight personnel to enhance their observation and reporting skills in such areas as Brownfields and construction sites. Topics include field observation and notes, inspection reports, field sampling, health and safety issues, construction equipment and plan and specification review.
3 credits (short course, 45 contact hours), scheduled periodically through Morrisville State College and the SUNY Center for Brownfield Studies

ENVT 250 - INTERNSHIP IN ENVIRONMENTAL TECHNOLOGY
Student will work at an approved job in the environmental technology industry. A comprehensive written report and employer evaluation are required at the end of the work period.
Prerequisite: Permission of instructor
Up to 4 credits, fall or spring semester

ENVT 345 - SURFACE AND GROUNDWATER MANAGEMENT
An examination of the methods and strategies available for the delineation, assessment and characterization of confined and unconfined groundwater aquifers, as well as their recharge areas. Introduction to groundwater extraction and well functions. Surface water management issues, including watershed delineation and protection. Issues in surface and groundwater contamination and remediation. Approaches to water rights and allocation. Brownfields. Federal, state and local regulatory issues.
Prerequisite: upper division standing or permission of instructor
3 credits (3 lecture hours), spring semester

EQUINE SCIENCE AND MANAGEMENT

ERID 102 - INTERMEDIATE EQUITATION I
This course is an introduction to intermediate skills in western and hunt seat equitation. It provides a reinforcement of western and hunt seat equitation for the rider with basic skills, a review of lunging, long lining, and driving following USEF and AQHA guidelines, and a continuation of the basics of grooming, tack, bits, and safety.
Prerequisite: Admission into the Equine Science and Management Degree Program, Requires permission of instructor or prior placement into course.
3 credits (1 lecture hour, 2 - 2 laboratory hours of riding - one western and one hunt seat), fall semester

ERID 103 – INTERMEDIATE WESTERN EQUITATION II
A continuation of ERID 102, Intermediate Western Equitation II, emphasizing development and advancement of skills necessary to communicate effectively to the horse to prepare the student for riding intermediate maneuvers
Prerequisite: ESCI 150 with a C or better, and ERID 102 with a grade of B or better or ERID 104 with a C or better, and permission of the instructor
1 credit (2 laboratory hours), spring semester
ERID 104 - ADVANCED EQUITATION I
This course is an introduction to advanced skills in western and hunt seat equitation. It provides a reinforcement of basic intermediate western and hunt seat equitation for the rider with intermediate skills and includes a review of lunging, long lining, and driving following USEF and AQHA guidelines, and a continuation of grooming tack, bits, and safety skills.
Prerequisite: Admission into the Equine Science and Management Degree Program. Requires permission of instructor or prior placement into course.
3 credits (lecture hours, 2-2 laboratory hours of riding—one western and one hunt seat), fall semester

ERID 105 - ADVANCED WESTERN EQUITATION II
A continuation of ERID 104. Advanced Western Equitation II, emphasizing development and advancement of skills necessary to communicate effectively to the horse to prepare the student for riding advanced maneuvers.
Prerequisite: ESCI 150 with a C or better, and ERID 102 with a grade of A or ERID 104 with a B or better, and permission of the instructor
1 credit (2 laboratory hours), spring semester

ERID 111 - INTERMEDIATE HUNT SEAT EQUITATION II
This course, a continuation of ERID 102, emphasizes development and advancement of skills necessary to safely jump a two-foot course of fences.
Prerequisites: ESCI 150 with a C or better; and ERID 102 with an B or better or ERID 104 with a C or better; and permission of instructor
1 credit (2 laboratory hours), spring semester

ERID 112 - ADVANCED HUNT SEAT EQUITATION II
In this course, which is a continuation of ERID 104, development and advancement of skills necessary to safely jump a three-foot course of fences is emphasized.
Prerequisites: ESCI 150 with a C or better; and ERID 102 with an A or ERID 104 B or better
1 credit (2 laboratory hours), spring semester

ERID 200 - WESTERN RIDING
Development and advancement of basic riding skills of western horsemanship involving the horse and rider working as a team with particular attention to the development of a light set of hands and a balanced seat for the rider.
Prerequisites: ERID 103 with a B or ERID 105 with a C, ESCI 150 and ESCI 151 with a C grade or better, and permission of instructor
1 credit (2 laboratory hours), fall semester

ERID 210 - ENGLISH DRESSAGE
Development and practice of the horse and rider in the basic schooled riding techniques.
Prerequisites: ESCI 150 and ESCI 151 with a C or better and either ERID 111 with a B or better or ERID 112 with a C or better and by permission of instructor
2 credits (1 lecture hour, 30 contact hours of riding), spring semester

ERID 220 - WESTERN DRESSAGE
Advanced training of the western horse and rider. This course is designed to develop and refine the student’s skills and techniques in riding western horses. Emphasis on the rider’s ability to develop correct movement at all gait.
Training theories and horse psychology will be explored as it relates to the enhancement of effective riding and getting the desired response from the horse.
Prerequisites: ERID 200 with a B grade or better, and by permission of instructor
2 credits (1 lecture hour, 30 contact hours of riding), spring semester

ERID 240 - INTRODUCTION TO THE TRAINING OF HUNTERS AND JUMPERS
The introduction of Hunt Seat Riding techniques to establish the foundation for the student to continue with more intensive training in advanced courses. The students will gain a broad working knowledge of the psychology of horses and different theories on the breaking and training of horses. Theory and intensive work on the riders form and function; introduction and advancement of lateral and longitudinal bending techniques; introduction to training horses over cavaletti, lines, and courses. Management of the training horse’s health care and maintenance techniques and barn management and equipment knowledge and care will be introduced.
Prerequisites: ESCI 150, ESCI 151, ERID 111 with a B grade or better or ERID 112 with a B grade or better and permission of instructor.
4 credits (1 lecture hour and 12 laboratory hours), fall semester

ERID 250 - BREAKING AND TRAINING
The training of young, unbroken horses. Emphasis on the techniques to break and train these horses to ride or drive. Students are also responsible for the complete care of both the horses and the training facility.
Prerequisites: ERID 103 with a B or better or ERID 105 with a B or better and permission of instructor, ESCI 150 and ESCI 151 with a C or better
3 credits (1 lecture hour/week, total of 60 laboratory hours), fall semester

ERID 255 - INTERMEDIATE BREAKING AND TRAINING
The training of young horses utilizing techniques learned in ERID 250 as well as advanced techniques. Management of young horses, record keeping, health care and stable management are emphasized.
Prerequisite: ERID 250 with minimum grade of “B” or better and permission of instructor
4 credits (12 laboratory hours/week for 15 weeks), spring semester

ERID 260 - INTERMEDIATE TRAINING OF HUNTERS AND JUMPERS
An exploration of Hunt Seat riding techniques to train the young, spoiled or difficult horse on the flat and over fences. Functions and applications of cavaletti and gymnastics; the systematic progression in training from cavaletti and through jumping lines, more difficult obstacles, full courses and cross country work. Procedures for marketing the jumping horse and showing it in competitive situations. Management of the training horse’s health care and maintenance techniques and barn management and equipment knowledge and care will be continued.
Prerequisite: ERID 240 with a B or better or ERID 250 with a B or better and permission of instructor
4 credits (12 laboratory hours), spring semester

ERID 300 - ADVANCED EQUINE SPECIALIZATION I
This is the first of three intense courses in a specific concentration (hunt seat, western, or draft/driving). Advanced principles and practices of breaking, training and management will be emphasized. Students will help manage the horses and facilities in the particular area of concentration.
Prerequisites: ERID 255 or 260 or 170 with a minimum grade of B and ESCI 130 with a B or better and permission of instructor
4 credits (1 lecture hour and 9 laboratory hours), fall or spring semester

ERID 330 - EQUINE INSTRUCTION METHODOLOGY
A study of effective teaching techniques relating to equine riding and driving courses with consideration of the physical and psychological factors involved. Appropriate class preparation, teaching methods and student evaluation will be covered. Opportunities for observation, assisting and teaching experience.
Prerequisite: Equine major with at least 60 credit hours
1 credit (1 lecture hour, 2 laboratory hours), fall semester
ERID 350 - ADVANCED EQUINE SPECIALIZATION II
This is the second of three intense courses in a specific concentration (Hunt seat, western, draft/driving or breeding). The horse will be brought to its best possible level of management/performance. An analysis of the horses’ physical and mental capabilities will be used to develop them to their fullest. Horses may be prepared for competition and exhibitions. The management of groups of competitive show horses will be taught. In some options, students will participate in the supervision of underclassmen.
Prerequisite: ERID 300 with a B or better or ESCI 320 and 340 with a B or better and permission of instructor
4 credits (1 lecture hour and 9 laboratory hours), fall or spring semester

ERID 400 - ADVANCED EQUINE SPECIALIZATION III
This is the third course in a three-course sequence designed to enhance the students’ skills in hunt seat, western, or draft horse training and management. Designed to utilize the skills taught in ERID 300 and 350. This course focuses more on the student's own managerial abilities. Students may assist in teaching students at the freshman and sophomore levels.
Prerequisite: ERID 350 with a B or better and permission of instructor
4 credits (1 lecture hour, 9 laboratory hours), fall or spring semester

ESCI 110 - EQUINE ANATOMY AND PHYSIOLOGY
The study of the anatomy and physiology of horses’ body systems: skeletal, muscular, respiratory, cardiovascular, neurological, endocrinological, digestive, and reproductive systems.
Prerequisites: ESCI 130 with a B- or better or permission of instructor
3 credits (3 lecture hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

ESCI 130 - EQUINE AND STABLE MANAGEMENT
Lecture subjects include general knowledge and observation of horse health, e.g., condition, dentistry, internal and external parasites, limb and hoof care, and shoeing and trimming, as well as stable management and employee success. Laboratory skills include, leg wraps, basic restraints, equipment applications, hoof trimming and shoeing, and fitting and showmanship.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

ESCI 140 - EQUINE JUDGING
Evaluating and placing conformation and performance classes of various breeds of horses with an emphasis on the stock breeds. Proper use of terminology as it applies to conformation and performance classes will be taught. Video and live classes will be used as a tool for properly evaluating horses and their performance.
2 credits (1 lecture hour, one 2-hour laboratory), spring semester

ESCI 150 - FARM PRACTICUM I-EQUINE
Hands-on practical experience in stable, farm management. Mucking, grooming, feeding, general maintenance of arena, paddocks, stable, and stable.
2 credits (3 hours per day, 7 days per week for 22-week sections), fall semester

ESCI 151 - FARM PRACTICUM II-EQUINE
Hands-on practical experience in stable and farm management as well as supervising work details and management of horses.
2 credits (3 hours per day, 7 days per week for 22-week sections), spring semester

ESCI 170 - DRAFT AND DRIVING HORSE MANAGEMENT
Lecture topics emphasize a survey of today's industry, breeds, history, and conformation, principles of harnessing and hitching, and management of draft horses. Also included are showing procedures, breeding, foaling and training. Laboratory consists of hands-on experience in the handling, harnessing, hitching, driving, care and management of draft and driving horses.
2 credits (1 lecture hour, 3 laboratory hours), spring semester

ESCI 210 - EQUINE NUTRITION
Functions and properties of nutrients, the digestive system of the horse as compared to simple stomached animals and ruminants, the effects of proper nutrition on horses of different ages and levels of exercise. Labs on the composition and nutritive value of feeds, the use of feeding standards in balancing rations and forage and concentrate identification. Yearly feed costs under set conditions.
3 credits (2 lecture hours, one 2-hour laboratory), fall semester
Prerequisite: ESCI 110 with a C- or better or permission of instructor
1 credit (2 laboratory hours), spring semester

ESCI 225 - EQUINE ARTIFICIAL INSEMINATION
The artificial insemination of horses. Topics and competencies include A-V types and preparation, stallion collection, semen evaluation, teasing and mare preparation, and insemination techniques.
Co-requisite/Prerequisite: ESCI 305
1 credit (2 laboratory hours), spring semester

ESCI 235 - FITTING AND MARKETING OF THE EQUINE
The fitting and marketing of various breeds of horses. Topics include records, pedigree evaluation. Actual experience in the sales preparation of horses and mechanics of sales operation through direct participation in annual fall college standardbred auction.
1 credit (3 laboratory hours), fall semester

ESCI 300 - INTERNSHIP IN EQUINE SCIENCE
Students work in an approved job in the equine industry in this internship. Comprehensive oral and written reports are required as well as an employer and staff evaluation. The student will give an oral presentation.
Prerequisite: Completion of one semester in Equine Science and approval/permission of staff
4 credits (12-week, 480-hour minimum), fall or spring semester

ESCI 305 – EQUINE REPRODUCTION AND BREEDING MANAGEMENT
Anatomy and Physiology related to the functional performance of the male and female reproductive systems. Processes involved with the formation of the sperm and ovum; estrous cycle of the horse; methods of semen collection and insemination. Breeding problems and the importance of selection and management are also emphasized. Basic Genetics applicable to the improvement of horses, color genetics and inherited abnormalities are covered.
Prerequisite: ESCI 110 with a C- or better, ESCI 130 or approval from instructor.
3 credits (2 lecture hours, 2 laboratory hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

ESCI 310 - APPLIED EQUINE NUTRITION
Review of basic nutrition principles. Application of theoretical principles of nutrition as applied to feeding groups of horses. Ration balancing for
different classes of horses combined with feeding trials to assess ration efficiency. Emphasis on feeding for growth and performance within economic parameters. Avoidance of metabolic and nutritional disorders. Discussion of nutrient metabolism and biochemistry of nutrition. Labs on ration balancing, group feeding, performance analysis relating to rations.

Prerequisites: ESCI 210 with a C or better, ESCI 110 with a C or better or permission of instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

ESCI 312 - EQUINE HEALTH AND LAMENESS
Emphasis on etiology, diagnosis and treatment of lameness. Metabolic, bacterial, viral, fungal and parasitic diseases of the horse.
Prerequisite: ESCI 110 with a C- or better or permission of instructor
3 credits (3 lecture hours), spring semester

ESCI 313 - LABORATORY IN EQUINE HEALTH AND LAMENESS
Application of the principles learned in Equine Health and Lameness to the health care of the college’s horse herd. Subjects covered will include routine vaccination and deworming, blood testing, dental care and lameness evaluation.
Prerequisite/co-requisite: ESCI 312
1 credit (2 laboratory hours), spring semester

ESCI 315 - EQUINE BUSINESS MANAGEMENT
Content will emphasize equine enterprise management. Topics to include equine inventories, measurement and cost determination of enterprise inputs, employer labor responsibilities, employee evaluation, contractual and billing procedures, insurance, facility evaluation and work reports.
Prerequisite or co-requisite: ERID-ESTB 300 or ESCI 320-340; AGBS 240 Farm Management and Finance
3 credits (3 lecture hours) fall semester

ESCI 320 - EQUINE YOUNG STOCK MANAGEMENT
This course provides hands-on and management skills needed by working equine farm managers. It will include such skill areas as weaning foals, young stock management, identification, record keeping and sales preparation of yearlings. The course will also deal with pre-breeding season techniques such as semen evaluation in stallions and photoperiod regulation in mares.
Prerequisites: ESCI 305 with a B or better, ESCI 225 with a B or better, and ERID 250 or ERID 240 with a B or better, or permission of the instructor.
1 credit (2 laboratory hours), fall semester

ESCI 325 – EQUINE REHABILITATION I
This course will provide an introduction to modalities in the field of equine physical rehabilitation. Common equine soft tissue and orthopedic conditions and injuries will be discussed along with the role of physical rehabilitation in the treatment of these conditions. Equine anatomy, biomechanics, and physical assessment with respect to physical rehabilitation will be presented.

Therapeutic modalities will be studied in conjunctions with observation, hands-on interaction and practical sessions. Current scientific research in the field of equine rehabilitation will be discussed. Students will be involved in the day to day management of horses and maintenance of facilities. Students will be evaluated on effectiveness, knowledge of therapies, work ethic, and communication skills.
Prerequisites: ESCI 312 and ESCI 313 with a B or better and one of the following: ERID 240 (Hunt Seat), ERID 250 (Western, Draft or Breeding section), ESTB 200 (STBD) or ESTB 210 (TB) with a B or better and permission of instructor.
4 credits (1 lecture hour, 3 laboratory hours), fall semester

ESCI 330 - FARRIER SCIENCE
This course is designed to teach students the science of trimming, shoeing and resetting shoes on a variety of horses, based on an understanding of the anatomy of the horse's hoof and lower leg structure. Students will learn to use a forge to make different shoes.
Prerequisite: ESCI 110, ESCI 130
2 credits (1 lecture hour, 3 laboratory hours), fall semester

ESCI 365 – EQUINE REHABILITATION II
This course is a continuation of ESCI 325. Physical rehabilitation modalities will be discussed in greater detail. Additional study of equine anatomy and conditions addressed by physical rehabilitation will be presented. Students will have hands-on involvement in implementing physical rehabilitations programs for the horses and observing the horses’ progress. Students will also develop client communication skills, provide assistance to underclassmen, and be involved in management of the facilities. Current research papers regarding physical rehabilitation will be discussed. Students will be required to give presentations on the use of physical rehabilitation modalities. Students will be evaluated on skills, effectiveness, leadership, work ethic, and communication skills. Presentations by students on the uses of therapies in equine rehabilitation/training may be required.
Prerequisites: ESCI 325 with a B or better and permission of instructor
Co-requisite: ESCI 410 Exercise Physiology
4 credits (1 lecture hour, 9 laboratory hours), Spring Semester

ESCI 340 - EQUINE PROMOTION AND SALES
This course is designed to provide students with the opportunity to get the “hands on” skills needed to prepare a horse for private or public sale. Discussions on the economics of public sales, bookkeeping procedures, forms needed, advertising, legal responsibilities of sales companies, buyer and owner interaction and auction variations among different breeds.
Prerequisites: ESCI 305, ESCI 130, ESCI 235
3 credits (1 lecture hour, 4 laboratory hours), fall semester

ESCI 400 - ADVANCED EQUINE REPRODUCTION AND STUD MANAGEMENT
This course is designed to provide an advanced level of management for breeding farm operations. It deals with the management of stallions, brood mares and foals and all related activities. A general knowledge of computers, record keeping, equine health, reproductive physiology and horse handling skills is needed prior to admittance.
Prerequisites: ESCI 340, ESCI 320, ESCI 310, ESCI 225, ESCI 312 and ESCI 110 all with a C or better.
4 credits (1 lecture hour, 9 laboratory hours), spring semester

ESCI 410 - EQUINE EXERCISE PHYSIOLOGY
This course will cover technology and methodology of conditioning horses used in sport. Emphasis will be placed on the state of fitness of the equine athlete and its effect on the bodily systems.
Prerequisites/co-requisite: ESTB 350, or ERID 350 or ESCI 325, and ESCI 312 and ESCI 110 all with a C or better.
2 credits (2 lecture hours), spring semester

ESCI 415 – EQUINE REHABILITATION III
This course will apply knowledge and skills developed during ESCI 325 and ESCI 365. Students will be involved with implementing physical rehabilitation programs for horses, documenting the horses’ progress as well as facility maintenance, equipment operation, budget development, ordering of supplies, billing, and client communication. Students will also assist students enrolled in ESCI 325/365. Current research papers regarding physical rehabilitation will be discussed. Students will be evaluated on skills, effectiveness, leadership, work ethic, and communication skills. Presentations by students on the uses of therapies in equine rehabilitation/training will be required.
Prerequisites: ESCI 365 with a B or better, and ESCI 410 with a C or better, and permission of instructor
4 credits (1 lecture hour, 9 laboratory hours), Fall Semester
ESCI 420 - EQUINE INTERNSHIP
A supervised field work program in a selected equine field. Students will carry out a planned program of educational experiences, under the direct supervision of an owner, manager, supervisor, or educator. This Internship must be pre-approved by an internship coordinator. Students and employers must submit weekly reports and evaluations while on internship. The student will be required to submit a written report and give an oral presentation. A student must complete 15 credit hours of academic study or the equivalent of supervised work (40 hours of supervised work is equal to one credit hour). A combination of academic study and work experience totaling 15 credit hours is acceptable. An international equine exchange program is acceptable and available in fulfilling this requirement. "Visiting student" status may be granted to students enrolled in other United States equine programs who wish to pursue an international exchange program.

Prerequisite: RREN 450 Internship Orientation
15 credits, (minimum 15 weeks minimum 40 hours/week)

EQUINE RACING MANAGEMENT

ESTB 100 - CARE AND TRAINING OF THE RACEHORSE I
Introductory course in horse racing, covering basic stable management, harnessing, tacking, jogging, feeding and conditioning of the race horse. Use and application of miscellaneous equipment. Breaking of the yearling and training of the 2-year-old.
5 credits (10 laboratory hours combined with lecture/recitation), fall semester

ESTB 101 - CARE AND TRAINING OF THE RACEHORSE II
Continuation of ESTB 100 Principles of shoeing, training, problem horses, gaiting problems. Train and condition horses in preparation for racing.
Prerequisite: ESTB 100 or permission of instructor
5 credits (15 laboratory hours combined with lecture/recitation), spring semester

ESTB 200 - HARNESS RACING
A continuation of ESTB 100 and ESTB 101. This course provides the actual hands-on experience of racing at county fairs and amateur events. Students condition and race college owned or privately owned horses.
Prerequisites: At least a B average in ESTB 100, ESTB 101 and an USTA driver's F-Q license, permission of the instructor
5 credits (one lecture hour, five two-hour laboratories), summer semester

ESTB 210 – ADVANCED EQUINE RACING
A continuation of ESTB 101. This course focuses upon topics relative to racing horses at pari-mutual racetracks in the United States. Students will have the opportunity to study rules of racing relative to starting, claiming, and placing of race horses. Students will also have the opportunity to study sales of weanlings, yearlings and 2-year-olds in training.
Prerequisite: ESTB 100 with a C or better
4 credits (lecture hour and 9 laboratory hours), fall semester

ESTB 220 – EQUINE RACING CAPSTONE
ESTB 220 is a capstone course designed to provide students in the equine racing management program with an opportunity to utilize and integrate concepts learned in the first three semesters of course work.
Prerequisite: ESTB 210 and permission of the instructor
4 credits (1 lecture hour and 9 laboratory hours), spring semester

ESTB 300 - ADVANCED EQUINE SPECIALIZATION I
Students will be assigned the enterprise of a two-horse stable. Management responsibilities include breaking of yearlings, shoeing, equipment and nutritional needs, owner correspondence and conditioning young standardbred or thoroughbred race horses. Students are evaluated on effectiveness and leadership, management skills, decision making skills, knowledge of specialization, work ethic, creativity and communication skills. Papers and presentations are required in theory portion. The theme for lecture topics will concentrate on horse psychology and training methodologies in the early training of the race horses.
Prerequisite: ESTB 210 and 220, with a minimum grade of B and permission of instructor
4 credits (1 lecture hour and 9 laboratory hours), fall semester

ESTB 350 - ADVANCED EQUINE SPECIALIZATION II
Students will be assigned to manage a four to five-horse race stable. Management duties expanded from ESTB 300 to include inventory, horse evaluations, billing, ordering supplies, budget development, and equipment operation. Students will train problem horses, fast-training trips. Evaluation procedures continued from ESTB 300. Theme for lecture session will be conditioning procedures, evaluating race fitness, exercise physiology and physiological profiling of the race horse.
Prerequisite: ESTB 300 with a B or better and permission of instructor
4 credits (1 lecture hour and 9 laboratory hours), fall semester

ESTB 400 - ADVANCED EQUINE SPECIALIZATION III
Students assigned management of a 10 to 12 horse race stable. Responsibilities will include the complete management, health, training, conditioning and racing of horses. Students will be evaluated on effectiveness of management and training responsibilities. The theme for the lecture portion will concentrate on effective management techniques.
Prerequisite: ESTB 350 with a B or better and permission of instructor
4 credits (1 lecture hour and 9 laboratory hours), spring semester

ENVIRONMENTAL TRAINING

ETC 101 - BASIC OPERATIONS OF WASTEWATER TREATMENT PLANTS
This course is designed to meet the requirements of New York state sanitary code part 650.4 relative to the training required to receive a New York state wastewater operator’s license. The course includes fundamental concepts of wastewater treatment, laboratory procedures in process control, operational strategies for various methods of treatment, personnel management, development of in-plant safety and equipment maintenance programs, and public relations.
4 credits (short course, 60 contact hours) scheduled 4 times yearly, TBA

ETC 102 - BASIC LABORATORY PROCEDURES FOR WASTEWATER TREATMENT FACILITIES
This course is designed to meet the requirements of New York state sanitary code part 650.4 relative to the training required to receive a New York state wastewater operator’s license. Topics covered include basic wastewater chemistry, an overview of the principles of chemistry and laboratory techniques and safety. The course is comprised primarily of laboratory exercises used to teach and provide practice with important laboratory tests and techniques.
Prerequisite: ETC 101
1 credit (short course, 24 contact hours) scheduled 4 times yearly, TBA
ETC 200 - ACTIVATED SLUDGE WASTEWATER TREATMENT - PRINCIPLES OF OPERATION
This course is designed to meet the requirements of New York state sanitary code part 650.4 relative to the training required to receive a New York state wastewater operator's license. The course includes an activated sludge process overview, modifications and variations, process control testing and calculations, nitrification, and process troubleshooting. Approximately half of the course is held at nearby treatment facilities.
Prerequisite: ETC 101
1 credit, (short course, 24 contact hours), scheduled 5 times yearly, TBA

ETC 210 - BASIC SUPERVISION AT WASTEWATER TREATMENT FACILITIES
This course is designed to meet the requirements of New York state sanitary code part 650.4 relative to the training required to receive a New York state wastewater operator's license. Topics covered include training skills, safety and health programs, budgeting, supervisory management, and public relations. The course is comprised primarily of group exercises used to teach and allow practice with vital supervisory skills and techniques.
Prerequisite: ETC 101
3 credits (short course, 30 contact hours) scheduled 2 times yearly, TBA

ETC 300 - ADVANCED OPERATION OF WASTEWATER TREATMENT FACILITIES
This course is designed to meet the requirements of New York state sanitary code part 650.4 relative to the training required to receive a New York state wastewater operator's license. Topics covered include residuals handling and beneficial reuse, effluent toxicity, comprehensive plant evaluation and troubleshooting, treatment plant design and construction, tertiary treatment and other advanced operations topics.
Prerequisites: ETC 101, ETC 102, ETC 200 and ETC 210
2 credits (short course, 30 contact hours), scheduled 2 times yearly, TBA

FOOD SERVICE ADMINISTRATION
FSAD 100 - GLOBAL AND ETHNIC FOODS
Presents food and cultural topics to Food majors and Travel and Tourism students. Lecture and laboratory sections will allow students to investigate sources of information and achieve hands-on experience with ethnic foods. Students will gain an appreciation of the importance of various foods in the tourism industry. $45.00 lab fee.
3 credits (1 lecture hour/week, 4 lab hours/week), fall semester

FSAD 101 - QUANTITY FOOD PREPARATION AND SERVICE
An introduction to basic procedures and techniques for quantity food preparation as well as institutional food service equipment (use and maintenance). Also includes sanitation and math competency.
3 credits (1 lecture hour, 3 laboratory hours, 15 hours volume food service), fall semester

FSAD 102 - CERTIFICATION OF APPLIED FOOD SERVICE
A comprehensive course in food service sanitation designed to lead to national certification as a food service handler by the Education Foundation of the National Restaurant Association.
1 credit (15 lecture hours per semester), fall semester

