ACCOUNTING

ACCT 100 - ACCOUNTING INFORMATION AND MANAGEMENT DECISIONS
This course, for non-business majors only, is an accounting approach to measuring and reporting upon the economic activity, resources, and obligations of a business. Also discussed in 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, 1 laboratory hour), fall or spring semester

ACCT 102 - PRINCIPLES OF ACCOUNTING II
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 that incorporate knowledge from the Financial and Managerial Accounting courses. Students will work with spreadsheets, data bases, Internet, presentation software, and general ledger programs.
Prerequisite: ACCT 102, minimum grade of C
3 credits (3 lecture hours), spring semester

ACCT 105 - MANAGERIAL ACCOUNTING
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 the information is used by managers 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, fall semester

ACCT 201 - INTERMEDIATE ACCOUNTING I
Advanced accounting principles and practices of corporations. 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), fall 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), fall semester

ACCT 212 - FEDERAL INCOME TAX ACCOUNTING
Basic principles of federal income taxation. 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 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 210 – FARM MANAGEMENT
Basic management principles affecting the operation of a farm business are covered in this course, as well as physical production relationships, profit maximization, cost minimization, forms of business organization, and equimarginal returns, enterprise combination, partial and complete budgeting with emphasis on decision making. Units on farm record keeping, including inventories, depreciation, operating and capital income and expenses, balance sheets and income statements, and the use of such records in analyzing the farm business are included. AGBS 210 and AGBS 215 cannot both be taken for credit.
3 credits (3 lecture hours), fall semester
AGBS 220 – AGRICULTURAL FINANCE
Uses of credit including real estate, capital equipment, and annual operating needs. Long term, short term and lines of credit as means of meeting these needs. Sources of credit including PCA, FLB, FMHA, banks, and individuals. Security instruments such as first and second mortgages, collateral mortgages, liens and contracts. Repayment schedules including amortized loans, balloon payments, and refinancing and variable rate loans. Capital investment analysis with emphasis on net present value and yield on investment. Chattel and real estate appraisals including summation, depreciated replacement value, and capitalization methods. Other topics to include real estate taxation, income statements, balance sheets, cash flow budgets, and trend analysis. Semester project dealing with preparation of and application for farm financing. Computer applications as appropriate.
Prerequisites: ESCI 215 or AGBS 210, Pre or Co-requisite: OFFT 110
3 credits (3 lecture hours), spring semester

AGBS 225 - ENVIRONMENTAL ECONOMICS
This course covers application 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

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
Co-requisite: OFFT 110
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.
Prerequisites: AGBS 240 , or permission of instructor
Pre/Co-requisite: AGBS 220
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 210
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 200 Marketing of Agriculture or BSAD 112 Introduction to Marketing, and 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 140Introduction to Microeconomics, AGBS 240 or permission of instructor
4 credits (1 lecture hour, 6 laboratory hours), 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 findings 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, 200, 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 140Introduction to Microeconomics
3 credits (3 lecture hours), spring semester
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: BSAD 325 Strategic Market Analysis
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: BSAD 325 Strategic Market Analyses
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 feed mixers, equipment normally found on dairy farm, and forestry and construction industries. Lectures highlight management considerations whereas laboratories emphasize proper machine operation.
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 flat bed 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 with 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
These credits count towards the Math and/or Science (List B) requirements for graduation.

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 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
2 credits (1 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, Drive train, 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), spring 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.

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 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
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)
These credits count towards the Math and/or Science (List B) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.

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 area 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
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
These credits count towards the Humanities (List A) requirements for graduation.
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.

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
These credits count towards the Humanities (List A) requirements for graduation.

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.

**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

These credits will satisfy the SUNY General Education requirements for "Other World Civilization." These credits count towards the Social Science (List C) requirements for graduation.

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

**ARCHITECTURAL STUDIES AND DESIGN**

**ARCH 101 - ARCHITECTURAL GRAPHIC COMMUNICATIONS**
This is a 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; in both freehand drawing and hard-line drafting/drawing; and in the drawing of orthographic projections as well as in the principles of pictorial (oblique, axonometric and perspective) drawing. These presentation concepts and techniques will aid the student in the development of his or her own rendering style and culminate in the execution and composition of a comprehensive architectural presentation. 4 credits* (2 lecture hours, 4 laboratory hours), fall semester

These credits count towards the Humanities (List A) requirements for graduation.

**ARCH 102 - INTRODUCTION TO ARCHITECTURE**
An introduction to architectural theory through the ages from Vitruvius to today. The course also follows the development of architectural education and the profession of architecture in the United States. An overview of the practice of architecture-from college through the internship development program, to registration will be presented. 3 credits, fall or spring semester

Co-requisite: ENGL 100 (min.) or permission of instructor

**ARCH 141 - ARCHITECTURAL DESIGN I**
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 organizational 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

These credits will satisfy the SUNY General Education requirements for "the Arts."

These credits count towards the Humanities (List A) requirements for graduation.

**ARCH 142 - ARCHITECTURAL DESIGN II**
Sequential course to Architectural Design I. Principles of three dimensional design explored in Architectural Design I are applied to problems dealing with the basic unit of architecture: the room. In working through the problems, students are expected to develop and demonstrate a design logic that accounts for composition, precedent and context. Prerequisite: ARCH 101, ARCH 141

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

These credits count towards the Humanities (List A) requirements for graduation.

**ARCH 151 - ARCHITECTURE: PREHISTORY TO 1800**
The course is the study of the cultural, sociological and technological concepts that have shaped architecture from antiquity through the 18th Century are studies in this course. Pre- or Co-requisite: ENGL 101 or permission of instructor

3 credits (3 lecture hours), spring semester

These credits count towards the Humanities (List A) requirements for graduation.

**ARCH 243 - ARCHITECTURAL DESIGN III**
This is the sequential course to Architectural Design I. The relationship between facade, plan, and section as two-dimensional constructs describing three-dimensional reality will be explored first through an analysis of precedent and then through a facade design problem. Students will then design an architectural structure effectively relating all three dimensions. Throughout the semester, each student will develop a portfolio emphasizing his or her creative design process and documenting work from this course and other courses. Prerequisites: ARCH 101, ARCH 141, ARCH 142

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

These credits count towards the Humanities (List A) requirements for graduation.

**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 courses will be synthesized. With the use of analyses, design presentations and critiques, students will employ a directed approach to the design projects. Students will work in teams and individually to creatively present and design solutions. Projects will vary depending on the progress and approach to architectural design as deemed appropriate by the faculty member. Prerequisite: ARCH 101, ARCH 141, ARCH 142, ARCH 243

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

These credits count towards the Humanities (List A) requirements for graduation.
ARCH 252 - ARCHITECTURE: 1800 TO PRESENT
This course is the study of the architecture of the 19th and 20th centuries concentrating on the major architects and cultural forces shaping each era. Prerequisite: ARCH 151, ENGL 101 or permission of instructor
3 credits (3 lecture hours), spring semester
These credits count towards the Humanities (List A) requirements for graduation.

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

ARCH 272 - ARCHITECTURAL TECHNOLOGY II
Building upon knowledge developed in ARCH 172, students will investigate various interior and exterior enclosure systems, with an emphasis on materials such as concrete and steel. Student will study the principles of various materials from individual structural characteristics to industry uses. The course will also explore roofing materials and design ideologies, accessibility, thermal resistance, wall configurations, and site interpolation and design. Prerequisites: ARCH 101, CAD 181, CAD 183, 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 experimentartion 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
* These credits will satisfy the SUNY General Education requirements for “The Arts.”
These credits count towards the Humanities (List A) requirements for graduation.

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
* These credits will satisfy the SUNY General Education requirements 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
* These credits will satisfy the SUNY General Education requirements 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
* These credits will satisfy the SUNY General Education requirements for “The Arts.”
These credits count towards the Humanities (List A) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.

AUTOMOTIVE SERVICE SPECIALIST

AUOS 121 - AUTOMOTIVE CHASSIS SERVICE
Construction, operation, service and repair of the chassis. Laboratory exercises include lubrication, brakes, suspension, steering, tires, manual transmission and differential service. 5 credit hours (3 lecture hours, 6 laboratory hours), fall semester

AUOS 127 - INTERNAL COMBUSTION ENGINES
Theory of the internal combustion engine including the fundamentals in nomenclature, measurement, wear analysis and repair procedures for all current automotive power plants. Laboratories focus on engine overhaul. 5 credit hours (2 lecture hours, 6 laboratory hours), spring semester
**AUOS 129 - AUTOMOTIVE FUNDAMENTALS**
A study of the physical aspects of our environment and automotive machines in order to better understand and interact with them.
3 credit hours (3 lecture hours), spring semester

**AUOS 161 - AUTOMOTIVE CHASSIS SERVICE II**
Designed to give the student extensive experience in the repair of front-wheel drive suspension and drive axle components, experience in 4-wheel alignment and experience in body panel and headlight adjustments.
Prerequisite: AUOS 121
5 credit hours (2 lecture hours, 6 laboratory hours), spring semester

**AUOS 254 - FUEL SYSTEM SERVICE**
Principles, nomenclature, construction, operation and repair of fuel metering systems. Carburetors, electronic fuel injection and crossfire injection systems. PCM sensor inputs will be covered.
5 credit hours (2 lecture hours, 6 laboratory hours), fall semester