FSAD 153 - FUNDAMENTALS OF HOSPITALITY MANAGEMENT
Basic management theories and principles common to all types of hospitality operations. Organization and management, the management process, leadership, objectives, policies and ethics, communications and discipline. Case studies and critical review of current management literature.
3 credits (3 lecture hours), spring semester

FSAD 154 - EQUIPMENT SELECTION AND LAYOUT
Analysis of factors for selection of equipment according to type of food service, comparative evaluation of equipment, purchase specifications. Each student develops a prospectus for a given food service operation and makes a schematic layout.
3 credits, spring semester

FSAD 200 - INTERNSHIP IN CUSTOMER SERVICE
Customer service laboratory experience in conjunction with state or national hospitality operations. A field based experience providing food service administration, restaurant management, and travel/tourism majors an opportunity to apply their knowledge in a customer service environment. Student experience supervised by faculty.
3 credits, fall semester

FSAD 201 - SUMMER COOPERATIVE EMPLOYMENT
Summer work in an approved job in the food service industry, preferably in the area of specialization. Comprehensive written report required at the end of the work period. Work is evaluated by the college and employers.
2 credits, fall semester

FSAD 203 - MANAGEMENT II (PERSONNEL RELATIONS)
Procurement and placement, improvement of performance, supervision, remuneration, security, personnel management and the future. Case studies and conference leadership sessions required.
3 credits (3 lecture hours), fall semester

FSAD 205 - FOOD AND BEVERAGE MERCHANDISING AND MANAGEMENT
Students learn principles of motivating personnel, merchandising products and advertising of various types of food service units, meal management techniques involving menu planning, recipe development, staffing, training, safety, purchasing and production. Student projects involve producing an actual menu form which integrates knowledge gained in a laboratory setting.
4 credits (1 lecture hour, 6 laboratory hours), fall semester

FSAD 222 – CERTIFICATION IN FOOD SAFETY MANAGEMENT
A comprehensive course in food safety management, designed to lead to national certification as a food safety manager by a nationally accredited program approved by the Conference for Food Protection, Certified Professional Food Manager from Prometric. Open to off-campus students only.
Pre/co requisite: FSAD 102 or permission of the instructor.
1 credit (15 lecture hours), spring, summer, winter or fall semesters

FSAD 255 - FOOD PURCHASING AND COST CONTROL
Instruction in determining food products specifications, understanding distribution systems, supplier selection, specifications, and product knowledge. Also includes purchasing and inventory principles, as well as cost control.
Prerequisites: FSAD 101
4 credits (2 lecture hours, 2 hours recitation), fall semester
FSAD 256 - INDUSTRIAL RELATIONS
Management of people at work, the dimensions of labor management and responsibilities. Labor-management relations. Role playing in collective bargaining, internal and external union functioning.
3 credits (3 lecture hours), spring semester

FSAD 257 - SENIOR SEMINAR
Prepares students for entry into professional management. Portfolio development, videotaped interviewing, discussion of technology and service strategies with experts from the industry, analysis and discussion of current trends are topics covered.
1 credit (1 lecture hour), spring semester

FSAD 258 - RESTAURANT MANAGEMENT AND OPERATIONS
A comprehensive course in restaurant management, designed to show the importance of an actual, operational food-service unit including organization, planning, leading, directing, (supervising) and measuring products and people, with applied emphasis on food purchasing, cost control, food preparation and customer service, merchandising, menu planning, advertising, and managerial decision making.
Prerequisites: FSAD 101 or CUL 101, FSAD 102 or instructor’s permission.
6 credits (1 lecture hour and 12 laboratory hours), spring semester

FSAD 259 - INTRODUCTION TO CATERING
A basic course in catering whose purpose is to supply what is needed for the planning and executing of functions on given dates and at specific locations where food is of prime importance. The entire management of an event, including menu preparation, scheduling workers (fellow students), merchandising, purchasing of materials (food & non-food items), and cost control. A true “hands-on” and involved course—customer driven.
3 credits (1 lecture hour, 2 laboratory hours)

FSAD 292 – PROFESSIONAL FOOD SERVICE MANAGEMENT CERTIFICATION
A comprehensive course in Professional Food Service Management Certification. This course reviews all aspects of managing a foodservice operation including customer service, food safety, restaurant math, purchasing, inventory control, beverage control, human resources, food production and service management, menu design and analysis, food service accounting and financial management. Designed to lead to national certification as a Professional food service manager by a nationally accredited program approved by the Conference for Food Protection, Certified Professional Food Manager from Prometric. Open to off-campus students only.
Pre/co-requisite: FSAD 102 or permission of instructor
1 credit (15 lecture hours), fall, spring, summer, winter semesters

FSAD 293 – HAZARD ANALYSIS CRITICAL CONTROL POINTS (HACCP) MANAGEMENT
A comprehensive course focusing on HACCP, the management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product. This class is a national certification course leading to Certified HACCP manager as defined by The National Sanitation Foundation, Conference for Food Protection and Prometric.
Pre/co requisite: FSAD 102, or FSAD 222, or permission of instructor
Open to off-campus students only.
2 credits, (30 lecture hours), fall, spring, summer, winter semesters

GENERAL EDUCATION
GNED 100 - FIRST YEAR EXPERIENCE
A survey of factors leading to academic success including the transition from home to college life, attitude structures, learning techniques, and skill development.
2 credits

GNED 101 - SPEED READING
Concentration on improving rate while maintaining or improving comprehension, through tachistoscopic and controlled reading. Fifteen sessions over a five-week period. Offered three times each semester.
1 credit (15 contact hours), graded S/F

GNED 102 - PRACTICAL STUDY SKILLS
Instruction and practice in study skills. The emphasis is on thinking about time management, reading texts, mnemonics, note taking, test taking, use of the library, and writing research papers.
1 credit, (15 contact hours, 5-week course), graded S/F

GNED 103 - READING COMPREHENSION
Introduces the student to the importance of reading and ways to understand the reading process. Emphasis is on the use of literal, interpretive and critical skills.
1 credit (15 contact hours, 5-week course), graded S/F

GNED 104 - BASIC RESEARCH METHODS
A course designed to provide lifelong skills that will enable students to become confident, independent library users and will enable them to use these same skills in locating and evaluating information outside of the library environment. Students will learn to search for information using both traditional print resources and innovative electronic sources such as the computerized catalog, CD-ROM indexes, on-line databases, and the Internet/World Wide Web.
1 credit (15 contact hours, 150 minutes for 5 weeks, lecture, recitation, laboratory), fall semester

GNED 105 - SKILLS FOR THE ADULT RETURNING STUDENT
Designed to meet the special needs of adult returning students. Deals with those factors which contribute to a successful academic experience. Topics will include the timing and sources of information, on programs and classes, building support systems (personally, academically, non-academically, and through scheduling), expectations of faculty and students and being acknowledged as adult students.
1 credit, (15 contact hours, 5-week course), graded S/F

GNED 110 - COLLEGE AND CAREER PLANNING SKILLS
A group learning experience to assist students in maximizing their success. Through a variety of learning modes this course will address reasons for going to college, staying in college, academic and personal coping skills, curriculum and career choice, factors affecting success in college and occupational settings, techniques for self-exploration, sources of personal/educational/career information, and decision-making skills as they relate to personal planning.
1 credit (15 contact hours, 5-week course), graded S/F

GNED 111 - COLLEGE SKILLS FOR MATURE ADULTS
Instruction and practice in the reading, mathematical and study skills needed by college students. Emphasis on improving speed and comprehension in reading, mastering basic mathematical skills, and improving skills in reading textbooks and taking lecture notes. For adults who have been out of school for some time.
3 credits (3 lecture hours)
GNED 112 - COMMUNICATION SKILLS FOR LEADERSHIP DEVELOPMENT (R.A. CLASS)
Basic interpersonal communication experience with practical application to leadership concepts and functions. Leadership concepts, communication skills, problem solving techniques, management of time, assertiveness and confrontation techniques, conflict resolution techniques, program planning techniques and referral resources. Didactic and experiential instruction techniques, with heavy emphasis on experiential activities.
Limited to Resident Assistants.
1 credit (S/F option), 10-week class

GNED 115 - MEDICAL TERMINOLOGY
Correlation with anatomical systems. Suffixes, prefixes, roots, stems. Use of medical dictionaries, filing and preserving records.
3 credits

GNED 120 – COLLEGE SUCCESS FOR CONTINUING STUDENTS
This course is designed to train students to become peer tutors. It introduces students to the theory and practice of tutoring. Such topics as the definition of tutoring, tutor responsibilities, basic tutoring guidelines, techniques for beginning and ending a session, learning theory, handling difficult students, role modeling, goal setting and planning, communication skills, active listening and paraphrasing, referral skills, study skills, critical thinking skills, ethics, and problem solving skills will be covered. Satisfactory completion of this course meets the tutor training requirements for the College Reading and Learning Association (CRLA) Level I Peer Tutor Certification.
Pre-requisite: Permission of instructor or dean only.
3 credits. (3 lecture hours) fall or spring

GNED 203 - PEER TUTOR TRAINING I
This course is designed to train students to become peer tutors. It introduces students to the theory and practice of tutoring. Such topics as the definition of tutoring, tutor responsibilities, basic tutoring guidelines, techniques for beginning and ending a session, learning theory, handling difficult students, role modeling, goal setting and planning, communication skills, active listening and paraphrasing, referral skills, study skills, critical thinking skills, ethics, and problem solving skills will be covered. Satisfactory completion of this course meets the tutor training requirements for the College Reading and Learning Association (CRLA) Level I Peer Tutor Certification.
Pre-requisite: Completion of 12 college-level credits, grade of 'B' or better in course(s) to be tutored, and permission of instructor.
1 credit (15 week hybrid course), fall and spring semesters

GNED 204-PEER TUTOR TRAINING II
A continuation of GNED203, this course provides additional training to students who want to continue to develop their peer tutoring skills. The course will begin with a review of GNED 201 training topics and then proceed to the exploration of questioning skills, brain dominance learning, cultural awareness and inter-cultural communications/diversity, identifying and using resources, tutoring in specific skill/subject areas, and assessing or changing study behaviors. Satisfactory completion of this course meets the tutor training requirements for the College Reading and Learning Association (CRLA) Level II Peer Tutor Certification.
Pre-requisite: minimum of C in GNED 203 and permission of instructor.
1 credit (15 week hybrid course), fall and spring semesters

GEOGRAPHY
GEOG 101 – AN INTRODUCTION TO WORLD REGIONAL GEOGRAPHY
This course introduces basic geographical concepts and an overview of the geography of the world. Students examine the world’s major cultural regions, with emphasis on geographical aspects of contemporary economic, environmental, social and political relationships with the physical environment. Broader themes include connections among local and global ways of life in various world regions and the persistence of traditional cultures in the face of increasing socioeconomic and political interdependency.
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Other World Civilization.

HISTORY
HIST 101 – UNITED STATES HISTORY TO 1800
This course is a survey of American history from its beginnings through the colonial, revolutionary and into the early national period, with emphasis on the development of our political, constitutional, economic, social and cultural institutions.
3 credits (3 lecture hours) fall and spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for American History.
Students may not receive credit for both SOCS 101 and HIST 101

HIST 102 – UNITED STATES HISTORY FROM 1800 TO 1900
This course is a survey of American history from the Jeffersonian Era to the Era of Good Feeling, the Reform Movement, the Old South and Slavery, the Civil war and Reconstruction and ending with the rise of the Industrializing Age, with emphasis on the development of our political, constitutional, economic, social and cultural institutions.
3 credits (3 lecture hours) fall and spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for American History.
Students may not receive credit for both SOCS 101 and HIST 102
Students may not receive credit for both SOCS 102 and HIST 102

HIST 103 – UNITED STATES HISTORY FROM 1900 TO THE PRESENT
This course is a survey of American History from the Progressive Era through Great Depression, the two World Wars, the Cold War, the social political and cultural changes of the 60’s and 70’s and into Reagan and the post Reagan Era, with emphasis on the development of our political, constitutional, economic, social and cultural institutions.
3 credits (3 lecture hours) fall and spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for American History.
Students may not receive credit for both SOCS 102 and HIST 103

HIST 151 – WORLD HISTORY TO 1600
This course is an introductory survey of Ancient World History to 1600 C.E. It explores how human societies developed an increasingly complex set of socio-economic and political systems in response to physical and cultural challenges. It begins with the development of agriculture as a key event and then focuses on the nature of early world civilizations. The course then studies the civilizations of representative cultures from all areas of the world including the Americas, Africa, East and South Asia, the Middle East, and Europe, demonstrating the way each society addressed key problems through its economic, political, and religious institutions.
3 credits (3 lecture hours) fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Other World Civilization.
Students may not receive credit for both SOCS 103 and HIST 151
HIST 152 – WORLD HISTORY FROM 1500
This course is an introductory survey of Modern World History from 1500 C.E. It explores the development and collapse of the great early modern empires. It then focuses upon political and economic modernization in Western Europe and the impact of that modernization on representative non-European societies between 1800 and 1945 including those in the Americas, Africa, East and South Asia, the Middle East, and Europe. Finally, the course highlights some of the issues faced by post-WWII non-European societies seeking to modernize in the shadow of Cold War conflict.

3 credits (3 lecture hours) spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Other World Civilization.
Students may not receive credit for both SOCS 104 and HIST 152

HIST 161 – EUROPEAN HISTORY TO 1648
This course is an introductory survey of European History to 1648. It explores the key institutions of Western culture beginning with its origins in the Mediterranean region. The course focuses on the development of Western civilization into a set of competing states and the political, economic, and intellectual/religious institutions that bound these states together into a common civilization.

3 credits (3 lecture hours) Fall Semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Western Civilization.

HIST 162 – EUROPEAN HISTORY FROM 1500
This course is an introductory survey of European History from 1500. It explores the development of a unique modern culture in Western Europe between 1500 and 1850 and the impact of this culture upon the world in the late 19th and early 20th Centuries. The course also discusses the Russian alternative to modern Western culture and how the two societies came into conflict during the Cold War in the late 20th Century. The course ends by describing the Cold War conflict and its legacy in the 21st Century.

3 credits (3 lecture hours) spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Western Civilization.
Students may not receive credit for both SOCS 103 and HIST 161

HIST 171 - ENVIRONMENTAL HISTORY
A world history of human action and interaction in the natural world. Explains changing populations, technological and economic developments in geographical and ecological terms. Attention given to the history of religious and philosophical ideas concerning the place of humans in nature. Also considered is the history of modern environmental ideas concerning the human impact on the environment.

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Western Civilization.

HIST 172 – LATIN AMERICAN AND CARIBBEAN HISTORY
This course surveys the broad sweep of Latin American and Caribbean history from Amerindian cultures before Columbus to the 21st century. The volatility of the multi-cultural societies of these lands, spilling over sometimes into fratricide violence and brilliant creativity, will be a recurrent theme. Emphasis may vary between key personalities, social change, culture, conflict or gender. Students will be exposed to the main themes of Latin American and Caribbean history.

3 credits (3 lecture hours) fall or spring
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Other World Civilization.

HIST 181- HISTORY OF TECHNOLOGY TO 1800
This course is a general survey of the history of technology from pre-historic times up to the Industrial Revolution. The course focuses on technology as a means to solve human problems, real or perceived, and the unexpected and unintended side-effects of technology in such areas as: agriculture, energy, communications, navigation, construction, and transportation.

3 credits (3 lecture hours), Fall
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Other World Civilization.

HIST 182- HISTORY OF TECHNOLOGY FROM 1750
This course is a general survey of the history of technology from the Industrial Revolution to the present. The course focuses on technology as a means to solve human problems, real or perceived, and the unexpected and unintended side-effects of technology in such areas as: energy, communications, economics, health care, and transportation.

3 credits (3 lecture hours), Spring
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Western Civilization.

HIST 220 - AFRICAN AMERICAN HISTORY
This course will focus on tracing African American history from its African origin through the experience of slavery to the present condition in the United States. Some of the objectives will be: to explore the rich African traditions and culture that were in place before slavery; to provide the analytical tools necessary to fully appreciate the Black struggle in its various dimensions; to critically assess the contributions of African Americans to American society from an economic, political and social viewpoint.

Prerequisite: HIST 101, 102, or 103
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for American History.

HIST 221 – HISTORY OF THE VIETNAM WAR
Analysis and survey of the history, personalities and events that lead to United States involvement in Vietnam from 1945 to the present. The course is an overview of early Vietnamese history and its impact on the twentieth century French and American wars in Indochina. It will seek to answer the questions: why was the US in Vietnam? What was accomplished? What are the lessons of Vietnam?

Prerequisite: Any 100-level HIST course, or permission of Instructor
3 credits (3 lecture hours) fall or Spring Semester
This course satisfies the Liberal Arts and Sciences requirement.

HIST 225 - WOMEN IN THE UNITED STATES
This course will explore and analyze the role of women in the U.S. from 1607 to the present. It will critically assess women’s experiences and contributions to our nation—politically, socially, economically, and culturally using the tools of social science and historical analysis.

Prerequisite: HIST 101, 102, 103 or SOCI 101
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for American History.

HIST 251 - TOPICS IN 20TH CENTURY WORLD HISTORY
An in-depth treatment of world history since 1914. Topics will include: the dynamic character of Western civilization and the West’s impact on the world; world war, revolution, colonialism and anti-colonial reaction. Attention will focus on the post-World War II era involving the economic and political aspects of the “Cold War” and its aftermath. Attention also
will be given to dominant social, cultural, and technological characteristics of the twentieth century.

Prerequisites: Any 100-level HIST course, or permission of instructor.

**3 credits (3 lecture hours)**, fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement.

**HORT 100 - INTRODUCTION TO HORTICULTURE**

A dual-credit course with designated high schools to acquaint selected high school students with horticulture basics such as: plant processes, function, reproduction, and growth. Lab activities include plant propagation and greenhouse growing of various ornamental plants. Lectures will review career opportunities in a wide range of horticultural professions.

**3 credits (2 lecture hours, 1 recitation hour)**, fall semester

**HORT 101 - PLANT MATERIALS**

The identification and landscape characteristics of woody plants commonly found in landscapes of Northeastern United States. Part of each weeks labs include an outdoor plant walk to view various specimens in the landscape.

**3 credits (2 lecture hours, 2 laboratory hours)**, fall semester

**HORT 102 - FLORAL DESIGN I**

Introduction to the principles, elements, and basic construction techniques of commercial floral design. Hands-on labs include: corsages, bud vases, assorted arrangements, dried flowers, wreaths, and holiday designs.

**2 credits (1 lecture hour, 2 laboratory hours)**, spring semester

**HORT 103 - LANDSCAPE PLANNING AND DESIGN I**

This is an introduction to the design process, principles and vocabulary used in landscape architecture. The course content addresses landscape planning and design specifically as it applies to residential site design. Students gain creative problem-solving skills and explore effective methods of graphic, written and oral communication in a series of design projects. The seminar culminates in a final design project in which students develop a landscape design solution for an actual residential site.

**3 credits (2 lecture hours, 2 laboratory hours)**, fall semester

**HORT 104 - HERBACEOUS PLANT MATERIALS**

Identification, culture, and landscape use of annuals, perennials, and flowering shrubs. Emphasis on design considerations for containers, hanging baskets, floral displays, and border plantings.

**3 credits (2 lecture hours, 2 laboratory hours)**, spring semester

**HORT 105 - LANDSCAPE PLANNING AND DESIGN II**

This is a sequential course to Landscape Planning and Design I with emphasis on advanced landscape design skills and techniques. The course is organized around several studio design projects that vary in context, complexity, and scale. Students continue to apply the phases of the planning and design process and to strengthen their design knowledge, graphics, and communication skills. Fieldwork and field trips are required.

**Prerequisite: HORT 103 or permission of the instructor**

**3 credits (2 lecture hours, 2 laboratory hours)**, fall semester

**HORT 106 - FLORAL DESIGN**

A general overview of the sympathy flower industry. Topics will include: consultation, sales, traditions, and servicing funeral orders. Casket sprays, standing sprays, baskets, vases, and more will be featured in lab.

**3 credits (2 lecture hours, 2 laboratory hours)**, spring semester

**HORT 107 - LANDSCAPE AND TURF MANAGEMENT**

This course addresses the principles and practices of landscape and turf installation, maintenance and management. The lectures focus on a wide range of topics such as the value of landscape management, the landscape industry, starting your own business, project site analysis, site preparation, landscape and turf installation, turf grass species, and landscape maintenance. Lab activities are organized around hands-on campus and community landscape projects that include planting, pruning, pest and weed control, fertilization, turf establishment or renovation.

**3 credits (2 lecture hours, 2 laboratory hours)**, fall semester

**HORT 108 - HERBACEOUS PLANT MATERIALS**

Identification, culture, and landscape use of annuals, perennials, and tropical foliage plants. Emphasis on plants that are commercially common to the Northeast.

**2 credits (1 lecture hour, 2 lab hours)**, spring semester

**HORT 109 - LANDSCAPE AND TURF MANAGEMENT**

This course addresses the principles and practices of landscape and turf installation, maintenance and management. The lectures focus on a wide range of topics such as the value of landscape management, the landscape industry, starting your own business, project site analysis, site preparation, landscape and turf installation, turf grass species, and landscape maintenance. Lab activities are organized around hands-on campus and community landscape projects that include planting, pruning, pest and weed control, fertilization, turf establishment or renovation.

**3 credits (2 lecture hours, 2 laboratory hours)**, fall semester

**HORT 110 - HORTICULTURE PRACTICES I**

Horticulture Practices is an on-going series of courses designed to engage students in a wide range of horticulture practices. These practices include methods acceptable by both commercial and research sectors of the Green Industry. HORT 110 is a freshman-level course that introduces students to basic science, production procedures, and entrepreneurial skills of horticulture.

**2 credits (1 lecture hour, 2 laboratory hours)**, fall semester

**HORT 111 - HORTICULTURE PRACTICES II**

Horticulture Practices is an on-going series of courses designed to engage students in a wide range of horticulture practices. These practices include methods acceptable by both commercial and research sectors of the Green Industry. HORT 111 is a freshman-level course that introduces students to...
basic science, production procedures, and entrepreneurial skills of horticulture.

**HORT 112 - INTRODUCTION TO HORTICULTURAL SCIENCE**

This course is organized to cover a broad range of topics about the principles and practices of horticultural science. These topics focus on the fundamentals of horticulture in terms of plant science, the culture of outdoor and indoor plants, and the industries within the field of horticulture. In addition to the two lectures per week, students will be involved in several hands-on horticultural practices during a weekly two-hour lab at the greenhouse.

**3 credits (2 lecture hours, 2 laboratory hours), spring semester**

**HORT 150 - FRUIT AND VEGETABLE PRODUCTION**

This course will cover the biology of fruits and vegetables. Emphasis will be placed on introducing students to soils, nutrition, types of fruits and vegetables, site selection, planting, fruit and vegetable quality factors, pests, Integrated Pest Management (IPM) strategies, horticultural production practices, marketing strategies, and career opportunities. Students will gain a greater understanding of fruit and vegetable production industry, an increased knowledge of the variety of vegetables, and knowledge of the specific cultural needs of the common vegetable species. Emphasis will be on learning by doing.

**3 credits (2 lecture hours, 2 lab hours) spring semester**

**HORT 200 - GREENHOUSE MANAGEMENT**

Lecture topics include greenhouse and nursery design, construction, structure, machinery, production methods, and operation. Laboratory exercises will include soil, media, nutrition, plant growth modification, and the identification and control of pests. Students are expected to grow a variety of commercial floriculture crops, including poinsettia. Participation in outdoor activities associated with field and container production of trees and shrubs is required.

**3 credits (2 lecture hours, 2 lab hours), fall semester**

**HORT 201 - PLANT PROPAGATION**

Theoretical and technical practices in propagation of plants by sexual and asexual methods. Topics include division and separation, layering, grafting, budding, cuttings, micropropagation, and seed propagation.

**Pre-requisite: BIOL 102 or permission of instructor**

**3 credits (2 lecture hours, 2 laboratory hours), fall semester**

**HORT 202 - GREENHOUSE PRODUCTION**

A greenhouse crop growing course. Lecture topics include crop scheduling, propagation, cultural procedures, pest/disease identification and control, and plant marketing. All major and minor ornamental crops common to commercial greenhouses will be discussed. Lab crop assignments will emphasize growing Easter lilies, pot mums, and bedding plants.

**3 credits (2 lecture hours, 2 laboratory hours), spring semester**

**HORT 204 - HORTICULTURE BUSINESS MANAGEMENT**

This course will focus on establishing and operating a small horticultural business. Topics to be covered include, getting a business started, laws and legal issues, marketing and advertising, professional selling, buying, pricing, wholesale sales, retail sales, financing, and ownership. Individual special units will focus on florist, nursery, greenhouse, and garden center issues. Students will be expected to participate in Horticulture Department entrepreneurial activities.

**3 credits (2 lecture hours, 2 laboratory hours), spring semester**

**HORT 210 - HORTICULTURE PRACTICES II**

Horticulture Practices is an on-going series of courses designed to engage students in a wide range of horticulture practices. These practices include methods acceptable by both commercial and research sectors of the Green Industry. HORT 210 is a sophomore-level course which continues to introduce students to the basics while adding advanced production skills and technology. The level of students' crop and entrepreneurial responsibilities will also increase.

**2 credits (1 lecture hour, 2 laboratory hours), spring semester**

**HORT 211 - HORTICULTURE PRACTICES II**

Horticulture Practices is an on-going series of courses designed to engage students in a wide range of horticulture practices. These practices include methods acceptable by both commercial and research sectors of the Green Industry. HORT 211 is a sophomore-level course which continues to introduce students to the basics while adding advanced production skills and technology. The level of students' crop and entrepreneurial responsibilities will also increase.

**2 credits (1 lecture hour, 2 laboratory hours), spring semester**

**HORT 240 - LANDCADD**

In this course students gain a basic proficiency in computer-aided drafting and design skills. The course covers software programs commonly used by professionals in the design fields such as AutoCAD, Google SketchUp, and Adobe Design Suite. Students are expected to apply this technical knowledge as a design tool in a series of projects that range in type & scale.

**Prerequisites: CAD 181 or permission of the instructor**

**3 credits (2 lecture hours, 2 laboratory hours), spring semester**

**HORT 241 – PLANT PROTECTION**

HORT 241 is an interdisciplinary introduction to the study of pest management. Ecological, biological, and economic principles will be examined from each of the following disciplines: Entomology, nematology, plant pathology, and weed science. Reasons and principles for establishing pest management programs will be discussed.

**Prerequisite: BIOL 102 or permission of instructor**

**3 credits (2 lecture hours, 2 laboratory hours), spring semester**

**HORT 245 - LANDSCAPE ARCHITECTURAL DESIGN**

Conducted in a studio format, this capstone course is designed as a sequence of projects in which students apply and reinforce some of the most fundamental skills required in landscape architecture. Students are challenged and expected to expand their capacity for abstract & analytical thinking as it relates to the relationship of mass and space. A main focus is on translation of 2D compositions into 3D volumes. The projects will vary in scale and context to cover research, abstract and analytical thinking, aesthetic appreciation, drawing, design, and model making. Fieldwork and field trips may be required.

**Prerequisites: HORT 103, HORT 105, or permission of instructor**

**3 credits (2 lecture hours, 2 laboratory hours), spring semester**

**HORT 250 - HORTICULTURE/LANDSCAPE INTERNSHIP**

The 160-hr internship provides the student with experience in an approved job in the horticulture industry. Final requirements include; a summary report oral presentation and employer and faculty evaluations.

**Prerequisites: Completion of one semester and permission of instructor**

**4 credits (160 hours of supervised employment), fall or spring semester**
HORT 310 – HORTICULTURE PRACTICES III
 Horticulture Practices is an on-going group of courses that is designed to introduce, educate, and reinforce a wide range of horticultural practices. These practices include methods acceptable by both commercial and research sectors of the Green Industry. The goal of this course is to develop a broad base of horticultural skills and knowledge. Students will continue to develop mastery of basic skills while assuming managerial responsibilities of horticulture institute, horticulture students, and departmental projects. Advanced technology and skills will be added with each semester and credit hour.
 Prerequisites: HORT 110, HORT 210, or permission of instructor
 2 credits (2 lecture hours), fall semester

HORT 311 – HORTICULTURE PRACTICES III
 Horticulture Practices is an on-going group of courses that is designed to introduce, educate, and reinforce a wide range of horticultural practices. These practices include methods acceptable by both commercial and research sectors of the Green Industry. The goal of this course is to develop a broad base of horticultural skills and knowledge. Students will continue to develop mastery of basic skills while assuming managerial responsibilities of horticulture institute, horticulture students, and departmental projects. Advanced technology and skills will be added with each semester and credit hour.
 Prerequisites: HORT 111, HORT 211, or permission of instructor
 2 credits (2 lecture hours), spring semester

HORT 320 – HORTICULTURE INTERNSHIP ORIENTATION
 Horticulture Internship Orientation prepares students for a horticulture industry internship and assist them with the process of employment and career development. The course helps students meet internship requirements such as goal definition, industry sponsor identification, job application and report writing. It formalizes internship planning and preparation to ensure that internships are conducted in a professional manner, follow guidelines, and satisfy the goals and objectives of students, faculty advisors, and industry sponsors.
 Prerequisite: Junior status or permission of instructor
 1 credit (1 lecture hour), fall or spring semester

HORT 400 – HORTICULTURE PRODUCTION MANAGEMENT
 Horticulture Production Management provides a solid grounding for managing a wholesale nursery. Nutritional, IPM, chemical, physical, biological, and economic principles and practices will be emphasized.
 Prerequisites: BIOL 102, HORT 200, HORT 201, and HORT 202 or permission of instructor
 3 credits (2 lecture hours, 2 laboratory hours), fall semester

HORT 403 – PLANTING DESIGN
 This course addresses the theory and practices of the landscape planting design process. Topics will be covered in lectures using textbook readings, Power Point presentations, and class discussions. The lab component is designed as a sequence of both studio and outdoor projects which will involve the student in applying the knowledge gained from the lectures and readings. The projects vary in type and scale to cover client relationships, site study, aesthetic, functional, and ecological plant uses, plant selection criteria, design process and vocabulary, design principles & elements, design graphic tools & techniques, planting plan drawings and models. A basic understanding of design, drafting and ornamental horticulture is needed to complete the assignments for the class. A semester-long sketchbook assignment and a design portfolio documenting student’s projects and creative process are required.
 Prerequisites: HORT 101, 103, or permission of instructor
 4 credits (2 lecture hours, 4 lab hours/week), fall semester

HORT 410 – HORTICULTURE PRACTICES IV
 Horticulture Practices is an on-going group of courses that is designed to introduce, educate, and reinforce a wide range of horticultural practices. These practices include methods acceptable by both commercial and research sectors of the Green Industry. Horticulture 410 students are expected to direct a wide range of activities performed by underclassmen in various horticultural disciplines. Advanced technology, skills, and responsibilities will be added with each semester and credit hour.
 Prerequisites: HORT 110, HORT 210, HORT 310, or permission of instructor
 2 credits (2 lecture hours), fall semester

HORT 411 – HORTICULTURE PRACTICES IV
 Horticulture Practices is an on-going group of courses that is designed to introduce, educate, and reinforce a wide range of horticultural practices. These practices include methods acceptable by both commercial and research sectors of the Green Industry. Horticulture 411 students are expected to direct a wide range of activities performed by underclassmen in various horticultural disciplines. Advanced technology, skills, and responsibilities will be added with each semester and credit hour.
 Prerequisites: HORT 111, HORT 211, HORT 311, or permission of instructor
 2 credits (1 lecture hour or 2 laboratory hours), spring semester

HORT 420 – HORTICULTURE INTERNSHIP
 Horticulture Internship is a 200 hour supervised, professional experience appropriate to a professional position in the horticulture field. Students will be involved in a wide range of on-the-job work experiences in their chosen career field. Final requirements include: portfolio, journal, supervisor evaluation, summary report and oral presentation.
 Prerequisite: HORT 320 or permission of instructor
 5 credits (200 hours of supervised internship employment)

HORT 430 – HORTICULTURE BUSINESS DEVELOPMENT
 Horticulture Business Development is the capstone course of the Horticultural Business Management BT curriculum. This course is designed to combine horticultural and business knowledge that has been presented during the previous three years. Special emphasis will be placed on the link between product development, branding, and sales. Current green industry trends will be closely examined with case studies and profiles of successful horticulture entrepreneurs.
 Prerequisite: Senior status or permission of instructor
 3 credits (3 lecture hours per week), spring semester

HORT 440 – HORTICULTURE BUSINESS INTERNSHIP
 This required internship is a supervised, professional experience appropriate for an entry-level position in a horticultural business or related field. Prior to the start of the internship the student must develop and submit an internship proposal that includes contact information, job description, goals, objectives, activities, and outcomes for the internship. The student, sponsor and faculty advisor must agree to the written plan in a signed contract. The on-site experience is about 15 weeks or 600 hours in length. In addition to agency supervision, each intern is advised and monitored by a faculty advisor on a regular basis. Final course requirements include: portfolio, journal, interim reports, mid-term assessment, supervisor evaluation, summary report and oral presentation.
 Prerequisites: HORT 320 Horticulture Internship Orientation; Min. 2.0 GPA; Permission of the instructor
 15 credits, (600 hours of supervised internship employment), fall or spring semester

*This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.*
HUMANITIES

HUMN 210 - THE FILM EXPERIENCE  
(FORMERLY ENGL 240)  
This is an introductory course on films with emphasis on film both as an art form and as a shaper of social values. Viewing of key full-length dramatic features, experimental and other short films with related discussions, lecture and independent investigation.

Prerequisite: C or better in COMP 101

3 credits (3 lecture hours), offered on a rotating basis  
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for the Arts.

HUMN 220 - INTRODUCTION TO ISLAM  
(FORMERLY HUMN 211)  
This course examines the way of life known as Islam. Students are introduced to cultural and religious aspects of life for more than one billion Muslims and Islamic principles of faith and practice, the Quran, Muslim cultural traditions and religious laws. Students will also explore the lifestyles of women, polygamy, the representation of Muslims in the media and shared similarities of Islam with Christianity and Judaism.

Prerequisite: C grade or better in COMP 101

3 credits (3 lecture hours), offered on a rotating basis  
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for World Civilization.

HUMN 230 - RURAL STUDIES  
(FORMERLY ENGL 222)  
This interdisciplinary course will introduce students to the study of rural life in American history. Through an exploration of historical, literary, and cultural sources, students will examine the idea and reality of rural “life on the farm” in America’s past and present. Grades will be based on class discussion, formal and informal writing assignments, exams and collaborative assignments.

Prerequisite: C or better in COMP 101 and C or better in HIST 101, HIST 102, HIST 103, POLI 101, POLI 111 or SOCI 101  
3 credits (3 lecture hours), offered on a rotating basis  
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

HUMN 231 – NATIVE AMERICAN STUDIES  
(FORMERLY HUMN 223)  
Native American history, culture, philosophy, world view, religion, and art through its oral, written and visual literature. Students will be introduced to the oral tradition, and learn about tribal bio-regions and their cultures and traditions through their literature.

Pre-requisite: “C” or better in COMP 101  
3 credits* (3 lecture hours), spring semester even years  
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Other World Civilization.

HUMN 300 - VISUAL COMMUNICATION  
(SEE COMM 300)  

HUMAN PERFORMANCE AND HEALTH PROMOTION

HPHP 100 – INTRODUCTION TO WELLNESS AND FITNESS  
This course presents a basic understanding of physical fitness as it relates to health and disease. Emphasis is placed on safe, effective techniques for developing all components of physical fitness. Course assists students in critically evaluating exercise information promoted by the media. Includes discussion of the many and varied career opportunities in exercise science.

4 credits (3 lecture hours and 2 lab hours per week), fall and spring semester

HPHP 101 – FIELDWORK IN HUMAN PERFORMANCE AND HEALTH PROMOTION  
This course is designed to provide the student with his/her first practical experience in the corporate, clinical and/or community setting. The primary objective of this practicum is to give the student an opportunity to closely observe the daily operations of a facility in which exercise is used. This experience is intended to assist the student in determining potential areas of interest for the senior internship.

Prerequisite: HPHP 100  
1 credit (45 fieldwork hours), fall and spring semester

HPHP 200 – EXERCISE PHYSIOLOGY I  
This course examines ACUTE AND CHRONIC physiological adaptations that occur as a result of SPORT AND EXERCISE training. Integrative approach linking basic theories of science with logical application of concepts to normal and ATHLETIC populations. ENERGY SYSTEMS, AND THE BODY’S, Cardiovascular and MUSCULOSKELETAL RESPONSE TO EXERCISE IS emphasized.

Prerequisite or Co-requisite: MAGN 101  
4 credits (3 lecture hours and 3 laboratory hours per week), fall semester

HPHP 201 – EXERCISE PHYSIOLOGY II  
This course examines ACUTE AND CHRONIC physiological adaptations that occur as a result of SPORT AND EXERCISE training. Integrative approach linking basic theories of science with logical application of concepts to normal and ATHLETIC populations. Continuation of coursework covered in HPHP 200. Neurological, cardiovascular, respiratory response to exercise, as well as temperature and acid-base regulation during exercise is emphasized.

Prerequisite: HPHP 200  
4 credits (3 lecture hours and 3 laboratory hours per week), spring semester

HPHP 300 – SPORT AND EXERCISE PSYCHOLOGY  
This course introduces the student to the psychological factors that influence individual and group sport and exercise participation. Topics include the influence of personal psychology and the environment on athletic performance, techniques to enhance athletic and exercise performance and adherence, and the dynamics of group processes as they relate to sports. Discussion to address psycho-social factors related to the healthy psychological growth and development of children including aggression, character development, and sportsmanship.

Prerequisite: PSYC 101, fall and spring semesters  
3 credits (3 lecture hours per week)

HPHP 301 – KINESIOLOGY AND APPLIED ANATOMY  
This course deals with the study of the musculoskeletal system and its application in gross human movement at the hip, knee, ankle, shoulder, elbow and trunk. Emphasis is placed on understanding the functional anatomy of the musculoskeletal and articular systems. Basic neuromuscular and biomechanical principles are introduced. Initial Laboratory exercises...
concentrate on the assessment of muscular and joint function during isolated movement, and progress to assessment of gait and the complex motion of the student’s choosing.

**Prerequisites:** C- or better in BIOL 150
**Pre- or Co-requisite:** PHYS 107

**4 credits (3 lecture hours and 2 laboratory hour per week), fall semester**

**HPHP 304 – COMMUNITY SERVICE IN EXERCISE AND SPORT SCIENCE**

This course is designed to enable the student to participate in and to lead volunteer work in the community promoting health and fitness. This experience emphasizes donating time to promote community well-being through application of a variety of skills developed in Human Performance and Health Promotion classes. The experience may include work at health or wellness fairs, at county health department functions, or in public schools.

**Pre-or Co-requisite: HPHP 201**
**Prerequisites:** MAST 100 and permission of the faculty member.

**1 credit (45 fieldwork hours), fall and spring semester**

**HPHP 305 – FITNESS ASSESSMENT AND EXERCISE PROGRAMMING**

Appraisal of various fitness parameters including functional capacity, muscle strength and endurance, flexibility and body composition. Application of appraisals in the development of exercise programming. Methods of quantifying energy cost of exercise, basic electrocardiography, cardiovascular risk stratification and interpretation of vital signs emphasized as components of exercise programming.

**Prerequisite:** HPHP 201

**4 credits (3 lecture hours, 3 laboratory hours), spring semester**

**HPHP 400 – APPLICATION OF STRENGTH AND CONDITIONING PRINCIPLES**

Provides students with the ability to develop and to implement sport-specific training programs, including periodization of the training cycle. Sport-specific conditioning of aerobic and anaerobic systems, including strength training, and discussion of short- and long-term benefits of specialized programs. Emphasis will be on appraisal and determination of individualized training needs and the establishment of personal performance goals. Includes instruction in the proper techniques and execution of training activities, as well as skill development in client education. Practical mastery is included.

**Prerequisite:** HPHP 201

**3 credits (3 lecture hours), fall semester**

**HPHP 401 – CARDIOPULMONARY ASSESSMENT FOR EXERCISE**

Integration of cardiorespiratory physiological concepts into the assessment of an individual’s aerobic capacity and the application of these data in designing an effective aerobic exercise program. ACSM Guidelines will be followed.

**Prerequisite:** HPHP 305

**3 credits (3 lecture hours), fall semester**

**HPHP 402 – WELLNESS CENTER INTERNSHIP**

Experience in the operation of the Morrisville State College Wellness facility and in the promotion of wellness concepts on campus. Student assumes a leadership role in the wellness center performing administrative as well as practical exercise-related tasks including exercise testing, exercise programming, facility supervision, and client monitoring. Students participate in wellness promotions on campus including health fairs, dorm meetings, health center seminars, etc. Student works under direction of the center supervisor and a faculty sponsor.

**Pre- or Co-requisites:** HPHP 401, and permission of the faculty member.

**3 credits (135 fieldwork hours), fall and spring semesters**

**HPHP 403 – EXERCISE PHYSIOLOGY FOR SPECIAL POPULATIONS**

This course addresses appropriate considerations for populations that students will likely encounter in various clinical or training settings upon graduation. Etiology and progression of select diseases and debilitating conditions are outlined. Discussion examines how exercise can both reduce disease risk and attenuate disease progression. Diseases include diabetes, hypertension, metabolic syndrome, common cardiovascular diseases, peripheral artery disease, copd, cyclic fibrosis, cancer, HIV/AIDS and arthritis. Time permitting, special considerations required while working with children and the aged are also discussed.

**Prerequisite:** HPHP 305

**3 credits (3 lecture hours), fall semester**

**HPHP 404 – FITNESS PROGRAM LEADERSHIP AND ADMINISTRATION**

Prepares the student to manage and operate a health/fitness program. Provides instruction in the areas of decision making, problem solving, personnel issues, fiscal policies, budgetary procedures, legal foundations, and facility management.

**Pre- or Co-requisite:** HPHP 402

**3 credits (3 lecture hours), spring semester**

**HPHP 405 – HUMAN PERFORMANCE AND HEALTH PROMOTION CAPSTONE INTERNSHIP**

Capstone experience for all Human Performance and Health Promotion majors. A practical learning experience in an exercise setting. Sites include corporate fitness centers, wellness clinics, university fitness facilities, and community-based health clubs. Students are involved with day-to-day operations of the agency. Involves variable 270 - 540 hours of work at chosen agency.

**Corequisite:** HPHP 400, HPHP 401, HPHP 403 and permission of faculty member

**Credits: Variable 6 Credits (270 fieldwork hours), spring semester**

**HUMAN SERVICES**

**HUMS 100 – CAREERS IN THE HELPING PROFESSIONS**

This course will generate one credit hour by producing 16 hours of contact time over a 15-week semester. This course is designed to assist students wishing to pursue careers in helping professions. Focus will be on researching the breadth of positions available as well as salary range and educational requirements. Attention will also be given to specific concerns associated with professional helpers such as boundaries, interpersonal skills, and appropriate conduct in both the professional and personal settings.

**Prerequisite:** None

**Co-requisite:** HUMS 101; HUMS 141

**1 credit (1 lecture hour/week), fall and spring semesters**

**HUMS 101 - INTRODUCTION TO HUMAN SERVICES**

The human service field and helping professions, including the theoretical systems for understanding human behavior, modalities of intervention, counseling skills, social policy, and professional ethics and standards.

**3 credits (3 lecture hours), fall or spring semester**

**HUMS 141** - INTERNSHIPS IN HUMAN SERVICES

A field-based internship experience providing social science majors an opportunity to combine their internship experience in a human service setting. Students will be required to combine their internship experience with written work to process their experience.

**Corequisite:** HUMS 100; HUMS 101 and permission of instructor

**1 credit for each unit, fall or spring semester**

[Offered at Norwich Campus]
HUMS 142* - INTERNSHIPS IN HUMAN SERVICES II
A field-based internship experience providing social science majors an opportunity to combine their internship experience in a human service setting. Students will be required to combine their internship experience with written work to process their experience.
Prerequisite: HUMS 100; HUMS 101, HUMS 141 and permission of instructor
1 credit for each unit, fall or spring semester
[Offered at Norwich Campus]

HUMS 143* - INTERNSHIPS IN HUMAN SERVICES III
A field-based internship experience providing social science majors an opportunity to combine their internship experience in a human service setting. Students will be required to combine their internship experience with written work to process their experience.
Prerequisite: HUMS 100; HUMS 101, HUMS 141 and permission of instructor
1 credit for each unit, fall or spring semester
[Offered at Norwich Campus]

HUMS 200 – HELping PROCESSES AND CRISIS INTERVENTION
This course will provide students with the skills and techniques necessary to effective helping. Students will be introduced to the role of the helper as well as the process of helping. Students will gain knowledge and understand competent multicultural practices and helping skills as well as the theories associated with helping and crisis intervention.
Prerequisites: HUMS 100, PSYC 101, HUMS 101, and HUMS 141
Co-requisites: HUMS 142 and HUMS 143
3 credits (3 lecture hours/week), fall semester

HUMS 201 – COUNSELING AND CASE MANAGEMENT
This course will provide an applied foundation to interviewing and counseling techniques. Students will examine strategies pertaining to intentional interviewing and effective interventions. Focus will be given to human strength and resilience. Attention will also be given to the foundations of case management and the importance of this role as a human service provider. Cultural consideration will be integrated into both aspects of this course.
Prerequisites: HUMS 200 and SOCI 101
3 credits (3 lecture hours/week), spring semester

HUMS 202 – MANAGEMENT AND ADMINISTRATION OF HUMAN SERVICES
This course will focus on the practices and skills vital to the management and administration of human service delivery. The course will provide an overview of topics associated with human service management such as: the functions of human service management, program development and evaluation, community collaboration, organization theory, and supervisory skills. Students will gain an understanding of technology utilized in the storing and managing of data and finances pertaining to human service administration.
Prerequisites: SOCI 101
Corequisite: HUMS 201
3 credits (3 lecture hours/week), spring semester

HUMS 250 – HUMAN SERVICE PRACTICUM
This is the final required course for the Human Services AAS degree program. This course is designed to provide human services students with an opportunity to integrate and assimilate previous learning experiences with human service delivery. Practical field experience combined with lecture and self-reflection enable students to critically assess their personal, professional, and social values as well as practice interpersonal skills in a learning environment. Course assignments and class discussion will enable students to examine influences of organizational structure, funding sources hiring and training of personnel, as well as other agency policies and procedures on the delivery of services.
Students will spend 120 hours at a negotiated human service site and 16 hours in a structured classroom setting. Successful completion of this course will require a grade of B or better since this course is intended to evaluate the readiness of graduates to participate in human service employment.
Prerequisite: Senior status
3 credits (3 lecture hours/week), spring semester

INDIVIDUAL STUDIES
ISP 101 – COLLEGE SUCCESS FOR INDIVIDUAL STUDIES STUDENTS
For Individual Studies Majors Only. This course will guide the students through the process of setting educational and career goals, in understanding how their Individual Studies major is tied to those goals, and in identifying strategies that will help promote the students’ success in achieving their goals. Students who have taken GNED 110, GNED 119, or EDU 101 may not take this course.
Prerequisite: Student is enrolled in the Individual Studies Program or permission of instructor. Not a campus wide elective.
1 credit (1 lecture hour), fall or spring semester

INSURANCE
INS 201 - INSURANCE PRINCIPLES I
This course is the first of two courses that qualify prospective brokers and agents to take the New York State Insurance Brokers and Agents Examination. Topics include insurance basics, personal lines policies and coverage, and New York Insurance Law. (Taught at the Norwich Campus only)
3 credits (3 lecture hours)

INS 202 - INSURANCE PRINCIPLES II
This is the second of two courses that qualify prospective brokers and agents to take the New York State Insurance Brokers and Agents Examination. The course covers a broad spectrum of insurance concepts, coverage and law. This course completes the ninety-hour course of study required by the State of New York Insurance Department with discussions of commercial property, liability, auto, compensation and other commercial forms of insurance. (Taught at Norwich Campus only)
3 credits (3 lecture hours)

JOURNALISM
JOUR 111 – NEWS WRITING & EDITING
Fundamentals of news writing, the techniques of gathering news, and the elements of writing style that make a good reporter. Elements of the news story including the lead, style and structure of news stories, copy editing, elements of writing style that make a good reporter. News sources, and types of news stories.
Pre or Co-requisite: COMP 101 or permission of instructor.
3 credit hours (2 lecture, 2 lab hours), fall semester.

JOUR 112 – NEWS WRITING II
In-depth study of reporting and writing news, details of government, politics, courts, education and science writing.
Prerequisite: Grade of “C” or better in JOUR 111
3 credits (2 lecture hours, 2 laboratory hours), spring semester
JOUR 114 - NEWS EDITING
Principles of editing for print, broadcast and Internet copy focusing on style, grammar, syntax. Introduction to CART (Computer-Assisted Reporting Techniques) and ethical considerations applied through the editing process.
Prerequisite: Grade of “C” or better in JOUR 112
3 credits (2 lecture hours, 2 laboratory hours), fall semester

JOUR 121 - PRINCIPLES OF PRESS PHOTOGRAPHY
An introduction to the use of photography in delivering the news. The course includes an introduction to basic camera functions, the rules of photographic composition, the use of digital manipulation software and storytelling through images.
3 credits (2 lecture hours, 2 laboratory hours) spring semester

JOUR 122 - ADVANCED PHOTO JOURNALISM
Intensive study of photography and photographic equipment with emphasis on photojournalism and techniques of the freelance photographer. $40 lab fee, $40 rental fee, $50 refundable deposit.
Prerequisite: JOUR 121
3 credits (2 lecture hours, 2 laboratory hours), spring semester, alternate years

JOUR 126 – BROADCAST WRITING AND EDITING
Broadcast Writing & Editing is designed to provide Journalism majors an introduction to the writing formats and editing styles used to deliver news content clearly and conversationally in the form of radio and Internet broadcasts (podcasts), television packages or stories, and commercial promotions used by a variety of businesses and organizations worldwide, to gain public attention for events and happenings as well as products and services. Students will research, write and format scripts for broadcast stories on deadline, including content for news, sports, in-depths, packages, mini-documentaries, as well as commercial, entertainment and promotional news. A highlighted component of this course is Resourceful Exercises, in which students will be sent breaking news assignments during a 24/7 period, have to research the topic and submit the proper broadcast formatted script on deadline.
Pre/Co-requisite: COMP 101
3 credits (3 lecture hours) spring semester

JOUR 185 - PRODUCTION LABORATORY I
Work experience in one of the following publications or publications-related activities: college newspaper, radio station, or photography. Deadline pressures, layout and format techniques, staff composition and problems, and FCC and print ethics.
1 credit (2 laboratory hours), fall semester

JOUR 186 - PRODUCTION LABORATORY II
Continuation of JOUR 185.
1 credit (2 laboratory hours), spring semester

JOUR 187/188 PRODUCTION LAB IN WCVM MEDIA I AND II

JOUR 287/288 PRODUCTION LAB IN WCVM MEDIA III AND IV

JOUR 387/388 PRODUCTION LAB IN WCVM MEDIA V AND VI

JOUR 487/488 PRODUCTION LAB IN WCVM MEDIA VII AND VIII

JOUR 185 - PRODUCTION LABORATORY I
Continuation of JOUR 185.
1 credit (2 laboratory hours), fall semester

JOUR 186 - PRODUCTION LABORATORY II
Continuation of JOUR 185.
1 credit (2 laboratory hours), spring semester

JOUR 187/188 PRODUCTION LAB IN WCVM MEDIA I AND II

JOUR 287/288 PRODUCTION LAB IN WCVM MEDIA III AND IV

JOUR 387/388 PRODUCTION LAB IN WCVM MEDIA V AND VI

JOUR 487/488 PRODUCTION LAB IN WCVM MEDIA VII AND VIII

This series of production laboratory experiences provide the student operational staff necessary to keep the campus broadcast center, WCVM Media, functional for a 10-week period. WCVM is composed of an AM radio station, Internet radio station, Cable TV channel, and a digital video production unit. Depending on the laboratory experience for which the participant is enrolled, student may work a minimum of 5 to 9 hours per week (1 credit hour = 45 hours) as content producers. While these labs are degree requirements for the B.S. in Videojournalism Communication, students from all campus majors are eligible to participate for academic credit toward graduation.
Prerequisite: Permission of instructor required
JOUR 187/188 (1 credit; 1 credit hour), fall/spring
JOUR 287/288 (1 credit; 1 credit hour), fall/spring
JOUR 387/388 (2 credits; 2 credit hours), fall/spring
JOUR 487/488 (1 credit; 1 credit hour), fall/spring

JOUR 201 - SPORTS WRITING
This course provides an introduction to the specialized skills required for reporting and writing about sports for newspapers, magazines and the Web. Game coverage, advances, wraps, features and non-contest reporting are also covered.
Prerequisite: Minimum grade of B in JOUR 111 or permission of instructor.
3 credits (2 lecture hours, 2 laboratory hours), spring semester

JOUR 211 - FEATURE WRITING
Investigative and interpretative reporting through extensive use of the news conference. Students will develop interviewing, research, and feature-writing skills.
Prerequisite: JOUR 112
3 credits (2 lecture hours, 2 laboratory hours), fall semester

JOUR 214 - SPECIALIZED WRITING
Writing and preparing for publication of columns, interpretative articles and feature pieces for newspapers or magazines.
Prerequisite: JOUR 112
3 credits (2 lecture hours, 2 laboratory hours), spring semester

JOUR 220 – MASS MEDIA & SOCIETY
An investigation of the effects of mass media on society and social systems. This course examines the processes of mass media and their influences on their audiences, with emphasis on the majority and minority voices and viewpoints it creates and promotes. Specific topics will include race, class and gender in mass media, gate-keeping and agenda-setting in media content, news media, entertainment media, feedback and control, audience analysis, and developing skills in critical media literacy.
Prerequisite: SOCI 101 with a C+ or better, or permission of instructor
3 credits (3 lecture hours)

JOUR 261 - THE GRAPHICS OF MASS COMMUNICATION
Advanced newspaper layout and design. Introduction to magazine layout and design. Visual aspects of advertising, such as the use of color to sell a product, plus a unit on promotional material, i.e., brochures, campaigns, including instruction on paper selection and mailing.
Prerequisite: JOUR 114
2 credits (1 lecture hour, 2 laboratory hours), fall semester

JOUR 270 - DESKTOP PUBLISHING
Provide the basic skills of Desktop Publishing to those already familiar with word processing. It is designed to facilitate control of the publishing process-editing, typesetting, design, graphic production, and page makeup from one’s own personal desktop. Includes Web page design.
3 credits (2 lecture hours, 2 laboratory hours), fall semester
JOUR 272 - PUBLIC RELATIONS AND PUBLICITY MANAGEMENT

This course will cover essentials for public relations practitioners, including a brief theory-based discussion of the origins of P.R. at the turn of the century and its evolution into a leading industry in today's world. Students will learn firsthand how to identify target audiences and will go through exercises in drafting, producing, and distributing a wide range of P.R. messages to those publics using mass media and emerging communications technologies. Special topics will include crisis public relations, speech writing, and conducting press conferences and other media briefings. This class is open to non-majors with permission from the instructor.