**AUOS 255 - EMISSION CONTROL SYSTEMS**
Construction, operation and practices involved in controlling undesirable emissions (HC, CO and NO), resulting from the operation of gasoline engines.
3 credit hours (2 lecture hours, 6 laboratory hours, 9 weeks), fall semester

**AUOS 256 - EXHAUST AND COOLING SYSTEM SERVICE**
Care, operation, testing and repair of automotive cooling and exhaust systems.
2 credit hours (2 lecture hours, 6 laboratory hours, 6 weeks), fall semester

**AUOS 258 - ENGINE PERFORMANCE SERVICE**
Application of basic principles, methods and procedures utilizing special tools for in-car diagnosis and engine repair. Includes TBI and PFI operations.
Prerequisites: AUOS 254, 255, 256
5 credit hours (2 lecture hours, 7 laboratory hours), spring semester

**AUOS 259 - AUTOMATIC TRANSMISSIONS**
Laboratory practice in the rebuilding and service of the different automatic transmissions in and out of the vehicle.
Prerequisites: AUOS 129 and AUOS 121
5 credit hours (2 lecture hours, 6 laboratory hours), spring semester

**AUOS 260 - AUTOMOTIVE AIR CONDITIONING AND HEATING**
Basic principles, nomenclature and operation as applied to the automotive airconditioning 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

**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 (80 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 101, 103
5 credits (100 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, (100 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 101, 102 and 103
5 credits (120 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 SRDS test equipment, and repair automotive electrical and electronic components and systems.
Prerequisite: ASET 101, 102 and 103
4 credits (140 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 101, 102 and 103
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, AUTO 104, 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 (100 hours combined lecture and laboratory), alternate fall semesters

ASET 202 - MANUAL TRANSMISSION AND DRIVE TRAINS
This course covers the operation of and diagnosis/repair of manual transmissions/transaxles, clutches, drive shafts, axles, and final drives. Topics include theory of torque, power flow, and 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 (100 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 (80 hours combined lecture and laboratory), fall semesters

ASET 204 - AUTOMOTIVE ELECTRONICS I
Direct and alternating current circuits, magnetism, inductance, electrochemical action, and semiconductors. 
Pre/Co-requisite: MAGN 101
3 credits (2 lecture hours, 2 laboratory hours), fall or spring semester

ASET 205 - 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 (140 hours of combined lecture and laboratory), spring semesters

ASET 206 - 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 (140 hours combined lecture and laboratory), spring semester

ASET 207 - 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), fall or spring semester

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), fall semester

AUTO 104 - AUTOMOTIVE ELECTRONICS I

AUTO 105 - AUTOMOTIVE ELECTRONICS II
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 permission of instructor
3 credit hours (2 lecture hours, 3 laboratory hours), spring or summer 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. 
With permission of department chair, BOCES/Technical High School experience may be used for this course. 
3 credits

AUTO 118 - 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), fall semester

AUTO 122 - ENGINE PERFORMANCE
This course covers 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 (140 hours of combined lecture and laboratory), spring semesters

AUTO 223 - 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 (140 hours combined lecture and laboratory), spring semester

AUTO 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
experience.
Prerequisites: Auto 109, Auto 104 or Instructor Permission
3 credits (2 lecture hours, 3 laboratory hours), fall/spring semester

AUTO 202 - AUTOMOTIVE 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, 2 laboratory hours), fall 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 ELECTRONICS III
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 155, 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, 155 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 brake 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, AUTO 138
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, PHYS 107 and permission of the instructor, 5 credits

AUTO 259 - AUTOMOTIVE BODY REPAIR
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 - AUTOMOTIVE AIR CONDITIONING - MINI COURSE
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 269 – UNIBODY REPAIR AND REFINISHING
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: AUTO 259
5 credits (2 lecture hours, 8 laboratory hours), fall semester

AUTO 279 – ADVANCED AUTOBODY 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: AUTO 269
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, designing and fabricating a vehicle. A laboratory practicum will be required in which the student will assist instructors in a Chassis 109 or 209 laboratory.
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 contains information about construction and design of modern automobile electronic fuel injection systems. Topics include electronic component construction, electronic component function, electronic component circuit placement, alternative fuels performance modifications and future trends. The laboratory requirements include a group project, building and programming an electronic fuel injection system to operate a small single cylinder engine.
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 204 & 205 or equivalent.
3 Credits (2 Lecture hours & 3 laboratory hours).

AUTO 359 - ADVANCED AUTO BODY
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), fall semester

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), fall semester

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

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.

Co-requisite: AUTO 360, AUTO 380
3 credits (2 lecture hours, 3 laboratory hours), fall semester

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.

Co-requisite: AUTO 400
1 credit, fall semester

AUTO 421 - AUTOMOTIVE INDUSTRY INTERNSHIP
This course is based upon work experience acquired at a pre-approved manufacturer, dealer, distributor or repair facility. Orientation sessions must be completed 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)

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 SUNY General Education Requirements for “Natural Sciences”.

These credits count towards the Math and/or Science (List B) requirements for graduation.

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 SUNY General Education Requirements for “Natural Sciences”.

These credits count towards the Math and/or Science (List B) requirements for graduation.

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 SUNY General Education Requirements for “Natural Sciences” as long as students also enroll in the lab.

These credits count towards the Math and/or Science (List B) requirements for graduation.

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

These credits count towards the Math and/or Science (List B) requirements for graduation.

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 bioterrorism, 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 SUNY General Education Requirements for “Natural Sciences”.

These credits count towards the Math and/or Science (List B) requirements for graduation.

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 mitosis, 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: Successful completion of general biology in high school with at least a C, 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 SUNY General Education Requirements for "Natural Sciences".

These credits count towards the Math and/or Science (List B) requirements for graduation.

**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

These credits count towards the Math and/or Science (List B) requirements for graduation.

**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.

Co-requisite: BIOL 150; MAST 101 and MAST 102

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

These credits count towards the Math and/or Science (List B) requirements for graduation.

**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.

Prerequisites: BIOL 150 and 150L and BIOL 135 each with a grade of C or better

Co-requisites: BIOL 151 and 151L, MAST 103, MAST 104

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

These credits count towards the Math and/or Science (List B) requirements for graduation.

**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.

Prerequisites: BIOL 150, BIOL 151 with a C- or better

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

These credits count towards the Math and/or Science (List B) requirements for graduation

**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: Successful completion of general biology in high school with at least a C 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 SUNY General Education Requirements for “Natural Sciences”.

These credits count towards the Math and/or Science (List B) requirements for graduation.

**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: Successful completion of BIOL 150 with a C- or better

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

These credits count towards the Math and/or Science (List B) requirements for graduation.

**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

These credits count towards the Math and/or Science (List B) requirements for graduation.

**BIOL 235 - MICROBIOLOGY I**

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 microbes, and reactions under various physical and chemical conditions.

Prerequisite: Successful completion of HS General Biology with at least a C 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 SUNY General Education Requirements for “Natural Sciences”.

These credits count towards the Math and/or Science (List B) requirements for graduation.

**BIOL 236 - MICROBIOLOGY II**

An in-depth study of host-parasite interactions and immunity of the host. Medical microbiology and other applications of microbiology including environmental, water, food, industrial and genetic engineering. The lab includes practical laboratory applications of basic microbiological principles, specimen taking, interpretation of test results including establishment of laboratory skills used in the isolation and identification of microorganisms from nose, throat and stool samples, along with the enumeration of bacteria in milk, water and food.

Prerequisites: BIOL 235 with a C- or better

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

These credits count towards the Math and/or Science (List B) requirements for graduation.

**BIOL 240 - INTRODUCTION TO GENETIC ENGINEERING**

Introduces students to the field of Biotechnology by providing an understanding of the current events in DNA technology and how it is revolutionizing biological research, human medicine, criminal law, and agriculture. The lab includes basic laboratory techniques used in DNA technology forming the foundation for more advanced skills. Demonstrations incorporated as needed.

Prerequisite: One semester of a college-level laboratory course in biology, DANS 110, ESCI 120, NATR 152 or ENSC 102 with at least a C-

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

This course satisfies SUNY General Education Requirements for “Natural Sciences”.

These credits count towards the Math and/or Science (List B) requirements for graduation.
The purpose of this course is to introduce the student to key concepts of 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. Relevant clinical topics, such as allergy, autoimmunity, transplantation, and cancer will also be discussed.

Prerequisites: BIOL 235 and MATH 141 or BSAD 221 or Statistics equivalent

3 credits (3 lecture hours) fall semester

These credits count towards the Math and/or Science (List B) requirements for graduation.

**BSAD 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. Relevant clinical topics, such as allergy, autoimmunity, transplantation, and cancer will also be discussed.

Prerequisites: BIOL 235 and MATH 141 or BSAD 221 or Statistics equivalent

3 credits (3 lecture hours) fall semester

These credits count towards the Math and/or Science (List B) requirements for graduation.

**BUSINESS ADMINISTRATION**

**BSAD 100 - BUSINESS IN THE 21ST CENTURY**

An 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 forms of business organization, labor-management relations, operations management, marketing, promotion, money and banking, financial management, securities markets, risk management and 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**

Development of arithmetical tools in the mechanics of computation and the fundamentals of problem solving. Emphasis is on the application of acceptable business procedures. Cash and trade discounts, principles of markup, payroll, simple interest, discounting notes and drafts, mortgages, property taxes, depreciation, profit distribution, financial statements and analysis, installment buying and insurance.