3 credits (3 lecture hours)

JOUR 280 - BROADCAST MANAGEMENT, NEWS AND PROMOTION

This class offers a "work to show" class where students learn the business of broadcasting including: management and marketing techniques, sales and promotion strategies, and non-linear video editing production. Professionals in the local and regional broadcasting markets guest lecture, as well as host students through field trip visits.

Prerequisite: Permission of instructor
3 credits, fall semester

JOUR 285 - PRODUCTION LABORATORY III

Allows seniors to earn credit for supervisory publication work. CHIMES and photography workers learn editors' functions while WCVM staff learn management and FCC training.

1 credit (2 laboratory hours), fall semester

JOUR 286 - PRODUCTION LABORATORY IV

Continuation of JOUR 285.

1 credit (2 laboratory hours), spring semester

JOUR 290 - ADVERTISING STRATEGIES

An overview of advertising theory and practice which covers advertising's place in society, its relation to marketing and communications, its forms of media, and its creative elements-art and copy. Students create an entire production advertising campaign for a client.

Prerequisite: Permission of instructor
3 credits (3 lecture hours)

JOUR 313 - BROADCAST SCRIPT WRITING

Broadcast Script writing will provide students with weekly news and entertainment producing seminars designed to tailor their abilities to research, write and format, and critique in-depth journalistic writings appropriate for use in any communications profession, but specific to projects related to radio, television (including Internet video streaming), and film script writing. Lecture meetings, as well as independent research and individual consultation sessions, are an integral part of the story origination and execution process for programming related to both the news and entertainment industries.

Prerequisites: "C" or better in COMP 101 and 102, or permission of instructor
3 credits (3 lecture hours) Fall or spring semester

JOUR 315 - ONLINE WRITING & PRODUCTION

Adapting written, audio, and video files for the Internet, incorporating style and format changes to accommodate online audiences. Writing assignments for news and marketing content. Examination of the elements of print and broadcast writing styles that contribute to online content. A thorough review of the differences and similarities that mark the era of media convergence in journalism.

Prerequisites: JOUR 214 with a C+ or better
3 credits (2 lecture hours, 2 laboratory hours)

JOUR 317 – WRITING NONFICTION FOR MAGAZINES.

Introduction to the specialized skills required for finding, researching and writing non-fiction stories for magazines. Students will learn how to target potential publication sites, write pitch letters, and negotiate publishing contracts.

Prerequisite: “C” or better in COMP 101, submission of writing portfolio and permission of instructor.
3 credits (2 lecture hours, 2 lab hours), spring semester only

JOUR 326 - VIDEO JOURNALISM I PRODUCTION/EDITING

Videojournalism I (Production/Editing) is designed so students emulate the world of videojournalists or "news content producers" in the field. These producers determine what broadcast news is, how to best present it to a specific audience, and how to best technically gather information on deadline within a business model. Students will learn the technical parameters of digital video cameras, audio and video editing, and basic field production. Broadcast writing formats and editing protocol are integral components of this course.

Prerequisite: “C” or better in JOUR 126 Broadcast Writing & Editing.
3 credits (3 lecture hours), fall or spring semester

JOUR 327 - VIDEOJOURNALISM II CONTENT PRODUCING ACROSS MEDIA PLATFORMS

This course provides students a variety of broadcast platforms to perform video shooting, technical editing for audio and video, file conversion, and infographics production. Students will also independently research story themes, visually create, and technically convert audio and video content for use across diverse media platforms including, but not limited to, television, Internet websites, podcasts, and cell phone video. Chroma key use, multi-source video production as well as computer graphics and video editing software will play an integral role in the content conceptualization and production processes of visual storytelling.

Prerequisites: “C” or better in JOUR 326 Videojournalism I (Producing/Editing)
3 credits (3 lecture hours) spring

JOUR 328 – VIDEOJOURNALISM III ETHICAL/LEGAL ISSUES FOR CONTENT PRODUCING

This course provides students with numerous case studies focusing on First Amendment issues, industry codes of conduct, the Federal Communications Commission, media access, copyright law, confidential sources, labor law, freedom of information, defamation of character, Internet legalities, and current industry topics in the news. Videojournalism III offers students detailed information to keep themselves and their content legal, while best trying to educate the audience they pledge to serve.

Prerequisite: Permission of instructor.
3 credits (3 lecture per week) fall

JOUR 345 – WEB CONTENT DESIGN

Instruction in basic Web design, with the emphasis on the development of skills related to online journalism. Students will be able to edit Web pages for clarity and appearance that enhances readability and access. Students will learn principles of Web design, getting started with Dreamweaver software, and developing a Web site. The course features step-by-step instructions and in-depth explanations of the features of Macromedia Dreamweaver and Flash. Instruction includes working with text and graphics, links, animations and tables. In addition, students will understand and create cascading style sheets and page formatting.

Prerequisites: JOUR 270 and JOUR 315 with a C or better, or permission of instructor
3 credits (2 lecture hours and 2 lab hours per week), fall or spring semester.
JOUR 385 – PRODUCTION LAB IN JCOM I
Students will produce the online version of the CHIMES newspaper, updating content on a daily basis and maintaining close contacts with the print CHIMES staff. It is expected that students will take increasingly prominent roles as editors in the laboratory. The course includes instruction on intermediate Web authoring and online editing.
Prerequisite: JOUR 286 – CHIMES Production Lab or permission of the instructor
1 credit (2 laboratory hours)

JOUR 386 - PRODUCTION LAB IN JCOM II
Students will produce the online version of the CHIMES newspaper, updating content on a daily basis and maintaining close contacts with the print CHIMES staff. It is expected that students will take increasingly prominent roles as editors in the laboratory. The course includes instruction on intermediate Web authoring and online editing.
Prerequisite: JOUR 385 or permission of the instructor
1 credit (2 laboratory hours)

JOUR 401 – LEGAL AND ETHICAL ISSUES OF MASS COMMUNICATION
Students will research several case studies that represent various legal and ethical issues past and present, including freedom of speech, publishing by authority, alien and sedition laws, libel and slander, bias and prejudice and conflicts of interest in reporting, right to privacy, professional codes of conduct, shield laws, FCC regulation of broadcast entities, and the emerging debate over censorship if the Internet. Current related issues in the news will also be explored as available.
Prerequisite: Jour 214 or permission of instructor
3 credits (3 lecture hours), fall semester

JOUR 409 – PRE-INTERNSHIP SEMINAR
Prepares students in the B.S. in Journalism & Communication for Online Media degree program for the 6-credit internship in the following semester. Integrates rules and regulations from the work place with academic and professional standards for performance, conduct, and communication within an organization. Students will also use this course to prepare solicitations for, and secure, their internship sites for the following semester.
Prerequisite: JOUR 315 – Online Writing & Production – With a grade of C+ or better
1 credit (One seminar hour per week)

JOUR 410 – INTERNSHIP IN JOURNALISM & COMMUNICATION FOR ONLINE MEDIA
In this course, students will work in a professional business setting—either in person or on campus through online and phone correspondence—to establish and maintain a professional Web site for that business. Eligible businesses may or may not be related to journalism. Students will utilize writing skills learned in previous courses to generate content appropriate to the client and to prepare that content for uploading on a daily or weekly basis as appropriate. Students will work collaboratively with client employees and will be expected to conduct themselves in a manner consistent with high professional standards.
Prerequisites: JOUR 409 – Pre-Internship Seminar
6 credits (A minimum of 200 hours in an internship setting plus 40 hours with the instructor, including all assignments)

JOUR 411 – CAPSTONE COURSE IN JOURNALISM & COMMUNICATION FOR ONLINE MEDIA
This course draws together all the elements of the B.S. degree in Journalism & Communication for Online Media, including technical applications, writing skills, liberal arts and elective courses and internship experience. Students will be required to meet in lecture, seminar and laboratory settings, and to discuss common and individual experiences from their internship and other applied academic activities. Emphasis will be on the examination of specific skills sets as well as students’ problem-solving skills, goal setting, self assessment, and oral and written communication skills. Students will perform a community-service project in which they will provide Web content for a local nonprofit agency. They will also prepare a report of their activities in the form of a capstone presentation to be delivered to a campus audience at the end of the semester.
Prerequisite: JOUR 410 – Internship in Journalism & Communication for Online Media
3 credits (1 lecture hour, 1 seminar hour, 2 laboratory hours)

JOUR 426 - VIDEOJOURNALISM IV REMOTE BROADCAST PRODUCTION
This work-to-show class enables students to produce live remote broadcasts for radio, television, and the Internet — news, sports, special event meetings, plays, and more. Students will learn the real world challenges and rewards of “live content producing” – planning, site surveying, budgeting, executing, and evaluating the production process. Many of the productions will be researched and produced independently by a team of Videojournalism producers.
Prerequisite: JOUR 327 Videojournalism II (Content Producing Across Media Platforms); permission of instructor
3 credits (3 lecture hours) Spring

JOUR 485 - PRODUCTION LAB IN JCOM III
Students will produce the online version of the CHIMES newspaper, updating content on a daily basis and maintaining close contacts with the print CHIMES staff. It is expected that students will take increasingly prominent roles as editors in the laboratory. The course includes instruction on intermediate Web authoring and online editing.
Prerequisite: JOUR 386 or permission of the instructor
1 credit (2 laboratory hours)

JOUR 486- PRODUCTION LAB IN JCOM IV
Students will produce the online version of the CHIMES newspaper, updating content on a daily basis and maintaining close contacts with the print CHIMES staff. It is expected that students will take increasingly prominent roles as editors in the laboratory. The course includes instruction on intermediate Web authoring and online editing.
Prerequisite: JOUR 485 or permission of instructor
1 credit (2 laboratory hours)

LITERATURE

LITR 203 - AMERICAN LITERATURE TO 1900
This course surveys the voices of North America up to and beyond the Civil War. It covers Indians, explorers, slaves and pioneers. Students are introduced to philosophical and political pondering, the birth of the short story, and the forging of the North American character.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 204 - AMERICAN LITERATURE 1900 TO PRESENT
Step into a time machine and witness the unfolding of Modern America, from the 1870’s to the 1970’s and beyond. This course surveys the writers who influenced and echoed the culture that shapes our times. Meet immigrants, flappers, beatniks and more, in poems, stories, etc.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.
LITR 205 - ENGLISH LITERATURE TO 1800
This survey course brings to life monsters, dragons, knights, poets, angels and actors from English literature and culture of the eight through eighteenth centuries. Watch Beowulf fight Grendel, take a journey to Canterbury with Chaucer’s pilgrims, see a Shakespearean play at the Globe Theatre, gasp as Milton’s angels fall from heaven, visit exotic lands with Gulliver, and more.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 206 - ENGLISH LITERATURE 1800 TO PRESENT
Murderers, monsters, lovers and lunatics stalk the pages of British literature since the eighteenth century. This survey starts with the revolutionary ideas of Wordsworth, Coleridge, and other Romantics. The Victorian period that follows reveals surprising contrasts such as Tennyson’s practical analysis of issues and Morris’s artistic rejection of meaning. Finally, the survey shows how modern authors such as Yeats and Pinter build upon or reject the heritage of the past.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 207 - WESTERN WORLD LITERATURE
This is a Western literature course which examines literature in translation from South, Central and North America, as well as the Caribbean and from Africa and Europe. Students will research, read, discuss, and write about early and modern texts from countries within the western bioregion, such as Italy, France, Russia, Chile, Argentina, Cuba, Canada, Ghana, Nigeria, South Africa, and others. Students will be introduced to a broad survey of literature that will provide a window on the culture, history, and geography of the regions in their texts.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 208 - EASTERN WORLD LITERATURE
This is a world literature survey course that examines literature in translation from the Middle East, Asia, Australia and the Eastern Pacific Basin. Students will read, discuss, and write about early, middle period, and modern text selections from regions including Israel, Palestine, Saudi Arabia, India, Tibet, China, Japan, Korea, Vietnam, Singapore, Australia, New Zealand, and Samoa. Students will be introduced to a broad survey of literature that will provide a window on the culture, history, and geography of the regions in the texts.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 211 - BLACK AMERICAN WRITERS
Chronological survey of the contribution of the Black American writer from the days of slavery to the present. Slave narratives, novels, plays, short stories, and poems.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 221 - LITERATURE OF GENDER
Reading, discussion, and written analysis of literature emphasizing the significance of changing gender roles portrayed in various genres, in different cultures and in different eras.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 231 - MODERN LITERATURE
Reading, discussion, and written analysis of 20th century novels, short stories, poetry, plays, and nonfiction with a multicultural emphasis.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 232 - MAJOR AMERICAN NOVELS
Reading and discussion of novels which have had an impact in American literature, of their authors, and of the changes in American literature as evidenced through these novels. Concepts of the novel explored through criticism and explication.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 233 - LITERATURE AND THE ENVIRONMENT
A chronological survey of North American writers on the environment from the Colonial period to the present. Special attention is paid to H.D. Thoreau, Aldo Leopold, Rachel Carson, Edward Abbey, Barry Lopez, and others.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 234 - ASPECTS OF CONTEMPORARY LITERATURE
Reading, discussion, and writing about fiction, drama, poetry, and nonfiction produced since World War II. Emphasis on developments in literary genres and criticism, as well as on social and cultural developments as reflected in the texts.
Prerequisite: C or better in COMP 101
3 credits (3 lecture hours), offered on a rotating basis
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

LITR 342 - SCIENCE FICTION
This course will cover the scope and definition of a huge genre relating to many aspects of current life and interest. Topics will cover all levels of the area from horror to time and space literature. Emphasis will be on the rich and classic history which includes movement from books to television and movies. The literary elements and rationale for such writing will also be discussed along with an opportunity to begin understanding of the many choices and future of this writing.
Prerequisite: C or better in COMP 101; COMP 102 recommended
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.
MANUFACTURING TECHNOLOGY

MFG 110 - DIMENSIONAL METROLOGY
Utilization of the principles of the science of measurement to first give the necessary laboratory experience to show linear calibration to 10 millionths of an inch with various measurement instruments. Secondly to demonstrate the necessity of metrology in regards to national and international manufacturing and trade.
2 credits (1 lecture hour, 3 laboratory hours), spring semester

MFG 206 - CNC MACHINING
Students will be instructed about the capabilities and limitations of computer numerical control (CNC) 4-axis machining center and 2-axis turning center. Students will write programs using g-code for a FANUC controller and produce parts in the laboratory from their programs.
Prerequisite: MECH 101
3 credits (2 lecture hours, 3 laboratory hours), fall semester

MFG 207 - QUALITY CONTROL
A fundamental, yet comprehensive coverage of the basic principles and applications of quality control. Topics covered include: statistical process control (SPC), data collection and analysis, control charts for variables and attributes, acceptance sampling, reliability, total quality management (TQM) and ISO systems.
Prerequisite: MATH 102
2 credits (1 lecture hour, 3 laboratory hours), spring semester

MFG 208 - COMPUTER-AIDED MANUFACTURING (CAM) - MASTERCAM
Introduction to Computer-Aided Manufacturing (CAM) utilizing Mastercam Software and Computer Numerical Controlled (CNC) machinery. Students will generate 2D and 3D drawing files and use the software to program various 2 and 3 axis CNC machining toolpaths. These programs will then be used to machine projects on our 4-axis machining center
Prerequisites: CAD 186 and MFG 206
2 credits (1 lecture hour, 3 laboratory hours), spring semester

MFG 221 - MANUFACTURING PROCESSES I
Examination of materials and processes in the manufacturing environment - theoretically and in the laboratory.
Prerequisites: MECH 101 and MECH 120
3 credit hours (2 lecture hours, 3 lab hours), fall semester

MFG 240 - DESIGN/MANUFACTURE CAPSTONE
This course is a project-based culmination of design and manufacturing studies applied to a formal product design challenge. Students will work in teams to conceptualize, plan, define, prototype, optimize, and manufacture their solution to a real-world design problem. Emphasis is placed on creativity, communication and documentation skills, time management and individual responsibility for project success. A final project portfolio will include both written and graphical documentation of the product design process.
Prerequisites: DRFT 252, MFG 221
3 credits (1 lecture hour, 4 laboratory hours), spring semester

MASSAGE THERAPY

MAST 100 CPR FOR HEALTHCARE PROVIDERS
This course introduces students to the skills and techniques necessary to provide the initial emergency care to sustain life support to victims of accidents and illness. Students will be eligible to become certified in CPR for the Healthcare Provider by satisfying the requirements established by the American Heart Association. This course is open to Massage Therapy students and Human Performance and Health Promotion students or by permission of the instructor.
1 credit (lecture), 5 weeks, spring semester

MAST 101 - EASTERN ANATOMY AND PHYSIOLOGY
Focus is on the nature and distribution of energy throughout the body. This course introduces the philosophical principles of Eastern medicine as well as an in-depth study of the channel system and the distribution of energy and areas of influence. The course introduces the concepts of the organs and viscera and their functions related to energy development and utilization. The principles of energy and Taoist Cosmology will be discussed from ancient to modern viewpoints.
Pre or Co-requisites: BIOL 150 and 150L; BIOL 135 and MAST 102; 3 credits (3 lecture hours), fall semester

MAST 102 - WESTERN MASSAGE I
Presents western massage techniques including the history of massage, the fundamental principles, physiological effects, and precautions for use. The appropriate use of oils, equipment and draping techniques will be introduced. This course provides the knowledge base of western massage therapy theory and techniques.
Pre or Co-requisites: BIOL 150 and 150L; BIOL 135 and MAST 101
4 credits (3 lecture hours, 3 laboratory hours), fall semester

MAST 103 - WESTERN MASSAGE II
This course focuses on the further development of western massage techniques and the precautions for all practitioners. The student will learn more advanced hand manipulations, direction of pressure and pressure points as well as review western massage principles.
Pre or Co-requisites: BIOL 150 and 150L. (each with C or better required)
Pre or Co-requisites: BIOL 151 and 151L; BIOL 136 and MAST 104
2 credits (1 lecture hour, 3 laboratory hours), spring semester

MAST 104 - EASTERN MASSAGE
This course focuses on the development of understanding regarding the location of the Primary Meridians and the Extra Channels used in Eastern massage. Various eastern massage techniques will be presented as practical applications of theoretical knowledge. Use of acupoints will be thoroughly examined. Students will learn a variety of Eastern massage manipulations and exercises.
Prerequisites: MAST 101, BIOL 150 and 150L (each with C or better required)
Pre or Co-requisites: BIOL 151 and 151L; BIOL 136, MAST 103
2 credits (1 lecture hour, 3 laboratory hours), spring semester

MAST 201 - WESTERN MEDICAL MASSAGE
Presents western massage techniques and precautions for its use. The student is introduced to acute and chronic health conditions appropriate to treat with Western massage. Situations requiring a referral to medical health care providers will be identified. Fifty hours are devoted to pathology.
Prerequisites: MAST 103, BIOL 151 and 151L (each with C or better required)
Pre or Co-requisites: MAST 202: BIOL 137; MAST 203; 4 credits (2 lecture hours, 6 laboratory hours) fall semester

MAST 202 - EASTERN MEDICAL MASSAGE
This course presents applications of Eastern massage techniques. Eastern massage theory and practice will be applied to chronic and acute health conditions. Students will learn to utilize the Primary Meridians and the Eight Extra Channels to facilitate therapeutic client response. Students will develop a cohesive strategy for client evaluation using Five Element Theory, Eight Principles and Four Evaluations as well as procedures to develop effective treatment strategies. Students will learn to identify situations that require referral. Fifty hours will focus on pathology.
Prerequisites: MAST 104, BIOL 151 and 151L (each with C or better required)
Pre or Co-requisites: MAST 201 and 203; BIOL 137; 4 credits (2 lecture hours, 6 laboratory hours) fall semester
If you have been placed below your program's exit requirement, then take the mathematics course as specified in the college catalog. If you have been placed at your program's exit requirement, then take that mathematics course and then progress through the math sequence to the mathematics course listed as the exit requirement.

If you have been placed above your program's exit requirement, then take the mathematics course you are placed at, or an appropriate mathematics course elective listed below to fill a math requirement.

Mathematics Sequence

<table>
<thead>
<tr>
<th>Algebra Sequence</th>
<th>Calculus Sequence</th>
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<tbody>
<tr>
<td>SKLS 091</td>
<td>MATH 147</td>
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<tr>
<td>MAGN 101</td>
<td>MATH 151 OR MATH 161</td>
</tr>
<tr>
<td>MATH 102</td>
<td>MATH 152 OR MATH 162</td>
</tr>
<tr>
<td>MATH 103</td>
<td>MATH 261</td>
</tr>
<tr>
<td>MATH 147</td>
<td>MATH 262</td>
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</tbody>
</table>

The above information contains the sequence of mathematics courses for the Department of Mathematics and Computer Science at Morrisville State College. This does not include mathematics electives. A student must pass a course with a C or better to meet the prerequisite for the next course in the sequence. Any student who passes a course with a C or better may not take a course lower in the sequence to receive mathematics credit. If a student elects to take a mathematics course as Pass/Not Pass, a grade of pass does not imply that a student is able to pass the course.

Choosing Your First Mathematics Course

It is important that you begin your mathematics sequence at the appropriate level for which you are qualified. You need to know your initial mathematics placement and exit requirement for your program. If you do not know your initial placement, contact the chair of the Department of Mathematics and Computer Science. Following are the different options if you have been placed at, below, or above your program's mathematics exit requirement.

If you have been placed at your program's exit requirement, then take that mathematics course as specified in the college catalog.

If you have been placed above your program's exit requirement, then take the mathematics course you are placed at, or an appropriate mathematics course elective listed below to fill a math requirement.

Mathematics electives

<table>
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<tr>
<th>Mathematics electives</th>
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<tbody>
<tr>
<td>Prerequisite: MAGN 101 (C or better required) or placement into MATH 102</td>
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<td>MATH 141</td>
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<tr>
<td>Prerequisite: MATH 102 (C or better required) or placement into MATH 103</td>
</tr>
<tr>
<td>MATH 145</td>
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<tr>
<td>Prerequisite: MATH 102 (C or better required) or placement into MATH 103</td>
</tr>
<tr>
<td>MATH 149</td>
</tr>
<tr>
<td>Prerequisite: MATH 103 (C or better required) or placement into MATH 147</td>
</tr>
</tbody>
</table>

Transfer/Placement Information

Transfer credit: College mathematics courses taken at other institutions are evaluated and will be awarded transfer credit when appropriate.

How students are initially placed in a mathematics course

All incoming students are required to take a mandatory placement exam.* In addition to the result on the placement exam, other factors that may be considered include: high school mathematics grades, examinations (regents, state, SAT, or ACT), the number of attempts necessary to successfully complete high school mathematics courses, and the time elapsed since a student’s last mathematics course.

*In some cases, college mathematics courses taken at other institutions and successfully transferred for credit may be considered in lieu of the placement exam.

How to find a student’s mathematics placement/other questions

If a student’s mathematics placement is needed, or if students or advisors have any other questions about mathematics placement, please contact the chair of the Department of Mathematics and Computer Science or any member of the department.

Lowering placement after unsuccessful attempt

If a student begins a course but is not capable of finishing it because it is too...
difficult, the student may meet with the department chair to determine if a lower mathematics placement is more appropriate for subsequent semesters.

**SUNY General Education**

Students who successfully complete MATH 123 will fulfill the SUNY General Education requirement for Mathematics. Students who successfully complete MATH 102 or a mathematics course that has MATH 102 or greater as a prerequisite will fulfill the SUNY General Education requirement for Mathematics.

**SKLS 091 - PRE-ALGEBRA**

(see Skills Courses)

**MAGN 101 - ELEMENTARY ALGEBRA**

Topics include: Review of basic arithmetic skills. Properties of the real number system, terminology, and vocabulary; Solving linear equations and inequalities in one variable; Literal equations and applications of algebra; Integer exponents; Operations on Polynomials; Factoring: Operations on Rational expressions; Graphing linear equations. (TI-30 required)

Prerequisite: SKLS 091 (C or better required) or equivalent

3 credits (3 lecture hours), fall or spring semester

* These credits do NOT count toward the math/science requirements of the A.S., A.A.S., or A.A. degree.

**MATH 102 - INTERMEDIATE ALGEBRA WITH TRIGONOMETRY**

Topics include: Exponents, roots, and radicals; Functions and their graphs; Solving and graphing quadratic equations and applications; Solving, radical, equations; Equations in quadratic form; General angle trigonometry; Solving systems of linear equations in two or three variables and applications. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)

Prerequisite: MAGN 101 (C or better required) or equivalent

3 credits (3 lecture hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics.

**MATH 103 - COLLEGE ALGEBRA WITH TRIGONOMETRY**

Topics include: Complex fractions; Evaluation and combinations of functions, inverse functions, exponential, and logarithmic functions, including applications; General angle trigonometry in radian measure; Graphs of basic trigonometric functions; Transformations of sine and cosine functions; Trigonometric identities and equations; Law of sines and law of cosines, including applications. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)

Prerequisite: MATH 102 (C or better required) or equivalent

3 credits (3 lecture hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics.

**MATH 123 – ELEMENTARY STATISTICS**

Topics include: Sampling methods; Graphical representation of data; Descriptive statistics; Normal distribution; Hypothesis testing; Confidence intervals; Nonparametric techniques; t-tests; Correlation and regression. Chi-Square Applications in the healthcare professions will be emphasized. Excel will be used for calculations and analysis. This course is appropriate for health care majors. Students may not take MATH 123 if credit has been received for MATH 141, or equivalent, without permission from instructor.

Prerequisites: MAGN 101 (C or better) or equivalent, or placement into MATH 102 or higher

3 credits (3 lecture hours)

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics.

**MATH 141 - STATISTICS**

Topics include: Graphical representations, Measures of central tendency and dispersion; Probability; Normal distribution; Central limit theorem; Hypothesis testing; Confidence intervals; Regression-correlation; (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.) Students may not take MATH 141 if credit has been received from MATH 123.

Prerequisite: MATH 102 (C or better required) or equivalent, or placement into MATH 103 or higher

3 credits (3 lecture hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics.

**MATH 145 - DISCRETE MATHEMATICS**

Primarily for students in Computer Science and Computer Information Systems curricula or others with permission. Topics include: Logic; Set theory; Introduction to combinatorics; Relations and functions; Introduction to graph theory. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)

Prerequisite: MATH 102 (C or better required) or equivalent, or placement into MATH 103 or higher

3 credits (3 lecture hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics.

**MATH 147 - SELECTED TOPICS IN PRECALCULUS**

Topics include: Functions and their inverse; Polynomial functions; Operations on complex numbers; Rational functions and their graphs; Trigonometric identities; Inverse trigonometric functions; Trigonometric equations. Emphasis on calculator solutions. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)

Prerequisite: MATH 103 (C or better required) or equivalent

3 credits (3 lecture hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics.

**MATH 149 - ELEMENTARY LINEAR ALGEBRA**

Basic elements of linear algebra, an area of mathematics with applications in a wide variety of fields. Topics include: Systems of linear equations including matrix solution using Gauss-Jordan elimination; Matrix operations; Inverse; Computations via calculator; Determinants; The vector space, linear combinations and independence, span, basis; Dot and cross product; Eigenvalues and eigenvectors. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)

Prerequisite: MATH 103 (C or better required) or equivalent, or placement into MATH 147 or higher

3 credits (3 lecture hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics.

**MATH 151 - ANALYTIC GEOMETRY AND CALCULUS I**

Topics include: Introduction to limits and continuity; Derivatives of algebraic functions: definition and notation, differentiation rules, implicit differentiation; Applications of the derivative: slope, velocity and acceleration, rate of change, related rates, curve sketching, and optimization; Integration: notation and terminology, definite and indefinite integrals; The Fundamental Theorem of Calculus; Applications Integration by substitution. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)

Prerequisite: MATH 147 (C or better required) or equivalent

3 credits (3 lecture hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics.
MATH 152 - ANALYTIC GEOMETRY AND CALCULUS II
Topics include: Differentiation and integration of logarithmic, exponential and inverse trigonometric functions; Applications including growth and decay, finding areas, volumes, centroids, fluid pressure, work, and arc length; Techniques of integration; Indeterminate forms with L’Hospital’s Rule; Improper integrals. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)
Prerequisite: MATH 151 (C or better required) or equivalent
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics

MATH 153 - BUSINESS CALCULUS
This course is an introduction to differential and integral calculus with particular emphasis on applications in business and related areas. Topics include: Functions (polynomial, rational, exponential and logarithmic); Continuity; Limits; Derivatives and differentiation techniques; Marginal analysis; Curve sketching techniques; Optimization; Interest, Integrals and integration techniques; Fundamental Theorem of Calculus: Area between curves; Future value of a continuous income stream. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)
Prerequisite: MATH 147 (C or better required) or equivalent, or placement into math 151 or higher (If credit has been received for MATH 151, or equivalent, then permission must be obtained by instructor to register for MATH 153.)
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics

MATH 161 - ENGINEERING CALCULUS I
Topics include: Review of algebra and analytic geometry; Concepts of limit and derivative of a function; Differentiation and integration of algebraic functions; Differentiation of trigonometric and logarithmic functions; Applications to engineering. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)
Prerequisite: Entrance requirements for Engineering Science
4 credits (5 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics

MATH 162 - ENGINEERING CALCULUS II
Topics include: Derivatives and integrals of inverse trigonometric functions; Applications of integration and integration techniques; Infinite series; Parametric equations and polar coordinates; Applications to engineering. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)
Prerequisite: MATH 161 (C or better required)
4 credits (4 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics

MATH 261 - DIFFERENTIAL EQUATIONS
Topics include: Ordinary differential equations and their solutions; Classical solutions of linear differential equations; Solutions by use of series and by Laplace transforms; Matrix procedures with solutions to linear systems of differential equations using eigenvalues: Introduction to partial differential equations; Applications in the field of chemistry, physics and engineering. (TI-83 plus or TI-84 plus required, TI-Nspire or similar calculator is not allowed.)
Prerequisite: MATH 261 (C or better required)
4 credits (4 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Mathematics

MECHANICAL ENGINEERING TECHNOLOGY
MECH 101 - MACHINE TOOLS
Basic principles, capabilities and limitations of machine tools, theory of single and multiple point cutting tools and metal removal. Machine operations and setup, measuring devices, safety and use of hand tools.
Co-requisite: MAGN 101 and MFG 110 or permission of instructor
3 credits (2 lecture hours, 3 laboratory hours), spring semester

MECH 103 - MACHINE SHOP PRACTICES
Types of tools used in machine shops, with hands-on experience. Machining of several simple small parts, with methods of machining being more important than accuracy, surface finish, etc.
1 credit (1 lecture hour, 3 laboratory hours), 8 weeks, fall semester

MECH 120 - ENGINEERING MATERIALS
A study of material properties, limitations, processing, testing, and specification. Course includes plastics, metals, ceramics, composites, cements and other important engineering materials.
3 credits (2 lecture hours, 3 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

MECH 211 - ANALYTICAL MECHANICS (STATICS)
Development of the various analytical methods to determine force acting on a particle of rigid body at rest, in a plane or in space. Determination of forces in transmission lines, cables, trusses, machine components and structures. Forces introduced as a result of friction and location of first and second moments. Spreadsheet of software applications.
Prerequisite: PHYS 107 (C or better required)
Co-requisite: MATH 103
3 credits (2 lecture hours, 1 recitation hour), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

MECH 212 - MECHANICAL DESIGN
Study of translation and rotation plane motion of machine elements. Graphical kinematic analysis including absolute and relative velocities, with CAD and spreadsheet applications. Mechanical component analysis and selection to include cams, gears, chain drives, and belt drives.
Prerequisites: CAD 186, MECH 211
4 credits (3 lecture hours, 2 laboratory hours), spring semester

MECH 213 - STRENGTH OF MATERIALS
Physical properties of engineering materials including relationships between stress and strain, beam design, riveted joints, torsion of shafts, column buckling and the impact loading of mechanical elements. Laboratories in
tensile, shear and bending tests as well as the use of electrical strain gages.

Prerequisite: MECH 211 (C or better required)
4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

MECH 233 - FLUID POWER AND CONTROL
A study of incompressible power systems. Including topics in power transmission, controls, circuit design and efficiency. Applications, as well as electrohydraulic control of discrete components and programmable systems.

Prerequisites: MATH 103, CAD 184 and PHYS 107
4 credits (3 lecture hours, 3 laboratory hours), spring semester

MUSIC

MUSI 101 - INTRODUCTION TO MUSIC AND ART
An overview of the stylistic and cultural elements of the great epochs of western civilization as expressed through its art and music.
3 credits* (3 lecture hours), fall semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

MUSI 102 - HISTORY OF JAZZ
A study of styles, backgrounds, playing and techniques in the different eras of jazz history from the 1890s to the present.
3 credits* (3 lecture hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

MUSI 105 EXPERIENCING MUSIC
An introduction to the appreciation of music as an art form, this course assumes no prior experience with the subject. Students will learn basic vocabulary and notation of music, along with concepts of pitch, melody, rhythm, musical forms, genres and instrumentation. They will develop basic knowledge, supported by listening, discussion and participation. History and culture will be related to the various musical attributes studied. Live music will be incorporated as much as possible into the musical experience.
3 credits* (3 lecture hours), fall or spring

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.

MUSI 150 - ENSEMBLE
Credit for successful participation in pep band, jazz lab, jazz singers or concert band. Tryout may be required. Courses below are for subsequent semesters.
1 credit, fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for ‘The Arts.”

MUSI 155 - ENSEMBLE
1 credit, fall or spring semester

MUSI 160 - ENSEMBLE
1 credit, fall or spring semester

MUSI 165 - ENSEMBLE
1 credit, fall or spring semester

Note: At least three credits from the following courses will satisfy the SUNY General Education requirement for “The Arts.”

MUSIC

MUSI 155 - ENSEMBLE
1 credit, fall or spring semester

MUSI 160 - ENSEMBLE
1 credit, fall or spring semester

MUSI 165 - ENSEMBLE
1 credit, fall or spring semester

NATURAL RESOURCES

CONSERVATION

NATR 100 - INTRODUCTION TO FORESTRY AND NATURAL RESOURCES
Field identification of important forest trees and shrubs, their growth characteristics and uses are introduced. Basic instruction is provided in forest management problems, forest measurement, utilization, forest ecology, silviculture, forest wetlands, natural resources recreation, wildlife conservation, urban forestry and natural resource organizations. Several field forestry exercises are used to provide students with practical experience.
3 credits (2 lecture hours, 3 laboratory hours), fall semester

NATR 101 - GENERAL ECOLOGY
Interrelationships among living organisms and their environment. Examines the nature of diversity, niche dimensions, species’ roles and habitats, organism adaptations, life histories, population dynamics, symbiotic relationships, biome and landscape ecology, and the impact of human activities, and extractive economies.
3 credits (3 lecture hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 110 - NATURAL RESOURCES MEASUREMENTS
Measurements of forest and wildlife resources, statistical analysis of data and presentation of results. Includes mapping, timber inventories, wildlife population surveys, and report writing.

Pre-requisite/Co-requisite: Completion of or testing out of MAGN 101 or by permission from the instructor.
3 credits (2 lecture hours, 3 laboratory hours), spring semester

NATR 115 - FOREST ECOLOGY
Physical and biological factors that affect the forest community are discussed. Emphasis is placed on forest ecosystem dynamics and developing a scientific basis for the cultural treatment of forest stands. Forest community interactions are discussed in detail. Specific types of old growth, wetland and eastern mesophytic forest communities are analyzed.

Prerequisite: NATR 100 or permission of instructor
3 credits (2 lecture hours, 3 laboratory hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 120 - INTRODUCTION TO RECREATION AREA MANAGEMENT
Basic principles of outdoor recreation and use of leisure time as applied to the development and management of park and recreation areas. Observations and analyses of local recreation areas, trail development and improvement activities.
3 credits (2 lecture hours, 3 laboratory hours), fall semester

NATR 130 - NORTH AMERICAN WATERFOWL
Identification, life histories, production areas, nuisance issues, and management of North American ducks, geese, swans and shorebirds. Course includes extensive field observation and maintaining field journals. This course is a certified NYS DEC Waterfowl ID Course and students may opt to take the exam to receive the certificate required to get an access permit for select National Wildlife Refuges and state lands open to waterfowl hunting.

Pre-requisite/Co-requisite: NATR 101 or by permission from the instructor.
1 credit (1 lecture hour) spring semester.
NATR 140 – GEOLOGY
Nature and origin of minerals and rocks, and the development of land formations with special emphasis on plate tectonics and associated phenomena. Agents of erosion and resulting land formations.
3 credits (2 lecture hours, 2 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 142 - PLANE SURVEYING
The principles of plane surveying are explored. Investigation is made of elementary field techniques and office procedures with emphasis on agricultural and conservation applications. Familiarization with various modern surveying instruments, analysis of error and survey computations is emphasized. Field work includes taping, profile and differential leveling, traversing and topographic mapping.
Prerequisite: MAGN 101 or equivalent
3 credits (2 lecture hours, 3 laboratory hours), fall semester

NATR 144 - SEMINAR IN ENVIRONMENTAL RESOURCES
Designed to inform the freshman Environmental Science student with the various options of study within the department and the career opportunities for each. Other presentations will deal with such topics as enhancing your classroom success, the pre-registration process, ethics, placement, letters of applications, resumes, interviewing techniques and meeting professionals from various environmental fields. Required for all freshman in the Environmental Sciences majors.
1 credit (1 hour recitation), fall semester

NATR 150 - AQUACULTURE
An introduction to the husbandry of aquatic organisms. Course places emphasis on rearing unit theory and management, stock inventory, growth projections, and water quality management. Laboratory exercises feature visits to state and commercial hatcheries, and hands-on activities at the Morrisville State College Aquaculture Center.
Co-requisites: MAGN 101, COMP 101
3 credits (2 lecture hours, 4 laboratory hours), fall semester

NATR 152 - FISH REPRODUCTION
This course explores fish reproductive strategies and their management implications; topics include: modes and requirements of reproduction, embryology, induced spawning techniques, genetics, hybridization and genetic engineering. Laboratories include manual spawning of salmon and trout, and egg inventory.
Prerequisites: NATR 150, NATR 252
2 credits (1 lecture hour, 2 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 156 - AQUACULTURE PRACTICUM I
Hands-on experience in aquaculture facility management with emphasis on daily routine and records keeping. Care of cultured fish and plants, facility maintenance, including fish stock inventory, water quality management, and shipping and transporting fish.
Corequisite: NATR 150 or permission of instructor
1 credit fall or spring semester

NATR 158 - FISH NUTRITION
Introduction to the nutritional requirements of fish. Emphasis is placed on natural and artificial feeding of fishes, digestive physiology and anatomy, nutritional requirements and deficiencies, and feed formulation. Laboratories include hands-on study of fish digestive anatomy, and the calculation of feed rations.

Prerequisite: MAGN 101, NATR 150
Co-requisite: NATR 252
2 credits (1 lecture hour, 3 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement.

NATR 160 - PRINCIPLES OF ARBORICULTURE
Introduction to the art, science and technology of woody plant health care. Emphasis on the care of landscape trees and shrubs in residential, campus and municipal settings. Major topics include tree mechanics, pruning and training trees; cabling; risk tree management; site evaluation and tree planting and establishment.
Co-requisite: NATR 161
2 credits (2 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 161 - PRACTICES OF ARBORICULTURE
Practical education and experience in the establishment and care of trees and shrubs in the landscape. Emphasis on individual and small groups of plants in residential, campus and municipal settings. Students work in teams under close supervision. Major activities include pruning, climbing with rope and saddle, and risk tree evaluation.
Co-requisite: NATR 160
1 credit (3 laboratory hours), spring semester

NATR 210 - DENDROLOGY
Field study, identification, taxonomy and natural history of more than 100 important forest trees and shrubs of North America.
3 credits (2 lecture hours, 3 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 211 - FOREST PROTECTION
Overall view of the agents damaging the forest, meteorology, insects, disease causing organisms, IPM, fire behavior and control. Development of control measures.
3 credits (3 lecture hours), spring semester

NATR 213 - BASICS OF GEOSPATIAL TECHNOLOGY
This course involves a basic introduction to geospatial technology with focus on the practical applications of geographic information (GIS) and global positioning systems (GPS) in mapping natural and renewable resources. The basic principles of GIS and GPS are discussed with emphasis on computer-assisted mapping. Focus will be on running ArcGIS and its application in a number of assigned class projects. Students are also expected to understand how to conduct surveys using both standard and real-time differential GPS as well as generate thematic maps. GPS measurements and digital orthoimages are utilized in creating geographically-referenced, spatial data which forms the basis for geospatial analysis, the primary focus of the newly proposed NATR 216.
Prerequisite: NATR 142, AGEN 151, or permission of instructor
1 credit (1 lecture hour, 2 laboratory hours), 8-week course, spring semester

NATR 215 - PRACTICES OF SILVICULTURE
Application is made of Silvicultural techniques for tending the forest stand in order to meet the objectives of the forest owner utilizing the principles of forest ecology. Emphasis is on understanding the forest ecosystem and the impact of cultural practices such as thinning, harvest cutting, timber stand improvement and stand regeneration.
Prerequisite: NATR 110 and NATR 115
Co-requisite: NATR 213
3 credits (2 lecture hours, 3 laboratory hours), spring semester
NATR 216 - BASICS OF GEOSPATIAL ANALYSIS
This course involves a basic introduction to geospatial analysis with emphasis on the practical applications of geographic information and global positioning systems. The basic principles of geospatial analysis and remote sensing are discussed with focus on some general applications that pertain to natural and/or renewable resource system(s). Evaluations of various situations are accomplished through a number of general class projects and one final case study project to be assigned by the instructor based on each student’s area of interest. Emphasis will be on running ArcGIS and its application to the assigned class projects. Students are also expected to understand how to navigate using both standard and real-time differential GPS. GPS measurements and digital orthoimages are especially useful in creating geographically-referenced, spatial data which are required for performing geospatial analysis.

Co-requisite: NATR 213
1 credit (1 lecture hour, 2 laboratory hours), 8-week course, spring semester

NATR 221 - INVASIVE SPECIES MANAGEMENT
Biology, impact and management of invasive species found in or threatening New York State. Terrestrial and aquatic plants, animals (including insects), and diseases are discussed. Classroom focus is on pathways, factors leading to invasion, impact, management and control strategies, and restoration options. Laboratories will involve hands-on surveying and management efforts.

Pre-requisite: NATR 101 or similar, or by permission from the instructor.
3 credits (2 lecture hours, 3 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 232 - WILDLIFE ECOLOGY AND MANAGEMENT
A study of the art and science of wildlife management, including topics pertinent to understanding wildlife populations, their habitats, their ecology and management. Laboratories emphasize identification and life histories of principle North American mammals and game birds, specimen preparation, collection techniques, cover mapping, and habitat manipulation.

Pre-requisites: NATR 101 or permission of the instructor
Co-requisite: NATR 213
3 credits (2 lecture hours, 3 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 246 - INTERNSHIP IN NATURAL RESOURCES
This course involves students working in an approved job in the natural resources industry, usually during the summer session. A journal, supervisor evaluation and comprehensive written report are required and upon completion of the internship.

Prerequisite: Completion of one semester in Natural Resources and permission of instructor
4 credits (12 weeks, 480 hours minimum), fall semester

NATR 250 - AQUATIC ECOLOGY
A study of the physical, chemical and biological interactions of freshwater environments throughout Central New York. Includes ecology, origins, communities and populations of lakes, streams, wetlands, and estuaries, and aquatic invasive species. Laboratories include identification of aquatic plants, invertebrates, reptiles and amphibians, habitat assessment, wetland delineation, and the use of bioindicators. Field studies are conducted on local streams, lakes and wetlands.

Prerequisite: NATR 101
3 credits (2 lecture hours, 3 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 252 - FISH ECOLOGY AND MANAGEMENT
A study of the morphology, biology, ecology, behavior, and taxonomy of fishes. Strong emphasis is placed on the identification of New York’s common freshwater and estuarine fish species. Other topics include systematics, reproductive ecology, population dynamics, fisheries management, and the application of seines, trap nets, gill nets, and electroshocking fishing gear.

Prerequisite/corequisite: NATR 101 or permission of the instructor
3 credits (2 lecture hours, 3 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 254 - FISH HEALTH MANAGEMENT
Capstone course in the Aquaculture series, dealing with the development and maintenance of hygienic culture facilities. The course progresses from disease and diagnostic theory, through pathogenic and parasitic agents, to chemical and cultural means of disease prevention and eradication. Laboratory exercises include necroptic and microbiologic techniques, pathogen and parasite identification, and chemotherapeutic treatments.

Prerequisites: NATR 150, NATR 252, BIOL 235, or permission of instructor
3 credits (2 lecture hours, 3 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

NATR 256 - AQUACULTURE PRACTICUM II
A continuation of the Aquaculture Practicum series, addressing advanced methods in aquaculture, including fish handling, incubation and early-rearing of fish stocks, feed ration calculations, grow out projections, and harvesting and shipping of fish.

Prerequisite: NATR 156, MAGN 101
Co-requisite: NATR 158
1 credit, fall or spring semester

NATR 257 - AQUACULTURE PRACTICUM III
In this continuation of the Aquaculture Practicum series, the student assumes the role of a fish hatchery crew supervisor. In supervising the daily routine of work crews, the student develops mentoring and leadership skills. Additional competency is developed in grow-out, harvesting, fish sales, and delivery.

Prerequisite: NATR 256
1 credit, fall or spring semester

NATR 258 - AQUACULTURE PRACTICUM IV
Final course in the Aquaculture Practicum series. Students will continue to develop and apply mentoring and leadership skills in the management of the Morrisville State College Aquaculture Center. AP IV students will plan and implement work schedules of AP I-III students, conduct performance evaluations, determine feed orders and supply budgets, and develop long-range strategic plans for the AQ Center.

Prerequisite: NATR 257
1 credit, fall or spring

NATR 261 - ADVANCED PRACTICES OF ARBORICULTURE
This course will include advanced arboriculture knowledge and skills associated with hazard tree identification, tree pruning, climbing with a rope and saddle, and use of tree pruning equipment. Students will additionally gain leadership skills by mentoring NATR 161 students by acting as crew leaders for projects, assisting them with skill development, and demonstrating arboriculture skills.

Prerequisite: B or higher in NATR 160 and NATR 161 or with instructor’s permission.
1 credit (2 laboratory hours), spring semester
NURS 100 - HOLISTIC HEALTH
This course explores the many facets of holistic health as it pertains to ourselves. Topics to be covered include body and mind connection, stress management, exercise, nutrition, meditation, visualization and global effects on health. Open to all majors.
No prerequisite required.
3 credits (3 hours per week of lecture for 15 weeks)

NURS 101 - SKILLS FOR SUCCESS IN NURSING
This course will address effective study skills focusing on time management. Other topics include test taking strategies and study habits for nursing students, including the use of library resources and the application of technology. The demonstration of proper use of math concepts as applied to drug calculations specifically use in the health care profession will also be required.
This course is open to students enrolled in nursing.
1 credit (2 lecture hours per week for 8 weeks), fall/spring semester

NURS 105 - FUNDAMENTALS OF NURSING 1A
This course provides the theoretical foundation for nursing education and practice including the nursing process with emphasis on the assessment phase. Theory of therapeutic communication techniques and basic human needs across the life span are correlated to general knowledge of the biologic sciences and humanities. Standards for professional nursing practice are defined. The concept of critical thinking as it applies to health care is introduced. Students learn nursing procedures in a campus laboratory setting utilizing medical technology to complete accurate nursing assessment.
Pre or Co-Requisites: BIOL 150, COMP101, PSYC 101
3 credits (4 lecture hours, 5 college laboratory hours per week for the first 7 weeks of the fall or spring semester)

NURS 152 - PHARMACOLOGY I
This first course in the series presents concepts of the study of drugs used for the prevention, treatment, and diagnosis of disease and symptoms associated with common health alterations. Principles of action, uses, and side effects are discussed to facilitate the student's learning in the clinical environment. Information is presented by integrating pharmacology into the nursing process. Specific drug information is discussed in relation to assessment, nursing diagnosis, client monitoring, and interventions of safe and effective drug therapy. The concepts presented will focus on the common health problems and psychiatric health problems encountered across the lifespan. Specific nursing responsibilities related to drug administration, including real world dosage calculations across the life span, are emphasized. Some specific topics discussed in this course will include the pharmacological treatment used for psychiatric disorders, cancer, infection, common respiratory and GI/GU disturbances, and diabetes.
Pre-requisite- NURS 110 with a C+, Co-requisite- NURS 150
1 credit (1 lecture hour), fall and spring semesters

NURS 160 - ENHANCED CLINICAL I
An elective intensive clinical focused course offered at an affiliated, acute care health facility to increase the clinical confidence level of the beginning second year nursing student by providing continuity of care and expanding on the number and variety of patient care opportunities. Grading is pass/fail.
Prerequisite: NURS 150 with a C+ or permission of faculty.
2 credits (30 hours/week of clinical laboratory for 2 consecutive weeks)

NURS 200 - CLINICAL SIMULATION
This hybrid clinical simulation course is designed to incorporate the student's previous knowledge of disease processes, nursing theory and nursing skills for diverse simulated patient care experiences. Emphasis is placed on developing the knowledge, skills and attitudes the student would need to deliver safe, holistic, evidence-based and competent care to the patient. Critical thinking skills are applied to all phases of the nursing process to develop cognitive, affective, and psychomotor skills. The student will collect, analyze and interpret patient data in an environment where mistakes can occur without adverse consequences to the patient. At the conclusion of each simulation
and learning contracts, and peer review.
through the development and evaluation of self-learning needs assessment
skills. Students participate in activities that support lifelong learning
in learning experiences that enhance team building and conflict resolution
design, implementation and evaluation of holistic care. Students participate
in the acute care practice setting. Critical thinking skills are applied to the
health problems across the life span. Students are afforded the opportunity
supports the holistic care of individuals with multiple complex common

NURS 210 - NURSING CARE OF THE INDIVIDUAL
WITH COMMON COMPLEX HEALTH PROBLEMS
This course provides the theoretical foundation for nursing knowledge that supports the care of individuals across the life span with common complex health problems and of families in a variety of practice settings including acute care, obstetric and community health agencies. Students apply critical thinking skills to design, implement and evaluate nursing care with a particular focus on patient education to individuals and families. Therapeutic communication skills are enhanced through a variety of interactive learning strategies. Technology is applied to the research process as well as the delivery of care.

Prerequisite: NURS 150 with a grade of C+ or better
2 credits

NURS 212 - PHARMACOLOGY II
This second course in the series presents concepts of the study of drugs used for the prevention, treatment, and diagnosis of disease and symptoms associated with complex common health alterations. Principles of action, uses, side effects, and client education are discussed to facilitate the student’s learning in the clinical environment. Information is presented by integrating pharmacology into the nursing process. Specific drug information is discussed in relation to assessment, nursing diagnosis, client monitoring, and interventions of safe and effective drug therapy. Client education takes on an increased focus to facilitate the student’s ability to convey application of concepts to the public. The concepts presented will focus on the complex common health problems across the lifespan and obstetric care. Specific nursing responsibilities related to drug administration, including real world dosage calculations across the life span, continue to be emphasized. Some specific topics discussed in this course include the pharmacological treatment used for eyes, ears, obesity, electrolyte and acid/base imbalances, various cardiac issues, male and female reproductive disorders, labor, delivery, postpartum, and newborn care.

Pre-requisite: NURS 150 with a C+, Co-requisite: NURS 210
1 credit (1 lecture hour), fall and spring semesters

NURS 220 - ENHANCED CLINICAL II
An elective intensive clinical focused course offered at an affiliated, acute care health facility to increase the clinical competence of the second-year nursing student by providing priority based care to a group of patients with complex common health problems. Grading is pass/fail.

Prerequisite: NURS 210 with a C+ or permission of faculty.

NURS 250 - NURSING CARE OF THE INDIVIDUAL
WITH MULTIPLE COMMON COMPLEX HEALTH
PROBLEMS
This course provides the theoretical foundation for nursing knowledge that supports the holistic care of individuals with multiple complex common health problems across the life span. Students are afforded the opportunity to manage the care of groups of individuals with multiple complex needs in the acute care practice setting. Critical thinking skills are applied to the design, implementation and evaluation of holistic care. Students participate in learning experiences that enhance team building and conflict resolution skills. Students participate in activities that support lifelong learning through the development and evaluation of self-learning needs assessment and learning contracts, and peer review.

Own transportation required for the last 8 weeks.
Prerequisites: NURS 210 (with a C+ or better), Pre-or Co-Requires NURS 251.
8 credits (4 lecture hours, 8 clinical laboratory hours), fall or spring semester

NURS 251 - TRANSITION INTO PRACTICE
This course assists the students in role transition from student nurse to graduate nurse by offering learning opportunities through a seminar format on a broad range of topics that support professional nursing practice. Topics include resume writing, interviewing, health care delivery models and trends, leadership management, ethics and self-care. Students practice skills for lifelong learning by researching and presenting peer reviewed group projects.

This course may be delivered in an on-line format.
Co-requisite: NURS 250
2 credits, spring or fall semester

NURS 252 - PHARMACOLOGY III
This final course continues to present concepts of the study of drugs used for the prevention, treatment, and diagnosis of disease and symptoms associated with multiple complex common health alterations. Principles of action, uses, side effects, and client education are discussed to facilitate the student’s learning in the clinical environment. Information is presented by integrating pharmacology into the nursing process. Specific drug information is discussed in relation to assessment, nursing diagnosis, client monitoring, interventions, and client education. Evaluation of medication use and administration is incorporated to expand the knowledge of care of the client. The concepts presented will focus on multiple complex common health problems encountered across the lifespan. Specific nursing responsibilities related to drug administration, including real world dosage calculations across the life span continue to be emphasized. Some specific topics discussed in this course will include the pharmacological treatment used for critical care needs, autoimmune disorders, renal disorders and dialysis, HIV/AIDS, infectious, and degenerative neurological disorders, seizures, headaches, pancreatic and liver disorders, burns, endocrine disorders, respiratory, cardiac and hematological disorders.