Co-requisite: MAGN 101

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.

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

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

BSAD 109 - PERSONAL FINANCE
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)

BSAD 112 - MARKETING
An introductory course that provides insight into marketing techniques in a dynamic environment. Emphasis is placed on small business and the focus is directed to both business and non-business situations. Marketing functions such as surveying analysis, and interpretation of data are also performed. Packaging and simulations are also emphasized. Application of course material is assessed through case studies. Students will also demonstrate knowledge of PowerPoint through presentations.
3 credits (3 lecture hours), fall or spring semester

BSAD 116 - BUSINESS ORGANIZATION AND MANAGEMENT
Introduction to concepts of management, development of management thought, and management environments. Special emphasis 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.
Prerequisite: CIT 100 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. Planning and writing effective business letters and memos, letters of application and resume, sales, credit collection, inquiry, order, acknowledgment, claims adjustments, and personnel letters. Gathering and presenting information for reports in written and oral form through research, interviewing, questionnaire, and conferences. Understanding the impact of international business team work, technology, and multiculturalism on business communications. Further developing networking as well as teamwork opportunities.
Prerequisite: ENGL 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. 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.
3 credits (3 lecture hours), fall or spring semester

BSAD 208 - INTRODUCTION TO TOTAL QUALITY MANAGEMENT
To introduce 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 - SALESMANSHIP
Principles and techniques of personal selling and sales management. Concepts include background information a salesperson needs and analysis of the selling process. Sales planning and controlling, selection and training of salespeople, advertising, sales promotion and persuasive communication. Software applications used to manage sales information and PowerPoint presentations are included in this course.
3 credits (3 lecture hours)

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. Sources of money and credit for businesses, agriculture units, consumers, governments, and charitable institutions plus related topics.
3 credits (3 lecture hours)

BSAD 215 - HUMAN RESOURCE MANAGEMENT
Emphasis on personnel principles and tools useful to any employee or prospective manager. Manpower needs, 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. Case approach.
3 credits (3 lecture hours), fall or spring semester

BSAD 216 - CURRENT PROBLEMS IN HUMAN RESOURCE MANAGEMENT
To introduce students to contemporary problems in Human Resource Management. Issues such as AIDS testing, alcohol abuse, and sexual harassment problems in the workplace will be explored. 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 218 - 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)

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...
BSAD 221 - BUSINESS STATISTICS
Principles and methods of the theory and methodology of elementary statistics with the development of an understanding of the role of statistics in business and practical affairs. Emphasis on the use of statistical methods as an analytical tool. 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 strongly recommended. Prerequisite: CITA 100 or permission of instructor. 3 credits (3 lecture hours), fall or spring semester

BSAD 224 - MANAGING DIVERSITY IN THE WORKPLACE
An entry level management course which 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 also will pay special attention to both the fiscal and human effects of new alliances and their 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-national corporations with special regard to American cooperative ventures in such areas as production and distribution will also be discussed. 3 credits (3 lecture hours)

BSAD 226 - INTERNATIONAL MARKETING
This course emphasizes the importance of social, cultural, economic and 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 also discussed. Understanding the contribution that businesses make to underdeveloped nations and understanding trade restrictions are also discussed in this course. Risk assessment of developing businesses in areas is also evaluated in this course. 3 credit hours (3 lecture hours)

BSAD 291 - STUDENT INTERN PROGRAM IN BUSINESS
A field-based internship experience providing 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 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: ENGL 112 or OFFT 140, BSAD 116 or permission of department. 3 credits, fall 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, 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)

BSAD 325 - MARKETING MANAGEMENT
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. Through the use of 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 and either CITA 125 or CITA 130, or permission of instructor. 3 credits (2 lecture hours, 2 laboratory hours), fall and 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), 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), spring semester
BSAD 350 - PRINCIPLES OF CORPORATE FINANCE
An introduction to 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. 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, CIT 100 or CIT 110, and MATH 102, or permission of instructor
3 credits (3 lecture hours), fall semester

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), fall semester

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, foundations of business intelligence, 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 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 125 or CIT 130
3 credits (2 lecture hours, 2 laboratory hours), 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 Obtaining Junior Status, 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 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 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 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 course work; be matriculated in a bachelor degree program with a GPA of 2.0 in business and related classes; or have permission of instructor.
3 credits (3 lecture hours), 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 and Math 153
3 credits (3 lecture hours), 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, spring 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 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 socially cultural concerns will be studied along with Baldridge Award criteria.
Prerequisites: 2nd year CAS standing, CAS 104, 250, 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, 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 SUNY General Education Requirements for "Natural Sciences" as long as students also enroll in the lab.  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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 SUNY General Education Requirements for "Natural Sciences" as long as students also enroll in the lab.  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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 thermodynamics. Prerequisite: high school chemistry and high school algebra, or placement in MATH 102 or higher, or CHEM 101 with a C- or better  
3 credits (3 lecture hours), fall or spring semester  
This course satisfies SUNY General Education Requirements for "Natural Sciences" as long as students also enroll in the lab.  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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  
3 credits (3 lecture hours), spring semester  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**CHEM 141 - CHEMICAL PRINCIPLES I**  
Theoretical in-depth approach to atoms, electronic structure, bonding, thermochemistry, behavior of gases, and solution behavior. Emphasis on problem solving. Prerequisite: Regents chemistry and three units of high school mathematics  
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.  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**CHEM 141L - LABORATORY FOR CHEMICAL PRINCIPLES I**  
Use of precision equipment in collecting data. Experiments quantitatively oriented with considerable use of unknowns.  
Co-requisite: CHEM 141  
1 credit (3 laboratory hours), fall semester  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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  
3 credits (3 lecture hours), spring semester  
These credits count towards the Math and/or Science (List B) requirements for graduation.
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. Co-requisite: CHEM 142
1 credit (3 laboratory hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

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 relevance 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.
Suggested Co-requisite: CHEM 220L or CHEM 241L.
3 credits (3 lecture hours) fall and spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

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.
Co-requisite: CHEM 220
1 credit (3 laboratory hours) fall or spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

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
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.
These credits count towards the Math and/or Science (List B) requirements for graduation.

CHEM 241L - LABORATORY FOR ORGANIC CHEMISTRY I
Separations, purifications, and characterization methods such as distillation, crystallization, chromatography and spectrophotometry. Significant number and types of experiences. Co-requisite: CHEM 241
1 credit (4 laboratory hours), fall semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

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. Prerequisite: CHEM 241 and CHEM 241L or permission of instructor.
3 credits (3 lecture hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.

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.
2 credits (2 lecture hours), fall semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

CHEM 321L - LABORATORY FOR QUANTITATIVE ANALYSIS, INORGANIC
Titrmetric 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
These credits count towards the Math and/or Science (List B) requirements for graduation.

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.
2 credits (2 lecture hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.

CHEM 361 - BIOCHEMISTRY
A study of the molecular components of cells, catabolism, and biosynthesis with applications of principles from general and organic chemistry. Co-requisite: CHEM 242
3 credits (3 lecture hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.
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

COMPUTER- AIDED DESIGN

CAD 181 - INTRODUCTION TO COMPUTER-AIDED DRAFTING
Introduces the concepts of two-dimensional computerized drafting using drawing utilities line modifications, graphic transformations and dimensioning. Includes file management, text editor, plotting, and related CAD system operations. Basic knowledge of drafting desirable.
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 specifically designed for utilization in and application to the field of architecture. Using CAD, students will first learn to generate professional quality two-dimensional drawings and details. Then students will explore three-dimensional projection and material application, culminating in the creation of realistic color renderings of buildings and furnishings. Prerequisite: CAD 181
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 or spring semester

CAD 186 - 3D PARAMETRIC SOLID MODELING
This course involves the utilization of 3-D 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 dimensional 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

COMPUTER INFORMATION SYSTEMS

CITA 100 - INTRODUCTION TO COMPUTING CONCEPTS AND APPLICATIONS
Fundamentals of computer systems. Overview of computer hardware components. Typical software applications including electronic spreadsheets, word processing, graphics, communications, multimedia, and database management systems, will be examined through hands-on experience. Issues and trends in computing technology will also be examined. CITA 100 cannot be taken after successful completion of, or concurrently with CITA 110.
2 credits (3 lecture hours, meets for 10 weeks), fall and spring semester

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.

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, and 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 115 - INTRODUCTION TO THE INTERNET
Techniques for accessing, and applications in using, the Internet in both professional and private situations, including gaining access to the Internet, accessing a variety of resources, publishing on the Internet, and legal and ethical concerns associated with use of the Internet are covered in this course. Current Internet access hardware and software will be utilized. The course will be taught through in-class lecture and demonstrations, supported by extensive hands-on experience.
3 credits (3 lecture hours), fall and 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 100, or permission of the instructor 3 credits (2 lecture hours, 2 laboratory hours), spring semester

CITA 123 - INFORMATION SYSTEMS CONCEPTS AND APPLICATIONS
Methods of selecting and acquiring hardware and software are covered in this course, as well as types of information systems: transaction processing, management information, decision support systems, stages in the system development process and implementation of a simulated computer-based information system. A case study and hands-on approach are used. Prerequisite: CITA 100 or 110 1 credit (3 lecture hours, meets for five weeks), fall and spring semester

CITA 125 - SPREADSHEET CONCEPTS AND APPLICATIONS
Individual, hands-on computer instruction, using electronic spreadsheets, will be provided. Spreadsheets organize useful data for decision-makers and demonstrate how a few changes in operation can produce different and perhaps more desirable results. Spreadsheets will be used as a tool to solve a variety of application problems of the "what if" dimension. Prerequisite: CITA 100 or CITA 110, or OFFT 110, or permission of the instructor 1 credit (2 lecture hours, 2 laboratory hours, meets for five weeks), fall and 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, looping, scalar and array data structures, string and numeric data and modular development. Prerequisite: Math 102 eligibility or permission of the instructor 3 credits (2 lecture hours, 2 lab hours), fall 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, 2 laboratory hours), fall 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. Forms, controls, and properties. 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 213 - DATABASE MANAGEMENT SYSTEMS APPLICATIONS
Individual, hands-on computer instruction, using current database management software, will be provided. Database management software allows a user to create an organized collection of data to manipulate and modify it, to retrieve and report it in a form that is meaningful and useful for decision making. Database management software will be used to illustrate record keeping and reporting in a variety of applications settings. Prerequisite: CITA 123 or permission of the department 1 credit (2 lecture hours, 2 laboratory hours), fall semester

CITA 220 - SYSTEMS ANALYSIS
Philosophy, objectives and organization of the systems analysis activity. Justification of the need for information systems to support management decision making. Behavioral impact of information systems on individuals and organizations. Life cycle and prototyping methodologies. Tools and techniques of systems analysis. Emphasis on transaction processing systems using case studies. Prerequisite: CITA 110, 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, applications and systems used in Web and E-commerce application development. Topics include basicus of application servers and systems, client and server applications, and mobile application development. Students will install an application server and implement simple applications in enterprise and mobile environments. Prerequisite: CITA 120 and CITA140 (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 100 (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 develop 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 280 - TOOLS AND TECHNIQUES FOR APPLICATION DEVELOPMENT
Lecture and hands-on instruction in application development tools. Solutions to case studies requiring the use of database management software, screen and report generators, query languages, application generators, 4GLs and CASE tools. Data modeling and database design. Current topics in application development.
Prerequisite: CITA 140 and 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), spring 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 and ASP’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), fall 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 215 (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 professional quality Web sites and publish projects on a hosting site. Topics include XHTML, Cascading Style Sheets, database driven Web sites, portals, and dynamic content. Design considerations include information architecture, hierarchy, color, and visual message.
Prerequisite: CITA 240, or permission of the instructor
3 credits (2 lecture hours, 2 laboratory hours), fall semester

CITA 335 - ENABLING TECHNOLOGIES FOR ELECTRONIC COMMERCE
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 terminology, hardware, and software associated with data base systems. Topics include file organizations and access methods, historical development of data bases, data organization and structure, relational data bases, types of data base languages, CODASYL data description language and comparison of data base techniques and traditional approaches. Students will design, write, test and debug programs that manage traditional files and databases.
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 - ADVANCED SOFTWARE APPLICATIONS
This is a project oriented course which requires the installation and use of
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 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 other as technological needs continue 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), spring 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 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 – LARGE SCALE WEB DEVELOPMENT
This course combines programming, database, Web server administration, and content development techniques to develop a large scale Web application. Solutions from relatively simple Web forms and reading/writing data to a file system, to solutions using dynamic programming and a database backend are developed. A semester long development project typically includes database integration, user authentication, online storefront applications, content management, and administrative functions and tools. Prerequisites: CITA 210 and CITA 330, or permission of the 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 installing 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
IX

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 Java 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
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 221 - 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.

Prerequisite: 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); these credits count towards the Social Sciences (list C) requirements for graduation.

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) 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 CJUS 202 Policing or permission of the instructor 3 credits (3 lecture hours); fall 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) 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 ENGL 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 ENGL 101 Prerequisite or Co-requisite: CJUS 101 3 credits (3 lecture hours) fall semester 3 Credits (3 lecture hours) sprng 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

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 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 202 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 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: Junior status or permission of instructor 3 credits (3 lecture hours) fall 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 202 and junior status 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 301 3 credits (3 lecture hours) fall 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 301, CJUS 401 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: Senior Status
1 credit (3 lecture hours/5 weeks) fall 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: CJUS 449 Criminal Justice Internship Preparation
15 credits;

CULINARY ARTS

CUL 101 - CULINARY ARTS 1
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, Stewing 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

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) Fall/Spring Semester

CUL 201 - ADVANCED CULINARY ARTS
A continuation on the principles, skills and techniques learned in Culinary Arts 1. 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 all recipes whenever possible. Students will be able to convert recipes to provide 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 Laboratory Hours) Fall

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 Morrisville. 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, CULN 201, 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 diary experience as determined by the instructor
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 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
These credits count towards the Math and/or Science (List B) requirements for graduation.
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  
These credits count towards the Math and/or Science (List B) requirements for graduation.

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.  
Prerequisite: DANS 150  
1 credit (45 laboratory hours), fall or 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 150  
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 records interpretation and analysis, and assessing housing and cow comfort.  
Prerequisite or Co-requisite: DANS 150  
3 credits (2 lecture hours, 2 laboratory hours), fall semester

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 field 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 210, and AGBS 310  
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 210
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 210
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 210
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 power transmission 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, laptop computers and current manufacturers’ software and communication adapters to analyze and repair digital electronic systems on construction, on highway, agricultural and electric power generation systems. Prerequisites: MAGN 101, DTEC 125 or by permission of instructor
4 credits (3 lecture hours, 2 laboratory hours) spring semester

DTEC 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, symbolism, 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

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 pro-social 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
Prerequisite or Co-requisite: ECHD 102, PSYC 241 or Permission of Instructor
3 Credits (2 lecture hours/2 lab 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 experiences 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

**ECHD 205 - CREATIVE ACTIVITIES IN THE ARTS**

This course addresses the creative arts process and curriculum integration of art, drama, literature, music and movement for students preparing to work with young children. It is a participation rich, hands-on course giving all members of the class many varied experiences in the arts both as teachers and as students. Students will learn the value of the arts for growth and development of children as well as ways to integrate the arts into planned programs. Through class discussions, activities, readings and research, students will create specific arts activities that address the needs of a diverse population of children and provide rich multicultural experiences.

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

**ECHD 206 – CURRICULUM METHODS, MATERIALS, AND MANAGEMENT**

This course focuses on curriculum development for preschool and primary school children (through second grade). Students will learn to plan developmentally appropriate learning experiences, design positive learning environments and incorporate play for young children's cognitive, emotional, social, linguistic and physical growth and development. Students will develop materials and activities that address all content areas of early childhood while integrating cultural awareness, diversity and inclusion. Linking the family and community with the early childhood program will be emphasized. A.A.S. Degree students in Early Childhood will incorporate some of the activities and materials into the Practicum-Field Experiences Course. This course is to be taken concurrently with ECHD 212 (Practicum-Field Experience II).

Prerequisites or Co-requisites: ECHD 204, ECHD 205, ECHD 212 or Permission of Instructor
3 credits (3 lecture hours), spring semester

**ECHD 211 - PRACTICUM IN EARLY CHILDHOOD- FIELD EXPERIENCE I**

This course provides each student with direct experience working in a high quality early childhood setting. The experience will connect students' educational theory with actual classroom experience. The student will work with an experienced early childhood professional as his/her cooperating teacher for a minimum of 90 hours during the semester. In addition, students will attend weekly hour seminars. This is the culmination of college work for students in the A.A.S. Degree Program for Early Childhood. Successful completion of this course and the personal portfolio are requirements for this Degree.

Prerequisites or Co-requisites: ECHD 206; Restricted to students enrolled in the final semester of the program; 2.0 GPA, satisfactory criminal background check, and current CPR certification required.
4 credits (1 lecture/3 lab); spring semester

**EDUCATION**

**EDU 101- INTRODUCTION TO TEACHING**

This course introduces students to the requirements for becoming a certified teacher, including academic coursework, degrees, certification areas and requirements, NYS Teacher Certification Exams, fieldwork requirements and current issues in education. Emphasis is on reflective thinking needed to make an informed career choice. Written and oral reports and ten hours of guided fieldwork are required. This course is designed primarily for Liberal Arts and Sciences/Teacher Education Transfer majors.

Prerequisite: Admission to the Teacher Education Transfer Program or by permission of instructor.
1 Credit (One lecture hour), fall or 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.
Co-requisite: EDU 202
3 credits (3 lecture hours), fall or spring semester

**EDU 202 - GUIDED FIELD WORK IN EDUCATION**

This course introduces students in 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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements for “Social Sciences”.

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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements for “Social Sciences”.

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)
These credits count towards the Social Sciences (list C) requirements for graduation.

ECON 370 - INTERNATIONAL ECONOMICS
This interdisciplinary global course interrelates various elements of economics, government and history into the traditional economic analysis. Topics will be related to individuals, families and organizations. 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)
These credits count towards the Social Sciences (list C) requirements for graduation.