Pre-requisite: NURS 210 with a C+
Co-Requisite: NURS 250
1 credit (1 lecture hour), fall and spring semesters

NURS 256 - PHARMACOLOGY IN NURSING CARE
This elective course presents concepts of the study of drugs used for the prevention, treatment, and diagnosis of disease and symptoms associated with health alterations. Principles of action, uses, side effects and client education are discussed to facilitate the student’s learning in the clinical environment. Information is presented by integrating pharmacology into the nursing process. Specific drug information is discussed in relation to assessment, nursing diagnosis, client monitoring, interventions, client education and evaluation of safe and effective drug therapy. Specific nursing responsibilities related to drug administration, including actual dosage calculations across the lifespan are emphasized.

Pre-Requisites: NURS 150 with a grade of a C+ or better
2 credits (2 lecture hours), fall or spring

NUTRITION
NUTR 108 - BASIC NUTRITION
Fundamentals of human nutrition including biological pathways of nutrients from digestion to metabolism. Computer analysis of personal nutrient intake. Emphasis on nutrition and consumer trends as well as personal wellness and fitness.
3 credits (3 lecture hours), fall and spring semester
NUTR 110 - NUTRITION I
Nutrient and food energy needs of the human biological system. Body processes in the digestion, absorption and utilization of nutrients. Dietary guides for planning nutritionally balanced menus.
Prerequisite: Admission to the dietetic technician, sports nutrition and fitness management, or nursing program or permission of the instructor.
3 credits (3 lecture hours), fall and spring semester

NUTR 115 - HEALTH FIELD
Introduction to health care field, team approach to total health care. Menu development and role of the nutrition professional in trend promotion and management. Exploration of career options. Project work in computerized Nutrition and Wellness Analysis Programs. Laptop computer required.
Pre- or Co-requisite: NUTR 110
2 credits (1 lecture hour, 1 laboratory hour), fall semester

NUTR 160 - DIET THERAPY
Diet therapy for disease and special conditions. Application of Academy diet principles. Menu planning and menu corrections for various disease states. Physiological reasons for the use of modified diets and nutritional needs of the body during illness.
Co-requisite: NUTR 170
Prerequisite: C or better in NUTR 108 or NUTR 110
3 credits (3 lecture hours, 1 hour recitation), spring semester

NUTR 170 - SUPERVISED FIELD EXPERIENCE I
Nutrition assessment and food production experience with various free-living and institutionally-based populations under the supervision of a Registered Dietitian. The course emphasizes an introduction to assessment and application of theory. Weekly conference hour. Transportation to and from field experience sites. Approved uniform required.
Prerequisites: C grade or better in NUTR 108 or 110, NUTR 115, FSAD 101, FSAD 102
Co-requisite: NUTR 160
3 credits (6 practical hours, 1 lecture hour), spring semester

NUTR 210 - LIFE CYCLE NUTRITION
Nutrition applied to individuals throughout the life span, including pregnancy and lactation, infancy and childhood, adolescence, adulthood and the aged. Emphasis on prevention and wellness models of care.
Prerequisite: C or better in NUTR 108 or 110 and NUTR 160
3 credits (3 lecture hours), fall semester

NUTR 219 - ORIENTATION TO SUMMER FIELD EXPERIENCE
This course is designed to orient the student for successful completion of the 150 supervised practice hours required for NUTR 220 - Summer Supervised Field Experience. The orientation process will assist the student in developing a realistic timeline, to prepare them for meeting the responsibilities of an intern and exposing them to the various forms and reports related to the summer field experience. This course must be successfully completed during the Spring semester prior to the summer field experience.
Pre- or Co-requisite: NUTR 160 and NUTR 170
1 credit (1 lecture hour), spring semester

NUTR 220 - SUMMER SUPERVISED FIELD EXPERIENCE
Summer-supervised experience in an appropriate nutritional services department or program. Emphasis is on practical application of theory.
Prerequisite: C or better in NUTR 160, NUTR 170 and NUTR 219
2 credits, fall semester

NUTR 225 - EDUCATIONAL METHODS FOR THE FOOD AND HEALTH CARE FIELDS
Presentation of basic concepts in the educational process through communication skills. Includes: interviewing, writing, presentation and evaluation techniques needed in the Food Service Industry and Health Care fields.
Prerequisite: Senior standing in food or health care curriculum or permission of the instructor.
3 credits (2 lecture hours, one 2 hour recitation), fall semester

NUTR 230 - SUPERVISED FIELD EXPERIENCE II
Prerequisites: C or better in NUTR 160, NUTR 170 and NUTR 220
3 credits (6 practical hours, 1 lecture hour), fall semester

NUTR 250 - SPORTS NUTRITION
Application of basic nutrition principles in the development of a total wellness and fitness program and the impact of nutrition on physical activity. Assessment of levels of physiological fitness and nutritional well-being. Prescriptive requirements for nutritional intervention in a total fitness program. Nutrient needs for fitness through the life cycle. Evaluation of current research data regarding nutrition intervention and practices for total health and physical well-being.
Prerequisite: C or better in NUTR 108 or 110
3 credits (3 lecture hours), spring semester

NUTR 260 - MEAL MANAGEMENT: SPA CUISINE
Meal preparation and service with emphasis on meeting spa cuisine parameters are covered in this course, as well as utilizing principles of recipe modification in food preparation and computerized dietary analysis. Presentations focus on current trends in marketing of healthful menus and recipe modification and development.
Prerequisites: FSAD 102 & 255, NUTR 110, NUTR 115 and C or better in NUTR 225
3 credits (1 lecture hours, 4 laboratory hours), spring semester, laboratory fee required. Approved uniform required.

NUTR 270 - SUPERVISED FIELD EXPERIENCE III
Community and food and nutrition experiences in various institutional and agency settings. Application of nutritional principles and assessment skills for various stages of the life cycle. Planning, implementing and assessing nutrition education for target groups.
Students are responsible for arranging their own transportation to the field experience sites
Prerequisites: C or better in NUTR 210, NUTR 225, and NUTR 230
3 credits (6 practical hours, 1 lecture hour), spring semester

OFFICE ADMINISTRATION
OFFT 100 - INTRODUCTION TO WORD PROCESSING SOFTWARE
This hands-on course introduces the concept of using word processing software to create letters, memos, reports and other documents in a timely manner. Documents will be created with graphs, charts, and tables to make it easier to convey information. The course will also cover using borders, shading, bullets, spell check, and creating envelopes and labels. Window explorer is used to help students organize their files.
1 credit (3 lecture hours), spring and fall semesters, five weeks
OFFT 106 - PERSONAL COMPUTER KEYBOARDING
The module includes learning the keyboard by touch, learning the use of computer features, and developing proper stroking techniques. Basic letter and report formatting are included. This course is directed to non-office technology majors.
1 credit (2 lecture hours), fall or spring semester, eight weeks

OFFT 108 - INTRODUCTION TO PERSONAL MANAGEMENT SOFTWARE
This hands-on course introduces the concepts of using personal management software as a management tool to organize and manage personal and business information. This tool consists of creating e-mail messages, signatures, distribution lists, contacts, calendar, tasks, notes, and journal.
1 credit (3 lecture hours), spring and fall semesters, five weeks

OFFT 109 - INTRODUCTION TO PRESENTATION SOFTWARE
This hands-on course introduces the concepts of using presentation software to communicate effectively with an audience. The course will cover the basics of creating a presentation, using the design templates, adding text, tables, graphs, transition and animation to slides, formatting and printing of the presentation to be used as handouts.
1 credit (3 lecture hours), spring and fall semesters, five weeks

OFFT 110 - INTRODUCTION TO SPREADSHEET SOFTWARE
This hands-on course introduces the concept of using spreadsheets, lists and charts. The course will cover basic data entry into worksheets, formatting the worksheets, using formulas, and creating charts. Spreadsheets provide the tools needed to manage, present and analyze numeric data for personal or business use.
1 credit (3 lecture hours), spring and fall semesters, five weeks

OFFT 111 - KEYBOARDING 1-A
Development of basic keyboarding techniques on computers, including learning the keyboard by touch, learning the use of the computer features/commands and developing proper techniques. Basic letter formatting is included.
1 credit (2 lecture hours), fall and spring semesters, eight weeks.

OFFT 112 - KEYBOARDING 1-B
This course covers the development of computer keyboarding skills as well as speed and accuracy. Basic business/personal letters from text copy and script with envelopes, memos and tables are also covered. Students will also develop proofreading skills and use Macintosh software.
Prerequisite: OFFT 111 with minimum grade of C or permission from instructor for OFFT majors; minimum grade of D for all other majors
1 credit (2 lecture hours), fall and spring semesters, eight weeks.

OFFT 113 - KEYBOARDING 2-A
Development of computer keyboarding skills in the production of diverse business letters and memo forms, complex tabulations, reports and manuscripts are covered in this course. Further development of speed and accuracy on production and straight-copy typing is also covered. Word software is used.
Prerequisite: OFFT 112 with minimum grade of C or permission from instructor for OFFT majors; minimum grade of D for all other majors
1 credit (2 lecture hours), spring semester, eight weeks

OFFT 114 - KEYBOARDING 2-B
The development of computer keyboarding skills in the production of business forms and templates such as purchase orders, form letters, business, standard and academic reports are covered in this course. Word software is used in this course, which also covers further development of speed and accuracy on production and straight-copy typing.
Prerequisite: OFFT 113 with minimum grade of C or permission from instructor for OFFT majors; minimum grade of D for all other majors
1 credit (2 lecture hours), spring semester, eight weeks

OFFT 116 MEDICAL KEYBOARDING
Full semester, on-line course covering development of basic keyboarding techniques, including learning the keyboard by touch, learning to operate the computer and its menus, icons, and functions, and developing proper stroking techniques. Students learn the proper formatting of various medical documents including Chart Notes, X-Ray Reports, Consent Forms, History/Physical Forms, Single-Page and Two-Page Letters, and Two-Page Assessments and Referrals.
2 credits (2 lecture hours), fall and spring semesters

OFFT 117 - OFFICE ADMINISTRATION ORIENTATION
This course is for all incoming Office Administration majors (including Medical Office Administration) only. Topics include researching occupational skills required for today's office administrative assistant, attending Career Fairs, attending one SGO meeting, preparing for Portfolio Day, discussing key items to prepare for upcoming internships, and understanding philosophies that are helpful to keeping your job once companies downsize and/or merge. Students also receive thorough instruction within Webmail, Outlook, customer service techniques, telephone etiquette, resume writing, Blackboard participation. Lectures will review career opportunities in a wide range of office administration professions with the help of many invited guest speakers and shadowing opportunities. OFFT AAS Degree Majors only (including Medical Office Admin AAS Degree)
1 credit hour, 3 lecture hours per class meeting – class will meet at Morrisville's campus every third week of the Fall Semester. Required of all Office Admin (Medical Office Admin) majors in their first or second Fall semester enrolled in the program. THIS IS NOT AN ONLINE CLASS - Student must have ability to come to Morrisville State College's main campus.

OFFT 120 - DOCUMENT DESIGN FOR EFFECTIVE COMMUNICATIONS
This introductory course in word processing/information processing emphasizes formatting mailable copy, punctuation, spelling and proofreading. Development in complex tabulations, report formatting, column writing and designing letterhead as announcements as well as press releases and many other marketing documents used in today's business are also covered. Many Microsoft shortcuts/commands are emphasized to increase the productivity of the student.
3 credits (3 lecture hours hours), spring semester

OFFT 130 - DATA ENTRY
Operating features of a microcomputer with practical business applications. Speed development of 10,000 keystrokes per hour.
1 credit, four laboratory hours, fall semester, eight weeks

OFFT 135 - MACHINE TRANSCRIPTION
Integration of keyboarding skills with the operation of a transcription machine. Reinforcement of basic English skills, including spelling, punctuation, grammar, paragraphing, sentence construction, and
proofreading skills. Mailable transcripts required for successful completion of the course.

Prerequisite: Successful completion of OFFT 112, or OFFT 116, or one year of high school keyboarding or permission of instructor
2 credits, 2 lecture hours fall semester

OFFT 200 – MEDICAL CODING

This is a beginning medical coding course designed to provide students with the essential information and working knowledge of health care coding systems used in billing insurance companies for medical services to ensure optimum reimbursement. The course offers practical and easy-to-follow instructions on how to code procedures and diagnoses using the CPT, ICD-9 and HCPCS systems. Other aspects of healthcare reimbursement will be covered such as HIPAA guidelines, abstracting information from patient records for correct placement on claim forms, inpatient and outpatient health care settings, and third party reimbursement issues.

Prerequisite: OFFT 250 Medical Terminology
3 credits (3 lecture hours), spring semester

OFFT 201 – OUTPATIENT BILLING

The course will focus on outpatient billing and accounting software. The student will learn to enter data into a computerized patient billing system, manage data, enter patient and case information, process transactions, process claims, create statements and produce reports.

Prerequisite: OFFT 250 Medical Terminology
2 credits (3 lecture hours) meets for 10 weeks, fall semester

OFFT 202 – INPATIENT BILLING

This course is designed to introduce the student to the basics of hospital billing and correct completion of the required claim form(s). Computer application is done using MediSoft’s Just Claims software.

Prerequisite: OFFT 250 Medical Terminology
2 credit hours – 10 weeks (3 lecture hours), spring semester

OFFT 210 - ADMINISTRATIVE SUPPORT STAFF PROCEDURES

Exploration of office operations and procedures, new developments in office information technology and equipment, communication transmittal systems, records management, and administrative office skills and responsibilities. Students will gain experience with voice digital recordings, facsimile, copy machines and telephones to better enhance their skill set.

Prerequisite: OFFT 112
3 credits (3 lecture hours), fall semester

OFFT 216 - PROFESSIONAL OFFICE PRACTICE SIMULATION

Working in a computerized professional model office. Administrative— handling telephone calls, incoming mail, transcription, correspondence, spreadsheet and database applications, records management, coordinating travel and conference plans and preparing reports. The topics include a brush up on English and keyboarding skills and career information. Legal—Legal transcription, calendaring, law office files, client and financial records, legal documents, litigation, office management and professional ethics. Medical—Transcription of patient records, telephone procedures, appointments, office files, financial and banking records, computerized medical billing.

Prerequisites: OFFT 114, or OFFT 116; OFFT 120; OFFT 220
3 credits (3 lecture hours), spring semester

OFFT 218 – MEDICAL OFFICE PROCEDURES

This course is designed to introduce students to the variety of tasks and skills required for an administrative medical assistant. Students will be able to understand medical ethics, bioethics, etiquette, legal responsibilities of the physicians, use computer software to schedule appointments, create and maintain patients medical records, bill and collect payment, and understand method the method of scheduling appointments. The procedures of banking and payroll are introduced as part of being an administrative medical assistant.

Prerequisite: OFFT 116 or permission of instructor
3 credits (3 lecture hours), fall semester

OFFT 220 – DOCUMENT DESIGN FOR BUSINESS ANALYSIS

This course involves learning Microsoft Excel and Access skills. It includes topics such as merge, sort, charts, filtering, pivot tables, queries, designing your own table, etc. Students gain experience and understanding of versatility within the databases.

3 credits (3 lecture hours), fall semester

OFFT 235 - MEDICAL TRANSCRIPTION

This is a beginning medical transcription course designed to provide students with a working knowledge of the transcription of medical documents, including x-ray reports, chart notes, history and physical reports, consultations, office procedures notes, progress notes and letters. The goal of this course is to develop transcribing speed and accuracy, gain skills in editing and proofing documents, and increase knowledge of medical terminology.

Prerequisites: OFFT 116, OFFT 135, and OFFT 250
3 credits (3 lecture hours), spring semester

OFFT 250 – MEDICAL TERMINOLOGY

This is a full semester course designed to instruct students in the various medical terminology used in medical environments today. Students learn how to pronounce and spell medical terms correctly, understand “root” words, as well as prefixes and suffixes of various terms and also recognize and define terms pertaining to the sciences of the human body and fields of medicine.

3 credits (3 lecture hours), fall and spring semesters

OFFT 251 - OFFICE MANAGEMENT

A study of the operations, controls, problems, systems, and human relations in the changing electronic office age are included in this course. Topics include introduction of office management, human relations management, building an understanding of the management of office services, building an understanding of office systems, building an office management vocabulary, seeking employment as a supervisor/manager. Operation of office equipment, including word processors required.

Prerequisites: OFFT 112, and OFFT 120 and OFFT 220, or permission of instructor.
3 credits (3 lecture hours), spring semester

OFFT 291 - OFFICE TECHNOLOGY INTERNSHIP I

All second-year students are strongly encouraged or required to participate in this internship opportunity. Students must complete 45 hours within an office environment. Many of the offices that participate in this internship are on campus; however, students may also work off campus. The focus of this internship opportunity is not only to give students a greater understanding of working within a professional organization, but also to open doors for the students if an opening occurs in their internship office after graduation. Monitoring occurs during the 45-hour, one-credit internship experience whereby the Office Technology faculty meets both student and his/her Internship Supervisor at the office where the student is interning.

Prerequisite: OFFT majors only (including Medical Office Admin. AAS students); Office Technology sophomore student status and BSAD 140, OFFT 120, OFFT 220 (sophomore student status)
1 credit (45 hours per semester), fall and spring semester
OFFT 292 - OFFICE TECHNOLOGY INTERNSHIP II
Similar to OFFT 291 since it is an additional one-credit hour course (another 45 hours required) and is taken after a student has successfully completed OFFT 291. OFFT 292 allows a student an additional credit, and subsequently, additional working experience.
Prerequisite: OFFT 291
1 credit (45 hours per semester), fall and spring semester

OFFT 301- ADVANCED MEDICAL CODING
This course is designed to utilize the student’s previous learning experience to the variety of tasks and skills required for an administrative medical assistant dealing with coding. Students will be able to work on cases that are coded with service codes (CPT and HCPCS) and diagnosis codes (ICD-9-CM) in the outpatient settings of the clinic and outpatient departments of the hospital for both the physician and facility services.
Prerequisite: OFFT 200- Medical Coding
3 credits (3 lecture hours)

OFFT 335 - ADVANCED MEDICAL TRANSCRIPTION
This is an advanced medical transcription course whereby students gain competence in transcribing the advanced materials provided in the textbook, which more closely resemble on-the-job tasks than in the initial stages of learning medical transcription. This course has strong emphasis on editing and critical thinking activities.
Prerequisite: OFFT 235 Medical Transcription and OFFT 250 Medical Terminology, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

PHILOSOPHY

PHIL 201 - INTRODUCTION TO PHILOSOPHY
This course is an introductory study of both historical and contemporary approaches to the basic philosophical issues of knowledge, values, reality, matter, mind, soul, God.
3 credits (3 lecture hours), fall or spring semester (second-year students only)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

PHIL 211 - MODERN ETHICS
Examines problems of human conduct and reflective choices such as right and wrong, duty and conscience. Study and discussion center on human values, questions of morality versus legality, situation ethics and whether ends can justify means.
3 credits (3 lecture hours) fall or spring semester (second-year students only)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

PHIL 311 - PROFESSIONAL ETHICS
The objective of this course is to provide students with a realistic working model for ethical decision making in their professional field. Students will identify their existing set of moral values. From this basis, students will develop, refine, and evaluate their ethical stance based on the study of ethical theorists. The workable nature of their ethical approach will be tested through case studies, in-class discussion and written assignments.
Prerequisites: C or better in COMP 101, junior or senior standing and an introductory course in philosophy, or consent of instructor
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

PHYSICAL SCIENCE

PSCI 101 - PHYSICAL SCIENCE
For students with a limited background in the physical sciences and/or non-science majors. Disciplines include chemistry, physics, geology and astronomy. Demonstrations, field trips, class discussion and student prepared and presented papers.
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

PHYSICS

PHYS 107 - INTRODUCTORY PHYSICS I
An introduction into the concepts and methods of scientific inquiry illustrated using elements of classical mechanics complemented with laboratory experiments. Topics include translational and rotational motions of particles and rigid bodies, analyzed using simple algebra-based Newtonian kinematics, dynamics and statics, and conservation of energy and momentum.
Pre- or Co-requisite: MATH 102 or equivalent
4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

PHYS 108 - INTRODUCTORY PHYSICS II
An introduction into the concepts and methods of scientific inquiry illustrated using fundamentals of thermal physics and classical electromagnetism complemented with laboratory experiments. It includes a survey of thermodynamic variables and laws applied to ideal-gas processes and phase changes in matter. Also, it discusses electromagnetic interactions and fields exemplified using charge statics and dynamics, simple elements of electric circuits, and an excursion into the nature of light.
Pre-requisite: PHYS 107 or permission of instructor
4 credits (3 lecture hours, 2 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

PHYS 127 - GENERAL PHYSICS I
Units and dimensions, vectors, kinematics, Newton's laws, potential and kinetic energy, circular motion, linear and angular momentum, and rigid body motion.
Pre- or Co-requisite: MATH 103 or equivalent
4 credits (3 lecture hours, 2 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

PHYS 128 - GENERAL PHYSICS II
Concepts of heat, work, internal energy, heat transfer, and the first and second laws of thermodynamics. Simple harmonic motion, wave motion, harmonic waves, and superposition. Topics in electromagnetism. Properties of light include reflection, refraction, interference, diffraction, polarization, the electromagnetic spectrum, and optical instruments.
Prerequisite: PHYS 127 or permission of instructor
4 credits (3 lecture hours, 2 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

PHYS 157 - UNIVERSITY PHYSICS I (MECHANICS)
A calculus-based introduction to mechanics, this course emphasizes the study of motion of particles and of the forces responsible for such motion. Topics include dimensional analysis, vector analysis, rectilinear motion and motion in two and three dimensions, Newton's Law of Motion, universal
gravitation, and simple harmonic motion.

Pre- or Co-requisite: MATH 161 or equivalent
4 credits (3 lecture hours, 3 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

PHYS 267 - UNIVERSITY PHYSICS III (SOUND AND THERMODYNAMICS)
This course covers work and energy, impulse and momentum, rotational dynamics, elasticity and fluid mechanics, wave motion and selected topics in thermodynamics.
Prerequisite: PHYS 158
Pre- or Co-requisite: MATH 261
4 credits (3 lecture hours, 3 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

PHYS 158 - UNIVERSITY PHYSICS II (ELECTRICITY AND MAGNETISM)
Theoretical basis of electricity and magnetism with applications to circuits and electrical instruments. Coulomb’s law, the electric field, potential, Gauss’ law, electromagnetic force, capacitance, Kirchhoff’s laws, the magnetic field, Ampere’s law, induced fields, magnetic properties of matter, mutual and self-inductance, AC circuits. Finishes with an overview of Maxwell’s equations and electromagnetic waves.
Prerequisite: PHYS 157
Pre- or Co-requisite: MATH 162
4 credits (3 lecture hours, 3 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

PHYS 268 - UNIVERSITY PHYSICS IV (OPTICS AND MODERN PHYSICS)
Optics, including the nature and propagation of electromagnetic waves, Huygen’s principle, reflection, refraction, interference, diffraction and polarization. Topics from modern physics include special relativity, the wave-particle duality, atomic structure, the Bohr model, energy levels, spectra, elementary quantum mechanics, structure of the nucleus, radioactivity, nuclear reactions and reactors, and elementary particles.
Prerequisite: PHYS 158
Pre- or Co-requisite: MATH 262
4 credits (3 lecture hours, 3 laboratory hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science

PLASTICS TECHNOLOGY
PLAS 121 - INTRODUCTION TO PLASTICS
An introductory course covering: basic chemistry, plastics materials, product applications, processing methods, assembly and finishing techniques.
4 credits (3 lecture hours, 2 laboratory hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement.

PLAS 131 - PLASTIC PRODUCT & MOLD DESIGN
Basic principles of molded part and tooling design. An emphasis on injection molded parts and the steel molds in which they are made. The course culminates into a student designed mold to be built and used in the machine tools and plastics laboratories.
3 credit hours (2 lecture hours, 3 laboratory hours), spring semester

PLAS 221 - PLASTICS MANUFACTURING PROCESSES
This course applies the machining principles acquired in Manufacturing Processes I (MFG 221) toward the repair, machining and assembly of plastics tooling which was designed in Plastic Product and Mold Design (PLAS 131).
Prerequisite: PLAS 131
1 credit hour (3 laboratory hours), spring semester

PLAS 231 - PLASTICS PROCESSING I
Theory, operation and setup of major plastics production processes. These include injection molding, blow molding, extrusion, thermoforming, rotational molding, compression molding, and foaming processes. The processing of reinforced plastics is also covered.
Prerequisite: PLAS 121
4 credit hours (3 lecture hours, 3 laboratory hours), fall semester

PLAS 241 - PLASTIC MOLD CONSTRUCTION
A laboratory course which combines use of the machining and plastics laboratory operations. Students will build a mold, including its necessary related tooling, to produce a finished plastic part previously designed in the PLAS 131 course. The part is then produced in the plastics laboratory.
2 credit hours (6 laboratory hours), spring semester

PLAS 251 - PLASTICS PROCESSING II
The final course in the plastics curriculum. It covers the secondary processes of decorating and coating, finishing, and assembling of plastics products to conclude the final sequence of production. The basic concepts of statistical process control (SPC) and total quality management (TQM) are also introduced and the environmental aspects of plastics are examined.
Prerequisite: PLAS 231
2 credit hours (1 lecture hour, 3 laboratory hours), spring semester

POLITICAL SCIENCE
POLI 101 - AMERICAN NATIONAL GOVERNMENT
Topics include nature, functions and philosophy of the government of the United States, importance of the individual in the American constitutional system and the dynamic aspects of that structure.
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

POLI 111 - STATE AND LOCAL GOVERNMENTS
Topics include state and local government structures-grass roots politics, parties, and policies on state, county, city, township, village, and special district levels. Interrelationships, structures, functions, financing, problems and how they are approached today. Participation directly and indirectly in these governments by the average citizen.
3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

POLI 113 - AMERICAN JUDICIARY SYSTEM
This course introduces students to the operations of criminal, civil, and appellate courts and their key participants and includes an evaluation of the American Judiciary System.
3 credits (3 lecture hours) fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement.
POLI 151 – INTRODUCTION TO COMPARATIVE GOVERNMENT
This is an introductory course in comparative government that examines both the theoretical and real-life issues confronting governments today. It discusses such basic concepts as: the social contract, democracy, authoritarianism, capitalism, and socialism. Concepts and structures are presented in the context of actual contemporary (non-U.S.) world governments.
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Other World Civilization.