ELECTRICAL ENGINEERING TECHNOLOGY

ELEC 100 - ELECTRICAL THEORY IA (D.C.)
ELEC 121 - ADVANCED PRINTED CIRCUIT DESIGN
Principles and techniques for using dedicated CAD programs to fabricate multi-layer, plated-through-hole printed circuit boards. Course work will incorporate surface mount technology devices, pick and place assembly, screening, and solder reflow processes. Prerequisites: a grade of C or better in ELEC 100 or ELEC 190
2 credits (1 lecture hour, 2 laboratory hours), spring semester

ELEC 122 - ELECTRONICS IA (ELECTRONIC DEVICES)
An introduction to solid state devices, including diodes, transistors, and FETs. Students are taught the theory of operation, device DC biasing, and are introduced to the concept of amplification and gain. Students will also model circuits using graphical PSPICE. Prerequisite: minimum C grade in ELEC 100 or permission of instructor.
4 credits (3 lecture hours, 2 laboratory hours), spring semester

ELEC 141 - ELECTRONIC MEASUREMENT TECHNIQUES I
Techniques of accurately measuring voltage, current, resistance, inductance, capacitance, time, and frequency, using both analog and digital instruments. Errors introduced by the instruments and instrument errors themselves will be studied. Methods of data presentation will be covered, including computer data gathering and presentation. 4 credits (3 lecture hours, 3-6 lab hours), available for industrial training

ELEC 142 - ELECTRONIC MEASUREMENT TECHNIQUES II
A continuation of Electronic Measurement Techniques I, stressing the electronic measurement of non-electronic or non-electrical quantities. Emphasis will also be placed on the automatic gathering and presentation of data from measurement sessions.
4 credits (3 lecture hours, 3-6 lab hours), available for industrial training

ELEC 150 - COMPUTER SOLUTION OF PROBLEMS IN ENGINEERING TECHNOLOGY
A course in computer programming used as a tool to solve technical problems. Covers the fundamentals of program design utilizing the “C” language with comparisons to FORTRAN, BASIC, and Assembler. The course also includes algorithm design and program solutions to electrical and mechanical problems. Co-requisite: ELEC 101 and MATH 103
2 credits (2 lecture hours), spring semester

ELEC 160 - APPLIED LINEAR 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, AUTO 104, or permission of instructor.
3 credits (2 lecture hours, 2 laboratory hours), spring semester

ELEC 161 - APPLIED DIGITAL ELECTRICITY & ELECTRONICS
The student will study circuits and elements used to make logical decisions and do control, starting with simple series and parallel switches, relay logic, and solid state logic elements, including transistors and integrated circuits. Elements and devices used to interface between the electro mechanical world and the electrical world will be studied. The use of timing diagrams will be examined. Basic operation of the microcontroller will be introduced. 3 credits (2 lecture hours, 1 recitation, 2 laboratory hours), available for industrial training

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. 4 credits (3 lecture hours, 2 lab hours), available for industrial training

ELEC 192 - INTRODUCTION TO ELECTRICAL MACHINES
An exploration of AC and DC motors, their controls, and AC power distribution. Students will develop a working knowledge of the operations, advantages, and disadvantages of each type of electrical machine. A wide variety of controls will be explored to allow the student to develop an appreciation of control schemes applied to motors. Co-requisite: MATH 102
5 credits (2 lecture hours, 2 laboratory hours), fall semester

ELEC 201 - ELECTRONICS IIA (LINEAR AMPLIFIERS)
A course in solid state circuit analysis addressing small and large signal amplification in transistor and FET amplifiers, differential amplifiers, and linear integrated circuits. Amplifiers will also be modeled using graphical PSPICE. Prerequisite: minimum C grade in ELEC 101 and ELEC 122
4 credits (3 lecture hours, 2 laboratory hours), fall semester

ELEC 202 - ELECTRONICS III (INTEGRATED ELECTRONICS)
A circuit analysis course covering amplifier frequency response, active filters electronic power control, and optical devices. In addition, students are introduced to the fundamentals of oscillators, mixing and heterodyning. Graphical PSPICE is used as an analysis tool. Prerequisite: minimum C grade in ELEC 201
4 credits (3 lecture hours, 2 laboratory hours), spring semester

ELEC 220 - COMPUTER SYSTEMS I (INTRODUCTION TO MICROCOMPUTER SYSTEMS)
This course will cover the operation, organization, and use of microprocessors, microcontrollers, and single board microcomputers. Programming includes assembly and high-level languages. Interfacing of LSI and peripheral devices. Use of specialized test equipment for troubleshooting advanced digital systems. Course also includes building, testing and programming a single board microcontroller. Prerequisite: C grade in ELEC 111, ELEC 150 or equivalent
5 credits (4 lecture hours, open laboratory), fall semester

ELEC 230 - INDUSTRIAL ELECTRONICS I (COMPUTER CONTROL OF PROCESSES)
Fundamentals of operation and control of processes and machines. Transducers, actuators, motors and their control by computers, including PLCs and Microcontrollers. Introduction to power devices and polyphase systems. LABVIEW and IEEE-488 (GPIB) are also covered. A documented individual process control project using a computer or microcontroller is required. Prerequisite: ELEC 220
5 credits (4 lecture hours, open laboratory), spring semester

ELEC 234 - PROGRAMMABLE LOGIC CONTROLLERS
(5-week mini course)
An introduction to applications, programming and hardware required in
the use of programmable logic controllers. Coverage will include safety and wiring practices in controlling a wide variety of processes such as assembly, continuous processes, data logging and motor control. GE, Allen Bradley and NAIS Matsushita controllers are covered. Timers and counters will be used in simple continuity-based exercises.

1 credit (2 lecture hours, 2 laboratory hours), available for industrial training

**ENGR 100 - COMPUTER TOOLS IN ENGINEERING**
(5-week mini course)
A survey of PC-based computer tools applicable to new Engineering Science students. These 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.
Co-requisite: MATH 103 or equivalent
2 credits (4 laboratory hours), fall semester

**ENGR 135 - COMPUTING AND NUMERICAL TECHNIQUES FOR SCIENCE**
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
Co-requisite: MATH 152
3 credits (3 lecture hours), spring semester

**ELEC 235 - COMPUTER MACHINE CONTROL**
(5-week mini course)
Elements of computer-controlled machines and processes including microcontroller interfacing, motor types and control. An introduction to robotics and G-code programming of CNC machines.
1 credit (2 lecture hours, 2 laboratory hours), available for industrial training

**ELEC 236 - INDUSTRIAL INSTRUMENTATION**
(5-week mini course)
A survey of measurement and transducers for pressure, temperature, level, flow, motion and chemical properties. Basics of integrating sensors, signal conditioning, and data transmission in both analog and digital systems for control or data acquisition.
1 credit (2 lecture hours, 2 laboratory hours), available for industrial training

**ELEC 237 - AUTOMATIC CONTROL PROJECT**
(5-week mini course)
A laboratory course where students work on approved projects under the supervision of an instructor. The project is to include electromechanical elements and must fulfill three criteria: measure an independent quantity such as pressure or temperature; process the measured data in a computer, microcontroller or PLC; control an external process using the processed data. The completed project must be fully documented and a presentation must be given.
1 credit (2 lecture hours, 2 laboratory hours), available for industrial training

**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 - COMPUTER TOOLS IN ENGINEERING**
A survey of PC-based computer tools applicable to new Engineering Science students. These 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.
Co-requisite: MATH 103 or equivalent
2 credits (4 laboratory hours), fall semester

**ENGR 201 - ANALYTICAL MECHANICS I**
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
These credits count towards the Math and/or Science (List B) requirements for graduation.

**ENGR 202 - ANALYTICAL MECHANICS II**
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
These credits count towards the Math and/or Science (List B) requirements for graduation.

**ENGR 210 - INTRODUCTION TO 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, analog, zero-pole concepts and coupled circuits. Computer analysis.
Co-requisite: MATH 262
3 credits (3 lecture hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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.
Co-requisites: ENGR 202 and MATH 262
3 Credits (3 lecture hours), spring semester
This course satisfies SUNY General Education Requirements for “Natural Sciences”.
These credits count towards the Math and/or Science (List B) requirements for graduation.

**ENGINEERING TECHNOLOGY**

**ENGT 100 - INDUSTRIAL INTERNSHIP**
A supervised internship program for students majoring in Architectural Studies and Design, Engineering Science, 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
ENGLISH: LITERATURE, THEATER AND COMMUNICATION

SKLS 087 - READING ESSENTIALS
(see SKLS courses)

SKLS 088 - WRITING ESSENTIALS
(see SKLS courses)

ENGL 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 ENGL 100 or C or better in SKLS 088 or equivalent
3 credits (3 lecture hours), fall or spring semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101 or C or better in ENGL 100 or equivalent
3 credits (3 lecture hours), fall or spring semester
This course satisfies SUNY General Education Requirements for “Basic Communication”.
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101.
3 credits (3 lecture hours), fall or spring semester
This course satisfies SUNY General Education Requirements for “Humanities”.
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 112 - 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 ENGL 112 and ENGL 312.

Prerequisite: C or better in ENGL 101.
3 credits (3 lecture hours), fall or spring semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 121 - 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 SUNY General Education Requirements for “Basic Communication”.
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 122 - 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
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 123 - THEORIES OF INTERPERSONAL COMMUNICATION
This course examines dyadic communication and the major variables that impact it. Some issues which will be examined include the impact of gender, power, conflict, and culture. Nonverbal communication and the impact 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 own competence in using them.

3 credits (3 lecture hours), spring semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 124 - INTRODUCTION TO THEATER
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
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 SUNY General Education requirements for “The Arts.”
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 130 - 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
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101.
3 credits (3 lecture hours), fall semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101
3 credits (3 lecture hours), spring semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 205 - ENGLISH LITERATURE TO 1800
This survey course brings to life monsters, dragons, knights, poets, angels and actors from English literature and the culture of the eighth and eighteenth centuries. Watch Beowulf fight Grendel, take a journey to Canterbury with Chaucer’s pilgrims, see a Shakespearian 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 ENGL 101
3 credits (3 lecture hours), fall semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101
3 credits (3 lecture hours), spring semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101
3 credits (3 lecture hours), fall semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101
3 credits (3 lecture hours), spring semester
This course satisfies SUNY General Education Requirements for “Other World Civilizations”.
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101
3 credits (3 lecture hours), fall or spring semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 212 - 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.
Prerequisite: ENGL 101
1 credit, offered on a rotating basis
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 213 - 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: ENGL 101
1 credit, offered on a rotating basis
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 214 - 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: ENGL 212, 213
1 credit, offered on a rotating basis
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101
3 credits (3 lecture hours), offered on a rotating basis
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 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 ENGL 101
3 credits (3 lecture hours), offered on a rotating basis
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 222 - RURAL STUDIES
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 ENGL 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
These credits count towards the Humanities (List A) requirements for graduation.
ENGL 230 - SCIENCE FICTION
This course explores the narrative literature that imagines the impact of scientific advances on the individual, the community and civilization. Marvelous innovations of science or technology trigger changes in the relationship between humans and their universe. As the authors consider consequences and investigate solutions, they offer alternate points of view on our world and possibilities for different directions.
Prerequisite: C or better in ENGL 101
3 credits (3 lecture hours), offered on a rotating basis at the Norwich Campus
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 231 - 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 ENGL 101 and ENGL 102 or equivalent, or by permission of the instructor
3 credits (3 lecture hours), spring or fall semester

ENGL 234 – 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 ENGL 101
3 credits (3 lecture hours), spring semester
This course satisfies SUNY General Education Requirements for "The Arts". These credits count towards the Humanities (List A) requirements for graduation.

ENGL 235 – 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 ENGL 101.
3 credits (3 lecture hours), spring semester, even years.
This course satisfies SUNY General Education Requirements for "The Arts". These credits count towards the Humanities (List A) requirements for graduation.

ENGL 238 - 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 ENGL 101
3 credits (3 lecture hours), offered on a rotating basis
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 240 - THE FILM EXPERIENCE
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 ENGL 101
3 credits (3 lecture hours), offered on a rotating basis
* These credits will satisfy the SUNY General Education requirements for "The Arts."
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 246 - 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 ENGL 101
3 credits (3 lecture hours), offered on a rotating basis
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 249 - 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 ENGL 101
3 credits (3 lecture hours), spring semester
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 250 - 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 ENGL 101
3 credits (3 lecture hours), offered on a rotating basis
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 275 - 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
These credits count towards the Humanities (List A) requirements for graduation.

ENGL 312 - 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 ENGL 112 and ENGL 312.
Prerequisite: Junior or senior standing and C or better in ENGL 101, or by permission of instructor
3 credits (3 lecture hours), fall and spring semesters
These credits count towards the Humanities (List A) requirements for graduation.

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, inventory, financial analysis, cash flow, and budgeting using accounting software. 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 non-existent budgets. Guerilla Marketing tactics and innovation are emphasized.
Prerequisites: Admission into the BBA Entrepreneurship and Small Business Management program, ENTR 317 The Entrepreneurial Process, and BSAD 325 Marketing Management.
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, ACCT 100 or 101, 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: Admission into the Entrepreneurship and Small Business Management BBA program, ENTR 317, BSAD 116, BSAD 221, ACCT 100 or 101, 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: Admission into the Entrepreneurship and Small Business Management BBA program, ENTR 317, BSAD 116, BSAD 221, ACCT 100 or 101, 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: Admission into the Entrepreneurship and Small Business Management BBA program, ENTR 317, BSAD 116, BSAD 221, ACCT 100 or 101, 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: Admission into the BBA Entrepreneurship and Small Business Management program, BSAD 116, BSAD 221, BSAD 325, ACCT 100 or 101, ECON 100 or 140, ENTR 317, 335, 342, 352, and 358
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 for what they will do for 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.
1 credit, fall semester
Prerequisite: Junior standing in the Entrepreneurship and Small Business Management degree program or permission of instructor
Co-requisite: ENTR 417

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

These credits count towards the Math and/or Science (List B) requirements for graduation.

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 SUNY General Education Requirements for “Natural Sciences.”

These credits count towards the Math and/or Science (List B) requirements for graduation.

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.  
Pre requisite: BIOL/ENSC 102 or permission of instructor  
3 credits (2 lecture hours and 2 laboratory hours per week), spring semester

This course satisfies SUNY General Education Requirements for “Natural Sciences.”

These credits count towards the Math and/or Science (List B) requirements for graduation.

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.  
Pre requisite: 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.  
Pre requisite: 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  
Pre requisite: ESCI 150 with a C or better, 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.
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. Theories 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: ECLI 150, ECLI 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, ECLI 150 and ECLI 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.
Prerequisites: 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 ECLI 130 with a B or better and permission of instructor.
4 credits (1 lecture hour and 9 laboratory hours), fall 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 ECLI 320 and 340 with a B or
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), 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. 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. Designed to utilize the skills taught in ESCI 110 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: ESCI 130 with a C- or better or permission of instructor
3 credits (3 lecture hours), spring semester

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. These credits count towards the Math and/or Science (List B) requirements for graduation.
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. Evaluation through written and oral reasons, using correct terminology.
2 credits (1 lecture hour, 1 2-hour laboratory), spring semester

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

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 or approval from instructor
3 credits (2 lecture hours, 2 Laboratory hours), spring 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
5 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 class addresses the most common equine orthopedic and soft tissue injuries and discusses how the normal healing process can be enhanced using rehabilitation therapy. A description of these therapeutic modalities, including but not limited to: ultrasound, magnetic field therapy, joint mobilization, cold/heat therapy, hydrotherapy and hyperbaric use will be studied in conjunction with observation, hands-on interaction and practical sessions. Students will be involved in the day to day management and maintenance of the horses and the facilities. Students will be evaluated on effectiveness, knowledge of therapies, work ethic and communication skills. Current scientific research in the field of equine rehabilitation will be discussed.
Prerequisites: ESCI 312 with a C or better and one of the following: ERID 240, ERID 250, ESTB 200 or ESTB 210 with a B- or better
4 credits (1 lecture hour, 9 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 is a continuation from ESCI 325. Emphasis will be placed on aims of therapy programs that are injury specific and that maximize recovery from injury and/or disease in the horse. In addition, the use of therapy as a training tool and for the prevention of exercise related problems. Students will have hands-on involvement in the daily management of therapy/training horses, practical therapy sessions, management of the facilities. Students will participate in the supervision of underclassmen. Students will be responsible for tracking the progress of horses to therapy and/or training and developing skills in owner correspondence throughout the semester. Students will be evaluated on their effectiveness and leadership, work ethic, and communication skills. Current research papers will be discussed. Presentations by students on the uses of therapies in equine rehabilitation/training will be required.
Prerequisites: ESCI 325 with a B or better
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 of 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 120, 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, ERID 350
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 and ESCI 312
ESCI 110 all with a C or better
2 credits (2 lecture hours), spring semester

ESCI 415 – EQUINE REHABILITATION III
Duties will be expanded from ESCI 365 to focus on the students’ own managerial skills, teaching abilities, and client relations. Students will assist in the management of therapy/training horses and in teaching the skills needed by students enrolled in ESCI 325/365. Students will be involved in horse and facilities management, horse evaluation, tracking the progress of horses to therapy and/or training, equipment operation, budget development, ordering of supplies, billing and client relations. Students will be evaluated on their effectiveness and leadership, work ethic, and communication skills. Current research/therapies will be discussed. Presentations by students on the uses of therapies in equine rehabilitation/training will be required.
Prerequisites: ESCI 365 with a B or better
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. 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, jogging, feeding and conditioning of the race horse. Use and application of miscellaneous equipment. Breaking of the yearling and 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-mutuel 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 101 with a C or better
4 credits (1 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
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 or ESCI 320 and 340
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
4 credits (1 lecture hour and 9 laboratory hours), spring 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 (1 lecture hour), spring semester

ENVIRONMENTAL TRAINING

ETC 101 - WASTEWATER OPERATOR CERTIFICATION
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
EXPLORATORY MAJOR

XMAJ 101 – COLLEGE SUCCESS FOR THE EXPLORATORY MAJOR I
This course will guide the students through the process of setting educational goals, in understanding how campus programs may be tied to those goals, and in identifying strategies that will help promote the students’ success in achieving their goals.
Prerequisite: Enrolled as Exploratory Major or permission of instructor. Not a campus-wide elective.
2 credits (30 contact hours), fall semester

XMAJ 102 – COLLEGE SUCCESS FOR THE EXPLORATORY MAJOR II
This course is a continuation of College Success for the Exploratory Major I. In this course, the student will finalize his/her quest for a major by selecting and focusing on a major.
Prerequisite: XMAJ 101; Enrolled as Exploratory Major or permission of instructor. Not a campus-wide elective.
1 credit (15 contact hours), graded S/F, spring semester

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 or spring 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. This course leads to national certification by the National Restaurant Association.
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 with 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.
Prerequisites: FSAD 101 and 154
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 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. This course leads to national certification by the National Restaurant Association.
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, 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
time control. A true “hands-on” and involved course—customer driven.