PSYCHOLOGY
PSYC 101 – INTRODUCTION TO PSYCHOLOGY
This course includes an introduction to the scientific study of behavior, mental processes, and the influences upon them. It also covers major theories and findings in psychology, including learning, cognition, abnormal psychology, and others.
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 103 - INTRODUCTION TO APPLIED PSYCHOLOGY
An introduction to the Applied Psychology major, the course discusses career options in psychology, and provides information on choosing and preparing for a career path with a psychology degree.
Prerequisite: Major in Applied Psychology; pre- or co-requisite PSYC 101

PSYC 161 – SOCIAL SCIENCE AND PSEUDOSCIENCE
This one-credit course provides an in-depth look at how social scientists collect and assess evidence for and against their theories. We will compare these methods to similar techniques from popular culture, particularly paranormal investigations.
1 credit (3 lecture hours), spring semester, total of 5 weeks
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 221 - BIOLOGICAL PSYCHOLOGY
This course is an introduction to the biological side of psychology. Students will gain knowledge of physiological processes and their relationship to human thought and behavior.
Prerequisite: Grade of “C” or better in Introduction to Psychology (PSYC101) and grade of “C” or better in Human Biology (BIOL 105) or the equivalents.
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 241 – CHILD DEVELOPMENT
A survey of the biological, cognitive, emotional, and social aspects of human growth and development from birth to adolescence. Special emphasis on contemporary theories.
Prerequisite: PSYC 101 or equivalent, or permission of instructor
3 credits (3 lecture hours), fall or spring semester.
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 242 - ADOLESCENT DEVELOPMENT
This course will focus on the general principles and theories of development during the adolescent period. Topics included are biological and cognitive processes, psychosocial development, identity and other special issues and concerns in adolescence.
Prerequisite: PSYC 101 or equivalent, or permission of instructor
3 credits
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 243 - ADULT DEVELOPMENT
This course covers the years between 18 and 50 are the center of life, a time of growth, opportunity, and crisis. It examines what philosophers, social scientists, psychologists and other human beings have theorized about the process of living and aging. Moral as well as personality insight and strategies for survival will be explored so that future coping with life’s changes will not be as isolating or overwhelming.
Prerequisite: PSYC 101 or equivalent or permission of instructor
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 251 - ABNORMAL PSYCHOLOGY
This course examines psychological disorders from a variety of perspectives. In addition to the usual survey of psychological disorders across diagnostic categories, it also considers the possible causes of psychological problems and a wide variety of therapeutic techniques used to treat them. The history and scientific underpinning of psychological diagnosis and treatment is also covered.
Prerequisite: PSYC 101 or equivalent, or permission of instructor
3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 255 - PSYCHOLOGY OF PERSONAL ADJUSTMENT
This course examines personal growth and adjustment throughout the life span, encompassing theory research and practical applications. Topics include: theories of adjustment, characteristics of the healthy personality, interpersonal relationships, adjustments to school, work, and retirement, understanding and managing stress, human sexuality, and strategies for coping and adjustment.
Prerequisite: PSYC 101 or equivalent or permission of instructor
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 284 - PSYCHOLOGY OF GENDER
This course examines factors that contribute to the development of gender, explores internal and external pressures that mold and modify male/female behavior and personality. Cultural and ethnic differences between men and women are also studied.
Prerequisite: PSYC 101 or equivalent or permission of instructor
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 304 - INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY
This course is designed to help students develop an understanding of human behavior in work settings, the variables which affect workers and their
productive efficiency and strategies to improve productive human relations in such settings.

Prerequisite: PSYC 101 or equivalent, junior-level status (or permission of instructor)
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 325 - MOTIVATION AND BEHAVIOR
This course examines the various theories that attempt to explain the complex reasons why humans pick one behavior or goal over another. It will cover many theories of motivation, including (but not limited to) physiological regulation, pleasure-seeking, external incentive, and such modern theories as competency and effectance motivation.

Prerequisite: Grade of “C” or better in Introduction to Psychology (PSYC 101), major in Applied Psychology or permission of instructor.
Credits (3 lecture hours), fall or spring semester

PSYC 361 - RESEARCH METHODS AND APPLICATION IN APPLIED PSYCH I
The purpose of this course is to provide students with an introduction to the research methods and statistical interpretation used in the scientific discipline of psychology. This course will introduce basic concepts in research methods and assumptions used to design studies and will also present basic concepts from statistical analysis on how to design studies. Basic concepts from statistical analysis on how to describe data, evaluation and presentation of research methods and findings will also be covered.

Prerequisite: Grade of “C” or better in Introduction to Psychology (PSYC 101), grade of “C” or better in Intermediate Algebra with Trigonometry (MATH 102), and grade of “C” or better in Principles of Computers and Applications (CITA 101) or the equivalents, or permission of instructor.
4 credits (3 hours + lab), fall semesters.

PSYC 362 - RESEARCH METHODS AND APPLICATION IN APPLIED PSYCH II
The purpose of this course is to provide a continuation of the material and topics from Research Methods and Statistical Application I. This course will provide instruction into specific types of studies commonly conducted in the psychological sciences and the statistical methods used to analyze and interpret the data gathered in those studies.

Prerequisite: Grade of “C” or better in Research Methods and Application I (PSYC36) or the equivalent
4 credits (3 hours + lab), spring semester

PSYC 381 - PERSONALITY
This course will introduce students to various theories used to study stable traits and dispositions and how they are related to human behavior. This course will also explore many theories of personality including (but not limited to) Psychoanalysis, Neo-Freudian, Humanistic, Biological, and Evolutionary.
3 credits
Offered fall or spring semester
Prerequisite: Grade of “C” or better in Introduction to Psychology (PSYC 101), major in Applied Psychology or permission of instructor
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 384 - GROUP BEHAVIOR
This course examines human behavior in small groups. The emphasis will be on participation in face-to-face small groups focusing on the group's behavior and each individual's behavior, including interaction style and skills.

Prerequisite: PSYC 101 or equivalent, and junior-level status (or permission of instructor)
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 386 - SOCIAL PSYCHOLOGY
This course examines the relationship between the individual and the group, the influence of culture and of institutions on humans, factors in the development of social attitudes, and the psychology of mass movements and of social decisions.

Prerequisite: PSYC 101 or equivalent, or permission of instructor
3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

PSYC 405 - APPLIED PSYCHOLOGY INTERNSHIP ORIENTATION
Prepares students in the B.S. in Applied Psychology degree program for the 120-credit internship in the following semester. This course will introduce students to workplace expectations and norms and provide assistance in students' applications to internship.

Prerequisite: Major in Applied Psychology, successful completion of at least 90 credits or permission of instructor
1 credit (1 lecture hour), fall semester

PSYC 406 - APPLIED PSYCHOLOGY INTERNSHIP
This course involves supervised fieldwork in a selected business or human service organization.

Students carry out a planned program of educational experiences under direct supervision of a senior staff member on site. Each intern will be advised and monitored by a member of the faculty on a regular basis. Requirements include a journal, interim reports, supervisor evaluations, a summary report, and an oral presentation.

Prerequisite: Grade of “C” or better in PSYC 405, (Applied Psychology Internship Orientation), major in Applied Psychology, all other degree course work successfully completed.
12 credits, spring or summer semester

PSYC 410 - SENIOR SEMINAR IN APPLIED PSYCHOLOGY
This course provides a framework for students to connect the theoretical concepts they mastered in their previous coursework to the practical concerns found outside of the laboratory, in business and in human services. As a topical course, exact content will vary from year to year.

Prerequisite: Completion of at least 12 credits in PSYC courses at the 300-level or above or the equivalent or permission of instructor.
3 Credits (3 lecture hours), fall semester

PSYC 461 - TESTS AND MEASURES
This course is a hands-on introduction to testing and psychological measurement, including, basic psychometrics such as IQ and personality, academic testing such as the SAT and achievement tests, and employment related testing such as aptitude testing. Students will learn the fundamentals of what makes a good test, and the strengths and weaknesses of many common commercial tests.
Prerequisite: Grade of “C” or better in Introduction to Psychology (PSYC 101), grade of “C” or better in Research Methods in Applied Psychology I (PSYC 361) and grade of “C” or better in Applied Psychology II (PSYC 362) or the equivalents), major in Applied Psychology or permission of instructor

3 credits (3 lecture hours), fall or spring semester

RENEWABLE ENERGY

RENG 102 – RENEWABLE ENERGY RESOURCES
A scientific examination of the energy field with emphasis on alternate energy sources; their technology and application will be covered in this course, in addition to present needs and future demands; conventional sources, biomass conversions; wind power; geothermal; solar and nuclear energy. Conservation methods are stressed. Knowledge of intermediate algebra is highly recommended for this course.

3 credits (3 lecture hours), fall semester, (spring semester online only)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

RENG 103 – RENEWABLE ENERGY SEMINAR
The course provides the student with an introduction to renewable energy resources and systems, recent socioeconomic renewable energy issues, and career opportunities in the field of renewable energy.

1 credit (1 lecture hour per week), fall or spring semester.

RENG 150 – ANALYSIS TECHNIQUES FOR RENEWABLE ENERGY
This course provides students with fundamental analysis skills pertinent to the field of renewable energy systems. Course focus is on energy and power conversions, algebraic fractions, logarithmic and exponential power functions, Euclidean graph interpretation, and fundamental statistics, with a strong emphasis on renewable energy system examples.

Prerequisite: MATH 102, RENG 102
1 credit (1 lecture and 1 hr. recitation weekly), spring semester

RENG 210 – BIOMASS ENERGY RESOURCES
This course provides the student with a technical understanding of biomass energy resources, materials, and production systems. Two broad categories of biomass energy resources are considered: dedicated energy crops and waste streams or coproducts. The primary focus of the course is on the production of dedicated bioenergy sources, including agriculture, forestry and aquaculture feedstocks, and recovery of biomass from waste streams, including agriculture, forestry, municipal and industrial systems. The course also provides an introduction to chemical, biological, and thermal conversion pathways of biomass into useful energy sources and materials.

Prerequisites: BIOL 120 and MATH 102 or permission of instructor.
3 credits (2 lecture hours, 3 lab hours), fall semester

RENG 220 – WIND AND HYDRO ENERGY SYSTEMS
This course provides the student with a fundamental understanding of wind and hydroelectric energy systems and the potential to generate electricity in both grid-tied and off-grid integrated applications. An introduction to fluid dynamics, measuring and mapping wind and water resources, and on-site assessments will also be given. The course focuses on small- and medium-sized wind machines, generators, alternators, and electricity, including technical aspects of microhydroelectric power generation for hybrid wind and hydro energy systems.

Prerequisite: MATH 102, PHYS 107
3 credits (2 lecture hours, 3 laboratory hours), spring semester

RENG 221 – INTRODUCTION TO SMALL WIND SYSTEMS
This course provides students with an introduction to wind energy and the impacts of turbulence, frequency distributions, and tower height on the wind resource. Students are engaged with installation, maintenance, and troubleshooting small wind system (those <100 kW in size). This course covers the Job Task Analysis for the North American Board of Certified Energy Practitioners (NABCEP) Small Wind Installer examination.

Prerequisites: ELEC 190 or DTEC 125 or AGEN 125, and PHYS 107 minimum grade of C.
3 Credits (2 hours lecture, 2 hours laboratory).

RENG 225 – TOWER CLIMBING AND RESCUE
This course is designed to give hands-on experience for those entering the residential wind turbine industry. Initial focus is on tower climbing standards, terminology of the tower climbing industry, and competent climber expectations and duties. Emphasis will be placed on working safely at heights, teamwork in stressful conditions, and fall protection equipment inspection. Students will be held to the National Association of Tower Erectors Authorized Climber and Competent Climber standards. Prospective students should be aware that this course is physically demanding and requires the willingness to be at heights. Must be able to lift 50 pounds and climb a ladder.

Prerequisite: Renewable Energy major(s), or permission of instructor
2 credits (1 hour of lecture and 2 hours of laboratory), spring semester

RENG 230 – SOLAR AND GEOTHERMAL ENERGY SYSTEMS
This course provides the student with a technical overview of the components of solar thermal and geothermal heating systems as well as solar photovoltaic electrical systems. Students will learn fundamentals of solar insulation and the impacts of seasonality, aspect, and latitude on solar resources. The course focuses on components and design of solar photovoltaic electricity generation and storage in both grid-tied and off-grid systems. Students will also learn the fundamentals of hot water systems, including solar thermal space heating and geothermal systems, including heat pumps. Combining solar thermal and geothermal energy systems will provide students with experience in hybrid renewable energy systems.

Prerequisites: MATH 102, PHYS 107
3 credits (2 lecture hours, 3 laboratory hours), fall semester

RENG 231 – INTRODUCTION TO SOLAR PHOTOVOLTAICS
This course provides students with an introduction to solar energy and the impacts of seasonality, aspect, and latitude on solar resources. Students are engaged with system components and design of solar photovoltaic electricity generation in both grid-tied and off-grid systems. This course covers the Job Task Analysis for the North American Board of Certified Energy Practitioners (NABCEP) Solar PV Entry Level examination.

Prerequisites: ELEC 190 or DTEC 125 or AGEN 125, and MATH 102 minimum grade of C.
3 Credits (2 hours lecture, 2 hours laboratory).

RENG 305 - RENEWABLE ENERGY SYSTEMS
This course provides students with the basic understanding of renewable energy systems and their potential use for power generation, including electricity. Focus is on providing the student with an introduction to typical energy consumption patterns along with key concepts, terminology, and nomenclature common to all energy systems. The focus will then shift to utilizing solar, wind, hydro, biomass, geothermal, and hydrogen fuel cells as renewable energy systems for a sustainable future.

Prerequisites: minimum of MATH 102 or equivalent: (junior standing or permission of the instructor)
3 credits (2 lecture hours, 2 laboratory hours), fall semester
RENG 306 – ALTERNATIVE FUEL VEHICLES
This course explores current and future technology in the automotive industry in the areas of alternative power sources. Alternative vehicles such as hybrid electric, fuel cell technology will be studied. Students will learn automotive technology necessary to understand the hurdles required to achieve a fully sustainable vehicle. Prior knowledge of automotive technology and internal combustion theory is helpful but not necessary.

2 credits (1 lecture hour and 3 laboratory hours), spring semester

RENG 310 – BIOMASS ENERGY RESOURCES
This course provides students with a technical understanding of biomass energy resources, materials, and production systems. Two broad categories of biomass energy resources are considered: dedicated energy crops and waste streams or coproducts. The primary focus of the course is on the production of dedicated bioenergy sources, including agriculture, forestry and aquaculture feedstocks, and recovery of biomass from waste streams, including agriculture, forestry, municipal and industrial systems. The course also provides an introduction to chemical, biological, and thermal conversion pathways of biomass into useful energy sources and materials.

Prerequisites: BIOL 120 or (RENG 302 or RREN 332) and MATH 102, or permission by the instructor.
3 credits (2 lecture hours, 3 lab hours), fall semester

RENG 315 – BIOMASS ENERGY RESOURCES II
This course builds on RENG 210/310 Biomass Energy Resources, with more emphasis on dedicated energy crops and woody biomass production systems. This course provides the student with a scientific and technical understanding of biomass energy crops and production systems with a focus on: dedicated energy crops establishment, site preparation, and planting methods; and harvesting, pre-processing and handling of agricultural and woody biomass crops as feedstocks for biomass-to-energy conversion systems.

Prerequisite: RENG 210 or RENG 310
3 credits (2 hours of lecture and 3 hours of laboratory), spring semester

RENG 320 – WIND AND HYDRO ENERGY SYSTEMS
This course provides the student with a fundamental understanding of residential wind and hydroelectric energy systems and the potential to generate electricity in both grid-tied and off-grid integrated applications. Initial focus is on providing the student with a review of fluid dynamics, measuring and mapping wind and water resources, and on-site assessments. The focus will then shift to residential and farm-scale wind machines, generators, alternators and electricity. Students will then begin with technical and sociopolitical aspects of micro hydroelectric power generation as renewable energy systems.

Prerequisite: PHYS 107, MATH 102, or permission by instructor.
3 credits (2 lecture hours and 3 lab hours), spring semester

RENG 321 – INTRODUCTION TO MICRO HYDROELECTRICITY SYSTEMS
This course provides students with an introduction to hydroelectricity and the impacts of head, flow, and fluid dynamics on the useable water resource. Students are engaged with installation, maintenance, and troubleshooting micro hydroelectricity systems (those <10 kW in size). Course focus will be on sizing penstock, mapping the hydro resource, and identifying environmental considerations with small hydro systems.

Prerequisites: ELEC 291, AGEN 151 and PHYS 127 minimum grade of C.
3 Credits (2 hours lecture, 2 hours laboratory).

RENG 330 – SOLAR AND GEOThERMAL ENERGY SYSTEMS
This course provides the student with a technical overview of the components of solar thermal and geothermal heating systems as well as solar photovoltaic electrical systems. Students will learn fundamentals of solar irradiance, insolation and the impacts of seasonality, aspect, and latitude on solar resources. Students will begin with components and design of solar photovoltaic electricity generation and storage in both grid-tied and off-grid systems. The course then focuses on the fundamentals of solar thermal systems, including solar thermal domestic hot water, solar space heating and geothermal heat pumps. Pairing solar thermal and geothermal energy systems will provide the students with experience in hybrid renewable energy systems.

Prerequisites: MATH 102, PHYS 107, or permission by the instructor.
3 credits (2 lecture hours and 3 lab hours), spring semester

RENG 410 – BIOMASS ENERGY CONVERSIONS I. BIO-CHEMICAL
This course provides the student with a scientific and technical understanding of biomass energy conversions with a focus on biological-chemical conversions (e.g., fermentation, distillation, anaerobic digestion, etc.) of plant and waste compounds into useful energy sources such as biodiesel, ethanol, and methane. The focus of the course includes both small-scale and production-level energy systems designed to convert energy crops and waste streams into useable energy sources and products for chemicals, liquid and gaseous fuels, heat and electricity.

Prerequisite: RENG 210 or RENG 310, and BIOL 120 or BIOL 285
3 credits (2 hours of lecture and 3 hours of laboratory), fall semester

RENG 415 – BIOMASS ENERGY CONVERSIONS II. THERMO-CHEMICAL
This course provides the student with a technical understanding of biomass energy conversions with a focus on thermal-chemical conversions (e.g., liquefaction, pyrolysis, gasification, combustion) of plant and waste compounds into useful energy sources such as torrefied wood, char, bio-oils, synthesis gas. The focus of the course includes both small-scale and production-level energy systems designed to convert energy crops and waste streams into useable energy sources and products for chemicals, liquid and gaseous fuels, heat and electricity.

Prerequisite: RENG 210 or RENG 310, and CHEM 101 or CHEM 121
3 credits (2 lecture hours and 3 hours of laboratory), spring semester

RENG 420 – SMALL WIND SYSTEMS
The focus of RENG 420 is on siting small wind systems, plotting and analyzing Weibull and Rayleigh wind distribution functions, analyzing wind shear and turbulence data, tip-speed ratios, optimizing turbine-inverter interactions for maximum energy production, rotor design, electrical system design and system troubleshooting. This course provides the student with experience in hybrid renewable energy systems.

Prerequisite: MATH 103, and RENG 220 or RENG 320
3 credits (2 lecture hours and 3 laboratory hours), spring semester

RENG 430 – SOLAR PHOTOVOLTAIC SYSTEMS
The focus of RENG 430 is on siting solar PV systems, National Electrical Code Article 690, roof analysis, wind loading, weight loading, array withdrawal forces, sliding forces, line electrical diagrams, system grounding, off-grid systems, optimizing system efficiency, and troubleshooting. This course provides the student with experience in hybrid renewable energy systems.

Prerequisite: MATH 103, and RENG 230 or RENG 330
3 credits (2 hours of lecture and 3 hours of laboratory), fall semester
RENG 460 – SYSTEMS INTEGRATION
This is a capstone class for the Renewable Energy degree program. Quantitative, technical writing, and presentation skills (oral and written) will be applied to design and propose a renewable energy system for a landowner. Students are expected to perform an energy audit, recommend energy efficiency and conservation measures, assess renewable energy resources available, design a full system consistent with landowner objectives, check for town ordinance regulations, prepare applicable paperwork for incentives and utility interconnection agreement, and conduct a financial analysis for the system. A final written and oral presentation will be graded.
Prerequisite: Bachelor of Technology status or permission of instructor
3 credits (2 lecture hours, 4 laboratory hours), spring semester

RENG 490 – RENEWABLE ENERGY INTERNSHIP
This course is intended to provide the student with a professional work experience in renewable energy or energy efficiency. This work experience should range from 120 to 600 hours (40 hours per credit) and apply theoretical and technical knowledge in a professional setting. Prior to taking this course, students are required to develop a resume, create goals and objectives of the internship, and seek internship organizations in conjunction with their internship advisor while in RREN 450. To qualify for the internship, the internship sponsor, student, and academic advisor must sign a written contract. Students will be required to prepare and submit interim progress reports, develop and submit a comprehensive written report, and deliver a professional presentation of their internship experience.
Prerequisite: RREN 450, enrollment in the Renewable Energy B. Tech. program, and permission from the instructor.
3-15 credits, spring or fall semester

RENEWABLE RESOURCES

RENG 302 – RIPARIAN ECOLOGY AND WETLAND MANAGEMENT
The focus of this course is on processing functions and structure of riparian and wetland areas and the multiple human influences on these areas. The options for management of these areas will be stressed. Lectures are used to introduce students to the principles and concepts; and lab exercises are used to visit and evaluate field sites for future management consideration.
Prerequisites: college-level course in ecology or permission of instructor
3 credits (2 lecture hours, 3 laboratory hours) fall semester

RENG 303 – FUNDAMENTALS OF GEOSPATIAL SYSTEMS
This course is intended to cover the fundamentals of geospatial information systems. These include the geographic information system (GIS) which represents a computerized data management system designed to input, store, analyze and output geographically-referenced spatial data; the global navigation satellite system (GNSS) which combines globally-functional satellite constellations (including the U.S. Global Positioning System or GPS) with global and regional ground-based reference stations (at accurately surveyed locations) to enhance and broaden positioning; and remote sensing which is widely used to gather information about features on the earth’s surface without being in physical contact with these features. The course is designed to provide students who possess limited geospatial technology and analysis background with the ability to gather spatially-distributed and geographically-references data, query data, analyze spatial relationships, and produce professional outputs. The specific topics covered include geospatial data models, geodesy, datums, map projections, and coordinate systems; mapping and cartographic output; data collection and entry; GNSS and coordinate surveying; aerial and satellite imagery; geospatial and tabular data analyses; basic geospatial analysis; advanced geospatial (including terrain) analyses; geospatial estimation; geospatial modeling; and data standards and quality. The laboratory work will focus on the practical application of geospatial information systems following the hands-on approach where the student is expected to gain practical knowledge on using QGIS, ArcGIS for Desktop, aerial and satellite imagery, and a number of positioning and navigation systems.
Prerequisite: NATR 213 and upper division standing permission of instructor
4 credits (2 lecture hours, 4 laboratory hours), spring semester

RENG 305 – RENEWABLE RESOURCES LAWS AND REGULATIONS
The focus of this course is on the major federal environmental and related health and safety statutes currently in force. This course will also make general suggestions and give ideas on how one can identify potential environmental law problems and how to resolve them as effectively and efficiently as possible.
Prerequisite: Bachelor of Technology status or permission of instructor
3 credits (3 lecture hours) spring semester

RENG 312 – AQUATIC FIELD TECHNIQUES
A comprehensive study of sampling theory, design and methodologies currently used in the aquatic sciences. Course specifically addresses research sampling considerations and strategy design; sampling statistics and analysis; sampling and characterization of lake, river and wetland ecosystems; watershed and catchments delineation; and stream channel morphology and characterization. Course includes field dress and safety, field data management, watercraft operation, biometry, and data analysis.
Prerequisites: NATR 250 or permission of instructor
3 credits (2 lecture hour, 3 laboratory hours), fall semester

RENG 332 – ENVIRONMENTAL PLANNING AND NATURAL RESOURCES MANAGEMENT
Current issues, theories, practices and trends associated with multiple-use environmental planning and natural resource management. Emphasis is on critical thinking processes for the identification, definition, and resolution of environmental problems; planning and the implementation of plans; and management strategies for specific management goals.
Prerequisite: Bachelor degree standing or permission of instructor
3 credits (3 lecture hours), fall semester

RENG 412 - ECOSYSTEM IMPACT MANAGEMENT
This is the capstone course of the Renewable Resources curriculum, building upon theory and analytical skills gained in prerequisite courses and closely integrated with RREN 332 - Environmental Planning and Natural Resources Management. This course will integrate theory and technical management concepts with policy considerations so that terrestrial, aquatic and human system management issues may be approached at a systems-level rather than as individual mitigation or mediation efforts.
Prerequisite: RREN 332
3 credits (2 lecture hours, 3 laboratory hours), fall semester

RENG 420 - GEOSPATIAL TECHNOLOGY APPLICATIONS I
This course involves the presentation of two integrated teaching modules that focus on the application of geospatial technology to forest and wildlife management. The first module includes the application of geospatial technologies to the integrated management and monitoring of forest and wildlife management. The second module utilizes the application of geospatial technology to assess habitat resources for wildlife management. The two modules incorporate the global positioning system (GPS), geographic information system (GIS), and remote sensing technologies combined with field-tested, scientifically-based principles providing an integrated approach to natural resources management. The two modules are vertically integrated where
field measurements are combined based on common sampling points.

Pre- or Co-requisite: RREN 303; (junior standing or permission of the instructor)
1 credit (1 lecture hour, 2 laboratory hours), 10-week course, spring semester

RREN 421 - GEOSPATIAL TECHNOLOGY APPLICATIONS II
This is an elective course in the Renewable Resources Technology BT program where students are expected to master the application of geospatial technology to natural resources management through independent and group projects where many of the college properties will be inventoried using the methodology covered in RREN 420. The course follows integrated approaches to the management and monitoring of forest land as well as the assessment of habitat resources for wildlife management by focusing on a new college property each year. Geospatial technologies including the global positioning system (GPS), geographic information system (GIS), and remote sensing are combined with field-tested, scientifically-based principles providing an integrated approach to natural resources management of the forest.

Prerequisites: RREN 420 with a B or better and approval of instructor
2 credits (1 hour of lecture and 4 hours of laboratory), 10-week course, fall semester

RREN 450 – RENEWABLE RESOURCES INTERNSHIP ORIENTATION
This course is designed to prepare students for an internship and to assist them with the process of employment and career development. It prepares students for internship requirements such as goal definition, placement site identification, job application, performance evaluation and report writing. RREN 450 formalizes internship planning and preparation to insure that internships are procured, conducted in a professional manner, follow course guidelines, and satisfy the goals and objectives of students, faculty advisors and cooperating placement sites.
1 credit (2 lecture hours), 8-week course, spring semester

RREN 470 - INTERNSHIP IN RENEWABLE RESOURCES
This course involves supervised fieldwork at an approved placement site. Students carry out a planned program of educational work experiences under direct supervision of an owner, manager, or supervisor. Each intern is advised and monitored by a member of the faculty on a regular basis. Requirements include a journal, interim reports, supervisor evaluations, a summary report and an oral presentation.