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,
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
teaching techniques, with heavy emphasis on experimentation.
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 open only by permission of instructor or the school dean to first-year students returning for their second semester. Working in teams and in
close coordination with the instructor, students will complete an inventory of
their academic strengths and weaknesses, and based on that feedback, develop a
program of study for their remaining time at Morrisville State College and plans for possible transfer. The ability to reflect realistically on the student’s academic
career, to find and evaluate relevant educational information and to nurture
intellectual curiosity will be stressed.
Pre-requisite: Permission of instructor or dean only.
3 credits. (3 lecture hours) fall or spring

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 SUNY General Education Requirements for “Other World Civilizations”. These credits count towards the Social Science (List C) requirements for graduation.

HISTORY

HIST 101 – UNITED STATE 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
These credits count towards the Social Sciences (List C) requirements for
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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements 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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements 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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements for "Other World Civilizations".
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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements for "Other World Civilizations".
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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements for "Western Civilization".
Students may not receive credit for both SOCS 103 and HIST 161

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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements for "Western Civilization".
Students may not receive credit for both SOCS 104 and HIST 162

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
[Offered at Norwich Campus]
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements for "Other World Civilizations".

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 fractious 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
These credits count towards the Social Sciences (list C) requirements for graduation.
This course satisfies SUNY General Education Requirements for "Other World Civilizations".

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
HIST 221 – HISTORY OF THE VIETNAM WAR
Analysis and survey of the history, personalities and events that led 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
These credits count towards the Social Sciences (list C) requirements for graduation.

HIST 225 - WOMEN IN THE UNITED STATES
This course will explore and analyse 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 SUNY General Education Requirements for “American History” for students scoring above 84 on NYS Regents American History.
These credits count towards the Social Sciences (list C) requirements for graduation.

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
These credits count towards the Social Sciences (list C) requirements for graduation.

HIST 320 - HISTORY OF NEW YORK STATE
This course includes the social, political and economic history of New York State from Colonial times through the twentieth century. Topics may vary from semester to semester but will include: The Iroquois and Algonquians, the Dutch and English in Colonial New York, Slavery, the Revolutionary War, the Erie Canal, the Underground Railroad, Women’s Rights, The Shakers, The Mormons, The Abolitionist Movement, The Oneida Community, The Civil War, the Gilded Age, The World Wars and New York after World War II. Special attention is given to regional and Central New York History.
Prerequisite: One of the following courses: HIST 101, HIST 102 or HIST 103 or permission of instructor
3 credits (3 lecture hours), fall semester
These credits count towards the Social Sciences (list C) requirements for graduation.
Students may not receive credit for both SOCS 250 and HIST 320

HIST 371 – THE WORLD WARS
This is a general topics course covering the origins, events, and legacy of the First and Second World Wars. The course examines the nature of the wars including political and military strategy in the major theaters of each war. It discusses significant shifts in the balance of power between the great military powers of the world before, during, and after each conflict.
Prerequisite: any 100-level HIST course
3 credits (3 lecture hours) Offered every other Spring

HIST 372 – THE COLD WAR
This is a general topics course covering the origins, events, and legacy of the Cold War. The course discusses the Cold War as an ideological, military, and economic struggle between the United States and the Soviet Union. It also looks at the struggle from the point of view of the so-called Third World countries including countries in Latin America and the newly independent societies of Africa and Asia exploring the opportunities and problems the Cold War created for them.
Prerequisite: any 100-level HIST course
3 credits (3 lecture hours) Offered every other Spring

HORTICULTURE
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. Labs 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), fall semester

HORT 103 - LANDSCAPE PLANNING AND DESIGN I
This course 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. Through a series of projects within the design studio environment, students explore effective methods of graphic, written and oral communication in the preparation and presentation of illustrative site plans. The semester culminates in a final design project in which students are expected to demonstrate their understanding of the process and requirements of arriving at a landscape design solution for an actual residential site.
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, 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 II
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 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 and 1 lab hour), 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 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.
1-3 credits (1 lecture hour or 2 laboratory hours per credit), fall semester

HORT 111 - 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 111 is a freshman-level course that introduces students to basic science, production procedures, and entrepreneurial skills of horticulture.
1-3 credits (1 lecture hour or 2 laboratory hours per credit), spring semester

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), fall semester

HORT 200 - HORTICULTURE PRODUCTION
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, 3 laboratory hours), spring 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.
3 credits (2 lecture hours, 2 laboratory hours), fall semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

HORT 202 - GREENHOUSE PRODUCTION AND MANAGEMENT
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 203 - FLOWER SHOP OPERATIONS
Involvement in all aspects of operating the campus flower shop. Activities include: constructing arrangements and displays, customer service, developing and marketing specials, and shop maintenance.
2 credits (1 lecture hour and 3 laboratory hours), fall 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 student’s crop and entrepreneurial responsibilities will also increase.
1-3 credits (1 lecture hour or 2 laboratory hours per credit), fall 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 student’s crop and entrepreneurial responsibilities will also increase.
1-3 credits (1 lecture hour or 2 laboratory hours per credit), 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.
3 credits (2 lecture hours and 2 laboratory hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

HORT 245 - LANDSCAPE ARCHITECTURAL DESIGN
In this course, students practice the process of site planning and design in different scales and contexts. In a studio environment, students learn to design landforms and translate their 2-D design plans into 3-D models. This course also provides students with effective methods and media of design graphics and
expands their capacity for observation, visualization and analysis of mass and space. 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
Work in an approved job in the horticulture industry. Comprehensive written report and presentation required at end of work period. Employer and faculty evaluation upon completion of internship.

Prerequisite: Completion of one semester in horticulture and permission of instructor
4 credits (12 weeks-480 hours minimum), 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
1-6 credits (1 lecture hour or 2 laboratory hours per credit), 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 110, HORT 210, or permission of instructor
1-6 credits (1 lecture hour or 2 laboratory hours per credit), fall semester

HORT 320 – HORTICULTURE INTERNSHIP ORIENTATION
Horticulture Internship Orientation is designed to prepare 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, cooperator identification, job application and report writing. It formalizes internship planning and preparation to ensure that internships are conducted in a professional manner, follow course guidelines, and satisfy the goals and objectives of students, faculty advisors, and cooperators.

Prerequisite: Junior status or permission of instructor
1 credit (1 lecture hour), 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: HORT 200, HORT 201, and HORT 202 or permission of instructor
3 credits (2 lecture hours and 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

These credits will satisfy the SUNY General Education requirements for “The Arts.”

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
1-6 credits (1 lecture hour or 2 laboratory hours per credit), 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 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
1-6 credits (1 lecture hour or 2 laboratory hours per credit), spring semester

HORT 420 – HORTICULTURE INTERNSHIP
Horticulture Internship is a 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.

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

HUMANITIES

HUMN 211 - INTRODUCTION TO ISLAM
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 ENGL 101
3 credits* (3 lecture hours), offered on a rotating basis

* This course satisfies SUNY General Education Requirements for “Other
World Civilizations.” These credits count towards the Humanities (List A) requirements for graduation.

**HUMN 223 – NATIVE AMERICAN STUDIES**

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 ENGL 101

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

This course satisfies SUNY General Education Requirements for “Other World Civilizations”.

These credits count towards the Humanities (List A) requirements for graduation.

**HUMN 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. Pre-requisite: C or better in English 101 and junior or senior standing, or permission of instructor.

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

These credits count towards the Humanities (List A) requirements for graduation.

**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 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, clinic 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. Pre-requisite or Co-requisite: PHYS 107 and permission of Human Performance and Health Promotion Coordinator

1 credit (45 fieldwork hours), spring semester

**HPHP 200 – EXERCISE PHYSIOLOGY I**

Examines physiological changes that occur during exercise, after exercise, and as a result of training adaptations. Integrative approach linking basic theories of science with logical application of concepts to normal and special populations. Cardiovascular and respiratory systems 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**

Examines physiological changes that occur during exercise, after exercise, and as a result of training adaptations. Integrative approach linking basic theories of science with logical application of concepts to normal and special populations.

Continuation of coursework covered in HPHP 200. Metabolic and skeletal systems 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 sportspersonship.

3 credits (3 lecture hours per week)

Prerequisite: Junior or senior standing and C or better in PSYC 101, or by permission of the instructor, fall semester

**HPHP 301 – KINESIOLOGY AND APPLIED ANATOMY**

This course deals with the study of the musculoskeletal system and its involvement in human movement. Emphasis is placed on understanding the functional anatomy of the musculoskeletal and articular systems. Basic neuromuscular and biomechanical principles are introduced. Laboratory exercises concentrate on the role of muscle and joint action during basic movements and the adaptations resulting from pathologic conditions. Analysis of skill performances and their relationship to muscle, skeletal, and nervous systems will be emphasized.

Prerequisites: C or better in BIOL 150 or ENSI 110 and 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.

Prerequisites: HPHP 201, MAST 100 and permission of the faculty member.