Prerequisite: RREN 450 and permission of the instructor
15 credits

RESIDENTIAL CONSTRUCTION

RESC 106 - GRAPHIC COMMUNICATIONS
An introduction to the graphic standards of construction working drawings wherein students learn to interpret and interpolate construction drawings, using judgment based on accepted building techniques and material usage. Functional design concepts for residential floor plans are introduced and incorporated into various residential design situations. “Chief Architect” design software is introduced in laboratory sessions giving students the ability to design homes and create complete working drawings using the latest technology.
3 credits (2 lecture hours, 3 laboratory hours), fall semester

RESC 130 - LIGHT FRAMING
Light framing and layout work encountered in residential construction are introduced in lecture sessions and practiced in laboratory settings, dealing with the construction and modification of light home and agricultural structures.
3 credits (2 lecture hours, 3 laboratory hours), fall semester

RESC 160 - INTRODUCTION TO BUILDING MATERIALS AND ESTIMATING
A thorough introduction to the basics of platform framing and the major concepts of balloon construction, post and beam construction, and manufactured housing. Emphasis directed to understanding the advantages and limitations of contemporary building materials and methods and their impact on the construction industry. Laboratory experiences culminate with a take-off list of materials required for the proper construction of a residential structure.
Prerequisite: RESC 106 or permission of instructor
3 credits (2 lecture hours, 3 laboratory hours), spring semester

RESC 190 - CONSTRUCTION INTERNSHIP
Work experience in the residential construction industry is detailed in a written report documenting and stratifying the various occupational tasks encountered. The candidate must receive prior approval from the department staff after submitting a detailed proposal in writing.
Prerequisite: Approval of department staff
1-6 credits

RESC 201 - ESTIMATING AND PLANNING
The estimating consideration involved with the cost of doing business, the control of those costs, and the professional presentation of the final estimate to the prospective customer. Workbook Instruction in the use of construction calculators included in course work. The assessment portion of the class directs the student’s attention toward a rational evaluation of the overall quality of a product of building material and it’s propriety of use in a given circumstance. Guest lecturers from the industry and field trips to places of business enhance the student’s understanding as to the variety of opportunities within the home-building industry.
Prerequisite: RESC 160
3 credits (2 lecture hours, 2 laboratory hours), fall semester

RESC 211 - MASONRY AND FOUNDATIONS
An overview of the functional requirements of residential foundations, available systems to affect those requirements, and of the properties and uses of concrete and masonry products in residential construction. Laboratory sessions introduce the student to skills required to plan, place, and finish concrete, plus design, layout, and erect structures using masonry products.
3 credits (2 lecture hours, 4 laboratory hours), fall semester

RESC 221 - PLUMBING
An overview of the plumbing trade including tools, skills, mathematics, nomenclature, science of fluids, cold and hot water distribution systems, and the drain-waste-vent system. The student will participate in the installation and testing of a residential plumbing system with special emphasis on setting of fixtures and trim work.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

RESC 260 - HEATING AND ENERGY SYSTEMS
The study of heat transfer in conventional building materials and construction techniques for reducing energy consumption. Subjects covered will also include residential hot water, hot air, and steam heating systems. Sizing of heating/cooling systems and selecting of peripheral components will be covered.
3 credits (2 lecture hours, 2 laboratory hours), spring semester

RESC 270 - CONSTRUCTION PLANNING AND MANAGEMENT
A class for graduating Residential Construction majors that draws together features of all previous classes and introduces points directed toward effective planning and management of a construction project. The Senior Construction Project(s), a building activity completely organized, directed,
and executed by the students, is the major concentration helping to prepare them for a management position in the home-building industry.

Prerequisite: Senior Residential Construction majors only
4 credits (1 lecture hour, 6 laboratory hours), spring semester

RESORT AND RECREATION
SERVICE MANAGEMENT

RRMT 320 - LEGAL IMPLICATIONS IN THE RESORT AND RECREATION INDUSTRY
This course will cover legal principles governing hospitality operations. Case studies involving the resort and recreation industry will be emphasized. Topics include responsibilities for loss or injury to guests and guest property, inn maker relationships tax laws, labor laws, building codes and public health regulations.

Prerequisites: BSAD 107 or BSAD 108
3 credits (3 lecture hours), spring semester

RRMT 425 - TRAINING DESIGN AND IMPLEMENTATION FOR THE HOSPITALITY INDUSTRY
This course is an applications-based course that will provide students with a solid foundation in the principles and procedures for selecting, designing, implementing and evaluating training programs. Conducting a needs assessment, utilization of instructional design models, applying appropriate technology, and evaluating outcomes will be studied. Students will be able to link results of the training programs studied to the mission of the corporation.

Prerequisite: RRMT or permission of instructor
3 credits (3 lecture hours), spring semester

RRMT 430 - THE ASSESSMENT OF CUSTOMER SATISFACTION IN SERVICE MANAGEMENT
This course will identify and utilize the various assessment issues related to evaluation and the development of instruments and methodologies. The focus will be placed on how these assessment methods can be implemented to measure customer satisfaction. Guidelines for the development of instruments and processes will be discussed with an emphasis on reliability and validity issues. Focus groups, their uses, makeup and procedures for effective use will be discussed. Company models will be used to implement and demonstrate the student’s understanding of the subject material. The relationship between assessment and continuous quality improvement will be emphasized.

Prerequisite: BSAD 221 or permission of instructor
3 credits (3 lecture hours), spring semester

RRMT 440 - TECHNOLOGY APPLICATIONS FOR RESORT AND RECREATION MANAGEMENT
This course covers the applications of various software programs that enhance efficiency in resorts and recreational facilities. Identification of information management systems and function in various departments as well as necessary interfaces to enhance service recovery and quality will be covered.

Prerequisites: TOUR 106, TOUR 153, RRMT 320
4 credits, (2 lecture hours, 2 hours of recitation), fall semester

RRMT 450 - SECURITY AND SAFETY CHALLENGES AND INTERVENTION STRATEGIES FOR RESORT ENTERPRISES
This course identifies issues of security, surveillance and safety which must be addressed by resort enterprises for loss prevention. Major concepts include operational intervention and strategies for an effective security and safety program. Legal, prevention and compliance requirements will be reviewed.

Prerequisite: BSAD 310 or permission of instructor
3 credits (3 lecture hours), fall semester

RRMT 460 - INTERNATIONAL HOTEL AND RESORT MANAGEMENT
The goal of this course is to provide students with a basic understanding of the international hotel and resort industry by examining various aspects of hotel development and management in global terms.

Prerequisites: TOUR 153
3 credits (3 lecture hours), spring semester

RRMT 465 - MANAGING ENTERTAINMENT VENUES
This course is designed to identify the components of successful entertainment venues. Special focus on strategic planning, budgeting, special considerations/requirements, legal issues, contracts, and public relations as they relate to leveraging the department. Students will integrate hospitality skills and knowledge to formulate an executive philosophy applicable to entertainment management. The class will implement a case study approach to enhance critical thinking and presentation skills.

Prerequisite: RRMT 320 or permission of instructor
3 credits (3 hours per week, lecture), fall semester

RRMT 470 - RESORT AND RECREATION INTERNSHIP ORIENTATION
The focus of this course will be on preparation for the internship including identification of preferred work sites, the application process, facility orientation, work place competencies and objectives of the internship.

Prerequisites: FSAD 257, B.B.A. Resort and Recreation Service major, senior status
1 credit, (1 lecture hour), fall semester/spring semester

RRMT 475 - MEETINGS, EXPOSITIONS, EVENTS AND CONVENTION MANAGEMENT
The goal of this class is to provide students with a comprehensive understanding of the meetings, expositions, events and conventions industry (MEEC). The class offers students an in-depth view of planning and management in MEEC. The course supports students with hands-on, step-by-step methods for planning and managing gatherings in MEEC.

Prerequisite: TOUR 252 and RRMT 462 or permission of instructor
3 credits (3 lecture hours), spring semester

RRMT 480 - RESORT AND RECREATION SERVICE MANAGEMENT INTERNSHIP
This course is supervised field work in a selected resort and recreation business or service organization. Students carry out a planned program of educational experiences under direct supervision of an owner, manager, or supervisor of the Resort or Recreation Department head in an organization. Each intern will be supervised by a member of the faculty on a regular basis. Written and oral reports of work experience activities will be required. An evaluation will be based on the quality of experiences gained from the internship.

Prerequisites: RRMT 320, 430, 440, 470 or permission of instructor
12 credits, spring semester/fall semester/summer semester
SCIENCE, TECHNOLOGY, AND SOCIETY

STS 101 – THE VALUES OF SCIENCE AND TECHNOLOGY
This course explores ethical, social, political, and religious issues associated with science and technology. For many people, the practice of science is the pursuit of knowledge, while the application of technology involves tools that may have a positive impact on society, depending upon the actions of those using them. Students in this course will analyze contemporary challenges to those views, through the use of case studies and theoretical investigations (including fiction and film). The course will confront both science and technology with questions about knowledge, expertise, progress, and neutrality. By the end of the class, students should have a richer perspective on the values and challenges of science and technology within society.

Prerequisite: “C” or better in COMP 101
Pre- or Co-requisite: Lab science
3 credits (3 lecture hours) spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

STS 301 – HUMANS VS. NATURE
An exploration of the relationship between the natural world and human attempts to understand it (science) and control it (technology). The distinction between what is natural and what is technological often informs human discourse in terms of what is permissible and what is possible. Students will survey and critique the ethical, social, and scientific distinctions between the natural world and the human world. To this end, the course will take a broad view of technology to include human artifacts and technological systems, but will also grapple with objects at the boundaries of technology and nature – domesticated animals, designed babies, and other genetic and biological "enhancements" and "reassignments."

Prerequisites: STS 101, or PHIL 201 or permission of instructor.
3 credits (3 lecture hours) full semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

STS 302 – HISTORY OF SCIENCE
This is an advanced topics course focusing on the history of science. The course surveys human understanding of the nature of the universe, beginning with the Neolithic peoples and continuing through ancient cultures such as the Chinese and Greeks and on into the early development of modern science in Europe. It ends with a discussion of the broad developments in science occurring in the past 200 years of world history. The role of ideology and technology in shaping our understanding of the world is also addressed. While covering the general shifts in world view from supernatural to natural, from philosophy to science, the course also will address the Kuhnian analysis of the paradigm as a key to understanding the nature of scientific knowledge and how communities accept new conceptions of the nature of the universe.

Prerequisites: STS 101 or any 100-level HIST course
3 credits (3 lecture hours) fall or spring semester.
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

STS 316 – INVESTIGATING CYBERCULTURE
This course will examine the contemporary transformation in human interaction via computer technologies. Topics investigated through reading and research include: new concepts of space and time; electronic subjectivity and anonymity; new representations of gender, race and class; emergence of new forms of expression; glocalization and the trend in networked individualism and the impact of hypertext and multimedia technologies on human thinking and learning.

Prerequisite: SOCI 101 or permission from the instructor.
3 credits (3 lecture hours), fall semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

STS 401 – ADVANCED TOPICS IN SCIENCE, TECHNOLOGY, AND SOCIETY
This course focuses on a specific set of issues relating to how science and/or technology engage the larger social world. The issue set is examined in detail from a variety of perspectives (historical, philosophical, sociological, etc.). This course is designed to give upper-division students in the major an opportunity to explore a rapidly changing world in-depth. Topics vary from semester to semester. Topics selected will center around the social dimensions of recent or highly influential developments in science and technology, and might include subjects like gender and technology, modernism and science, or non-western scientific traditions.

Prerequisites: junior or senior standing and permission of instructor
3 credits (3 lecture hours) fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Humanities.

SKILLS COURSES

SKLS 087 – READING ESSENTIALS
This course addresses the basic skills necessary for efficient college reading. The course concentrates on effective study reading and provides instruction and practice in vocabulary development, reading comprehension and reading rate.
3 credits (not to count toward graduation credit), 3 lecture hours, fall or spring semester

SKLS 088 – WRITING ESSENTIALS
This course is designed to develop the basic language skills. It is a developmental skills course, grounding students in the mechanics of Standard English through sentence construction and paragraph organization and development.
Prerequisite: D or better in high school English
3 credits (3 lecture hours), fall or spring semester
These credits do NOT count toward graduation credit.

SKLS 089 – ENGLISH AS A SECOND LANGUAGE
This is a course for students with limited experience with written and spoken English. Concentration on pronunciation, vocabulary development, written and spoken grammar and sentence construction, and basic reading and writing skills. The emphasis will be on everyday conversational English.
3 credits (not to count toward graduation credit), 3 lecture hours, fall or spring semester

SKLS 091 – PRE-ALGEBRA
This course consists of basic mathematics with the ground work for introductory algebra. Topics include covers operations with whole numbers, integers, fractions, decimals, percents and application problems for each
area. Students will learn strategies for solving problems without the use of a calculator. The goal of Pre-algebra is to prepare the student to deal with math as it occurs in everyday life and to prepare the student for introductory algebra.

3 credits (not to count toward graduation credit), 3 lecture hours, fall or spring semester

**SOCIOLOGY**

**SOCI 101 – INTRODUCTION TO SOCIOLOGY**
Introduction to sociological concepts, with description and analysis of the structure and dynamics of human society. Consideration of contemporary social institutional trends and of the reciprocal relationship among individuals and institutions.

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**SOCI 201 – SOCIAL PROBLEMS**
A consideration of problems confronting contemporary civilization. Topics include institutional problems within family, economic, political, religious and educational systems, as well as the effect of these problems on individuals. Potential solutions to social problems will be addressed.

Prerequisite: SOCI 101 or HIST 103, or permission of instructor

3 credits (3 lecture hours), spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**SOCI 220 – MARRIAGE AND THE FAMILY**
Designed for students who want to gain perspectives on the evolution and current state of marriage and family relations in the United States. There will also be a focus on alternatives to the traditional notion of marriage and family. Discussion of issues such as nontraditional relationships, mate selection and dating, gender roles, love and sexuality, family planning, separation and divorce, families in crisis, etc.

Prerequisite: SOCI 101

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**SOCI 221 – DEATH AND DYING**
This course examines the impact of dying and bereavement on individuals, families, groups, social institutions and cultures.

Prerequisite: PSYC 101 or SOCI 101

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**SOCI 250 – SOCIAL GERONTOLOGY*  
Social, psychological, and physiological changes experienced in aging and the responses of our society to problems faced by older people. Role changes in work and family relationships, economic and health problems, planning adjustment to retirement and beyond, institutionalization. Training of those responsible for care and management of older people.**

Prerequisite: PSYC 101 or SOCI 101

3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**SOCI 270 - DRUGS, SOCIETY & BEHAVIOR  
Examination of the biological, psychological and sociological aspects of drug use and abuse in the United States.**

Prerequisite: PSYC 101 or SOCI 101

3 credits
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**SOCI 360 - SOCIAL MOVEMENTS AND COMMUNITY CHANGE**
This interdisciplinary course examines social change through political advocacy and/or use of community resources.

Prerequisite: Grade of “C” or better in Social Problems in the Twenty-First Century (SOCI 201) or permission of instructor

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**SOCI 390 - URBAN SOCIOLOGY**
Urban sociology analyzes both the historical roots of urban development as well as the contemporary urban area as a regional social system. Basic sociological research concepts are used to discover demographic and organizational patterns and relate those patterns to urban problems and planning techniques.

Prerequisite: SOCI 101

3 credits (3 lecture hours)
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Social Science.

**SPANISH**

**SPAN 101 - BEGINNING COLLEGE SPANISH I**  
This course is for students who have not previously studied Spanish and who are not familiar with the language. Using a communicative approach with a variety of listening, speaking, reading, and writing activities, students will become familiar with basic structure and vocabulary of the Spanish language. Elements of Hispanic culture, customs and geography will be introduced. Note: this course is not designed for students who have taken 3 or more years of Spanish in high school, or for anyone who has passed the high school Regents Spanish exam. This course is not designed to meet the needs of heritage or native speakers of Spanish.

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Foreign Language.

**SPAN 102 - BEGINNING COLLEGE SPANISH II**  
This course builds on SPAN 101 to further develop and strengthen listening, speaking, reading and writing skills. Emphasizes the ability to use and understand Spanish in context. Instruction occurs in Spanish with clarification in English. Students express themselves orally, read authentic materials, understand oral input, and write compositions at high novice level. Prerequisite: SPAN 101 at Morrisville with a C grade or better, or 2 to 3 years of high school Spanish – Passing Grade in Course I and II

3 credits (3 lecture hours), fall or spring semester
This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Foreign Language.

**SPAN 125 – SPANISH FOR HERITAGE SPEAKERS**  
This course addresses the needs of students who can communicate in Spanish but need to develop and/or improve their reading and writing skills. It will enable the student to capitalize upon his/her existing language skills,
expand his/her knowledge base and develop his/her ability to read, write, and communicate more effectively in the language. The student will recognize regional and dialectal differences, describing varieties of Spanish spoken in the U.S. and throughout the world. Special attention is given to specific linguistic issues such as diction, orthography and sentence structure. The course is conducted in Spanish and includes cultural discussions. Students cannot receive credit or both; SPAN 101 or 102 and SPAN 125.

Prerequisite: Placement Evaluation or by permission of instructor
3 credits (3 lecture hours) fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Foreign Language.

SPAN 201 - INTERMEDIATE COLLEGE SPANISH I
Enhances Spanish listening, speaking, reading and writing skills. Emphasizes increasing the accuracy and depth of communicative abilities and cultural understanding. Students express themselves orally and in writing, read authentic sources, and understand clear, native speech at the intermediate level. Instruction occurs in Spanish.

Prerequisite: passing Spanish 102 with a “C” or better, permission of instructor, or passing grade on Course 3 Regents Spanish
3 credits (3 lecture hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Foreign Language.

SPAN 202 - INTERMEDIATE COLLEGE SPANISH II
Strengthens Spanish listening, speaking, reading and writing skills acquired in intermediate Spanish I. Emphasizes increased accuracy and depth of the students’ abilities and knowledge of contemporary Hispanic culture through group and individual work. Students express themselves orally and in writing at the high-intermediate level and understand key concepts when spoken clearly at native speed. Instruction occurs in Spanish.

Prerequisite: Spanish 201 or passing grades on 3-4 years high school Spanish or permission of instructor
3 credits (3 lecture hours), fall or spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Foreign Language.

THEATER

THEA 124 - INTRODUCTION TO THEATRE
Critical, historical, aesthetic, and practical survey of dramatic forms and styles, the development of the theater, and contemporary theatrical practice. Analysis of plays of each type or period.
3 credits (3 lecture hours), fall semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.

THEA 125 - PLAY PRODUCTION
Introduction to the basic techniques of acting, directing, and dramatic production. Practical experience in the fundamentals of character development, stage movement and dramatic pantomime, the designing and construction of sets and planning of lighting. Students produce various scenes and participate in the college dramatic organization.
3 credits* (3 lecture hours), spring semester

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.

THEA 150 - THEATRE PRODUCTION LABORATORY
This course is an advanced hands-on course in theatre production. In this course the students will participate in the creation of a theatrical production from casting to performance in one of these four areas: acting, design, directing, or stage management. In acting the student will develop the ability to create a character through the rehearsal process while increasing confidence and poise. In the design areas the student will research past productions, develop a design concept for the production, and execute the final design. In directing the student will choose a production for performance, research said production, develop a production concept, hold auditions, and hold rehearsal for said production up to the last performance of said production. The Stage Manager will work with the director to coordinate all aspects of a given production and also be responsible for the back stage areas during performance. Students will also explore the significance of theatre in our society.

Prerequisite: Permission of Instructor
For 1 credit, 2 credits, or 3 laboratory credits offered both fall and spring.

This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for The Arts.

Student must accumulate three credits (in any combination) to meet SUNY General Education requirement in the Arts. Students may successfully complete a combination of four credits of THEA 150 or THEA 160 toward graduation.

THEA 160 – TECHNICAL THEATRE PRODUCTION LABORATORY
This course is for the student who wishes to work back stage or in the front of house for a chosen theatre production. The student will work with the stage manager and director to coordinate the front-of-house and backstage elements of a performance.

Prerequisite: Permission of Instructor
For 1 credit, 2 credits, or 3 laboratory credits offered both fall and spring.

Does not meet SUNY General Education requirement in the Arts.

Students may successfully complete a combination of four credits of THEA 150 or THEA 160 toward graduation.

TRAVEL AND TOURISM/ HOSPITALITY MANAGEMENT

TOUR 101 - TOURISM AND GEOGRAPHY
This course approaches geography from a travel industry perspective. Basic geographic regions, country locations, and landmarks of significance to the travel industry are presented.
3 credits (3 lecture hours), fall semester

TOUR 106 - INTRODUCTION TO THE TRAVEL- TOURISM/HOSPITALITY INDUSTRY
This course is a basic introduction to the travel and tourism industry. The course explores the roles played by the various components of the industry including air transportation, maritime transportation, surface transportation, the hotel industry, the tourism industry wholesale and distribution companies and the food service segment. The course also explores potential career options available in the industry. The course focuses on team building.
3 credits (3 lecture hours), fall semester

TOUR 151 - COMPUTERIZED RESERVATIONS SYSTEM
Presents the concepts, procedures and formulas necessary for a working understanding of American Airline’s SABRE Computer Reservation System. Students practice what they learn in a simulated SABRE environment with intensive hands-on computer exercises, case studies and role playing, travel reservations and bookings, travel agency and airline accounting, and legal issues affecting both.
3 credit hours
TOUR 152 - TRAVEL INDUSTRY OPERATIONS AND ADMINISTRATION

Provides students with a basic understanding of travel agency and airline operations and administration as well as the legal environment of the travel industry. Topics include the role of ARC and IATAN, travel agency location and staffing, travel sales techniques and customer service skills are emphasized.

3 credits (3 lecture hours), spring semester

TOUR 153 - HOTEL OPERATIONS

This course presents a systematic approach to front office procedures by detailing the flow of business through a hotel, from the reservations process to checkout and settlement. The course examines the various elements of effective front office management, paying particular attention to the planning and evaluation of operations and to human resource management. Front office procedures and management are placed within the context of the overall operation of a hotel. Certification by the American Hotel/Motel Association.

3 credits (3 lecture hours), spring semester

TOUR 200 - INTERNSHIP IN CUSTOMER SERVICE

Customer service laboratory experience in conjunction with an approved restaurant or hospitality operation. A field experience providing food service administration, restaurant management, and travel/tourism majors with an opportunity to apply their knowledge in a customer service setting.

3 credits, fall semester, spring semester

TOUR 250 - TOURISM PLANNING AND DEVELOPMENT

The goal of this course is to define the major concepts in tourism and to explore those factors influencing tourism. The course will also examine how the economic impact of tourism has become an important factor in the wealth of nations. Transportation Fee: $30

Prerequisites: TOUR 153 or permission of instructor

3 credits (3 lecture hours), fall semester

TOUR 251 - COOPERATIVE WORK EXPERIENCE

Cooperative work experience will be completed in an approved position in the Travel-Tourism/Hospitality industry (320 hours). Comprehensive written and oral reports are required at the end of the work experience during the fall semester.

2 credits (2 lecture hours), fall semester

TOUR 252 - MEETING AND CONVENTION SERVICES

Introduction to convention and group planning as it relates to the Hospitality Industry. This certificate course includes marketing the facility for various meetings and conventions, catered events, planning, cost controls, special services, technology implications, and sales. National Certification by the American Hotel and Lodging Association.

3 credits (3 lecture hours), spring semester

TOUR 253 - TRAVEL AGENCY OPERATIONS

This course will provide a hands-on experience focusing on customer service for the retail travel industry. The class will take place at the Morrisville State College Travel Center utilizing SABRE.

Prerequisites: TOUR 151 and TOUR 152

2 credits (4 hours recitation), spring semester/fall semester

TOUR 255 - TOURISM AGENCY OPERATIONS

This course will provide the student with an advanced practical experience in tourism promotion agencies. The course will be taught in conjunction with tourism-related business. Students will complete an externship.

Prerequisites: TOUR 151 and TOUR 152

2 credits (4 laboratory hours), fall and spring semester

WELLNESS

WELL 101 – STRESS AND WELLNESS

This course introduces the student to the concept of stress, the normalization of stress, nutritional and exercise practices as related to stress, personal health strategies and specific skills for stress management.

3 credits (3 lecture hours), fall or spring semester

WOOD PRODUCTS TECHNOLOGY

WOOD 101 - WOOD PRODUCTS AND PROCESSES

An introduction to the furniture/lumber industry and its products, including commercial woods, furniture and cabinets, layout, hardware and assembly, as well as safety and nomenclature of machines are topics in this course. Laboratory includes introduction to common woodworking equipment and construction of small furniture project. There is a laboratory fee.

3 credits (2 lecture hours, 2 laboratory hours), fall semester

WOOD 160 - WOOD TECHNOLOGY

Anatomical features and physical properties and uses of wood are covered in this course as well as macro identification of commercially important species.

3 credits (2 lecture hours, 3 laboratory hours), spring semester

WOOD 170 - LUMBER MANUFACTURE AND GRADING

This course covers basic sawmilling practices, the breakdown of logs into lumber, basic equipment and applications, air-drying of lumber and lumber grading rules.

Prerequisite: MAGN 101 or permission of instructor

3 credits (2 lecture hours, 3 laboratory hours), spring semester

WOOD 180 - FURNITURE DESIGN AND CONSTRUCTION

Survey of the various styles of furniture, their design and construction. Students will design and construct a piece of furniture.

Prerequisite: WOOD 101, DRFT 151, CAD 181 or permission of instructor

3 credits (2 lecture hours, 2 laboratory hours), spring semester

WOOD 190 - SUMMER WORK STUDY

This consists of work experience of at least 10 weeks in the wood industry between the first and second year A report is required. Prior instructor's approval and pre-registration is necessary.

3 credits, fall or spring semester

WOOD 201 - WOOD DESIGN PROBLEM

Special problem in wood design and fabrication as approved by instructor are among the topics covered in this course.

Prerequisite: WOOD 101

1 credit, spring semester
WOOD 211 - WOOD INDUSTRY FIELD TRIP
Supervised field trip for observation and study of organizations, facilities and processes in the various industries within the wood industry. A SWOT analysis report is required.

1 credit, spring semester, senior year

WOOD 221 - WOOD GLUES, LAMINATES AND FINISHES
Basic concepts of surface preparation and application techniques used in gluing and finishing wood are covered in this course. Wood-adhesive and woodcutting relationships to assist diagnosing problems are also covered.

Prerequisite: WOOD 160
3 credits (2 lecture hours, 3 laboratory hours), fall semester

WOOD 231 - SEASONING AND PRESERVATION
Students will learn principles of wood seasoning, dry kiln operation, wood-water relationship and species variation which affect the production of defect-free dried lumber and basic wood preservation practices.

Prerequisite: WOOD 160
3 credits (2 lecture hours, 2 laboratory hours), fall semester

WOOD 241 - SECONDARY WOOD PROCESSING
Students will explore the theory, principles and methods of machining wood, fastenings and assemblies. In a production environment. There is a laboratory fee.

Prerequisites: WOOD 160, WOOD 170, WOOD 180
4 credits (2 lecture hours, 6 laboratory hours), fall semester

WOOD 260 - PRODUCTION MAINTENANCE SUPERVISION
General background in OSHA regulations pertaining to the wood & construction industry for production, installation & maintenance personnel. Basic CNC programming and job setup using “G Code” & “Master Cam” software. Course includes molder setup and operations including knife design & grinding and machine alignment.

2 credits (2 lecture hours, 2 laboratory hours), spring semester

WOOD 270 - WOOD PRODUCTION ENGINEERING
This course is a complete engineering economic feasibility study course relative to the organization, location, establishment of a wood products manufacturing plant.

Prerequisite: senior standing, WOOD 241
3 credits (1 lecture hour, 4 seminar hours), spring semester

WOOD 271 – CABINET DESIGN AND MANUFACTURING
Introduction to the principles of cabinet design and construction including emphasis on practical production problems relative to planning, layout and design, terminology, estimating, production sequence, types of construction, finishing, man-made boards, and installation.

Prerequisite or co-requisite: WOOD 101, DRFT 151, CAD 181 or permission of instructor.
3 credits (1 lecture hours, 4 laboratory hours), spring semester.