1 credit (45 fieldwork hours), 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

Credits: 3 credits (3 lecture hours), fall semester
HUMS 100 - 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. These credits count towards the Social Sciences (list C) requirements for graduation.

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

HUMS 141* - INTERNSHIPS IN HUMAN SERVICES I

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 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 101 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 101 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.
Prerequisite: HUMS 200, HUMS 201, SOCI 101
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 MAJORS
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 101 - INTRODUCTION TO MASS
COMMUNICATION
Survey of the mass media to present vocational opportunities, to familiarize students with leading newspapers, magazines, broadcasting, and other communication media, to explore the media’s place in American history, and to examine some of the major issues confronting the press and mass media today. Introduction to communication theory.
3 credits (3 lecture hours), fall semester

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, news sources, and types of news stories.
Pre or Co-requisite: ENGL 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: 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: JOUR 111
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 to 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: ENGL 101
3 credits (3 lecture hours) Fall 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
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/spring

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, 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), spring 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 PR, at the turn of the century and its evolution into a leading industry in today's world. Students will learn first-hand how to identify target audiences and will go through exercises in drafting, producing, and distributing a wide range of PR 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
Continuation of JOUR 285.
1 credit (2 laboratory hours), fall semester

JOUR 286 - PRODUCTION LABORATORY IV
Continuation of JOUR 285.
1 credit (2 laboratory hours), spring semester

JOUR 289 - BROADCAST MANAGEMENT
3 credits, fall 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 293 - SENIOR SEMINAR
Laws, ethics and the general historical background of the American mass media are provided for New York state reporters. In addition, all forms of regulation of the press and mass media are covered alongside the responsibilities of the press offered under the first amendment.
3 credits (3 lecture hours), spring semester

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.

**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 ENGL 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 be explored as available.

Prerequisite: "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 hours 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 present and past, 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
230

6 credits (A minimum of 200 hours in an internship setting plus 40 hours with the instructor, including all assignments)

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 441 – 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 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 485 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)

MANUFACTURING TECHNOLOGY

MFG 105 - COMPUTER NUMERICAL CONTROLLED MACHINES - TURNING CENTER
Instruction in the capabilities and limitations of a programmable two-axis turning center and its related tooling. Programming will be performed using G code preparatory functions on a Fanuc compatible controller using both manual data input (MDI) and CAM software. Topics will include machine safety, machine set up, and cutter technology as related to turning, boring, internal/external threading and related canned cycles.
Co-requisite: MFG 104 or permission of instructor
1 credit (1 lecture hour, 3 laboratory hours), 8-week course, fall semester

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.
Co-requisite: MECH 101 or permission of instructor
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 credits (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: CAD 282, 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.
Co-requisites: BIOL 150 and 150L; BIOL 135; MAST 102; ENGL 101
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.
Co-requisites: BIOL 150 and 150L; BIOL 135; MAST 101 and ENGL 101
4 credits (4 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.
Prerequisites: MAST 102, BIOL 150 and 150L each with a grade of C or better.
Co-requisites: BIOL 151 and 151L; PSYC 101; MAST 104; MATH as advised; BIOL 136
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 and BIOL 150 and 150L each with a grade of C or better.
Co-requisites: BIOL 151 and 151L; PSYC 101; 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 with a grade of C or better
Co-requisites: MAST 202; BIOL 137; MAST 203; Social Science elective
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 with a grade of C or better
Co-requisites: MAST 201 and 203; BIOL 137; Social Science elective
4 credits (2 lecture hours, 6 laboratory hours) fall semester

MAST 203 - PROFESSIONAL ISSUES
Topic areas include regulation of the profession and code of ethics and issues of boundaries in relation to body work, interpersonal communications and therapeutic relationships. Introduces students to the Rules of the Board of Regents on Unprofessional Conduct, Section 6509 of Title VIII, and professional ethics and standards.
Prerequisites: MAST 101, MAST 102, MAST 104, BIOL 136; BIOL 150, BIOL 151 Each with a grade of C or better
Co-requisites: MAST 201, MAST 202, BIOL 137, social science elective
1 credit (1 lecture hour), first half of fall semester

MAST 204 - MASSAGE CLINICAL EXPERIENCE
This course provides the student with the opportunity to apply the knowledge and techniques acquired in all previous massage therapy courses and to become more proficient with client assessment and treatments. Students will become familiar with reading a prescription, developing a plan of treatment and charting methods. This course is offered in a simulated office situation and students must apply massage therapy techniques to another individual for 150 hours under the on-site supervision of a licensed massage therapist. Students will be evaluated applying therapy techniques to a variety of clients using pre-established evaluation criteria.
Prerequisites: MAST 201, MAST 202 Each with a grade of C or better
Co-requisites: MAST 100, MAST 205, MAST 206, ENGL 112 or 121; Humanities elective
5 credits (150 laboratory hours), spring semester

MAST 205 - SENIOR SEMINAR
This course is designed to assist the student’s transition into professional practice. The course examines independent contractor/self employment and paid employee opportunities. Professional standards of practice are reviewed with a focus on legal issues and trends. Aspects of establishing and maintaining an individual practice will be examined including small business planning, business finances, bookkeeping, and marketing/promotions.
Prerequisites: MAST 201, MAST 202, MAST 203 Each with a grade of C or better
Co-requisites: MAST 204, MAST 100., MAST 206, ENGL 112 or 121; Humanities elective
3 credits (3 lecture hours), spring semester

MAST 206 – PROFESSIONAL PRACTICE ISSUES
This course assists the development of professional practice through the discussion of case studies and/or actual client health needs presented in the massage therapy clinic setting. The seminar format allows for discussion of client situations, pathologies and practice issues. This course accompanies MAST 204 which is the clinical component for the Massage Therapy degree.
Co-require: MAST 204
2 credits (2 lecture hours), spring semester

MATHEMATICS

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 below 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>
</tr>
<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 pre-requisite 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 progress in the sequence. In order to progress in the sequence, the numeric grade will be used to determine if the student has met the prerequisite.

Mathematics course electives

<table>
<thead>
<tr>
<th>MATH 123</th>
<th>Elementary Statistics</th>
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</thead>
<tbody>
<tr>
<td>Prerequisite:</td>
<td>MAGN 101 (C or better required) or placement into MATH 102</td>
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<thead>
<tr>
<th>MATH 141</th>
<th>Statistics</th>
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<tbody>
<tr>
<td>Prerequisite:</td>
<td>MATH 102 (C or better required) or placement into MATH 103</td>
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<tr>
<th>MATH 145</th>
<th>Discrete Mathematics</th>
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<tr>
<td>Prerequisite:</td>
<td>MATH 102 (C or better required) or placement into MATH 103</td>
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<table>
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<tr>
<th>MATH 149</th>
<th>Elementary Linear Algebra</th>
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</thead>
<tbody>
<tr>
<td>Prerequisite:</td>
<td>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, including 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; Polynomials; Factoring; Rational expressions; Graphing linear equations. (TI-83 plus or TI-84 plus required)

Prerequisite: SKLS 091 (C or better required) or equivalent

5 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)

Prerequisite: MAGN 101 (C or better required) or equivalent

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

These credits count towards the Math and/or Science (List B) requirements for graduation.

Students who successfully complete MATH 102 will fulfill 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)

Prerequisite: MATH 102 (C or better required) or equivalent

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

These credits count towards the Math and/or Science (List B) requirements for graduation.

Students who successfully complete MATH 103 will fulfill 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. 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. 3 credits (3 lecture hours) These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 123 will fulfill 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; Chi-Square. (TI-83 plus or TI-84 plus required). Students may not take MATH 141 if credit has been received from MATH 123. Prerequisite: MATH 102 (C or better required) or equivalent. 3 credits (3 lecture hours), fall or spring semester These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 141 will fulfill 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). Prerequisite: MATH 102 (C or better required) or equivalent. 3 credits (3 lecture hours), spring semester These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 145 will fulfill 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) Prerequisite: MATH 103 (C or better required) or equivalent. 3 credits (3 lecture hours), spring semester These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 147 will fulfill 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) Prerequisite: MATH 103 (C or better required) or equivalent. 3 credits (3 lecture hours), spring semester These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 149 will fulfill 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) Prerequisite: MATH 147 (C or better required) or equivalent. 3 credits (3 lecture hours), fall or spring semester These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 151 will fulfill 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’Hopital’s Rule; Improper integrals. (TI-83 plus or TI-84 plus required) Prerequisite: MATH 151 (C or better required) or equivalent. 3 credits (3 lecture hours), spring semester These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 152 will fulfill 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.) Prerequisite: MATH 147 (C or better required) or equivalent. (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 These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 153 will fulfill the SUNY General Education requirement for Mathematics.

MATH 154 - 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) Prerequisite: Entrance requirements for Engineering Science 4 credits (5 lecture hours), fall semester These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 154 will fulfill the SUNY General Education requirement for Mathematics.

MATH 156 - 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) Prerequisite: MATH 156 (C or better required) 4 credits (4 lecture hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation. Students who successfully complete MATH 162 will fulfill the SUNY General Education requirement for Mathematics.

**MATH 261 - ENGINEERING CALCULUS III**
Topics include: Vectors in the plane and in three dimensional space; Vector functions; Functions of several variables; Partial derivatives and multiple integration; Vector calculus; Applications to engineering. (TI-83 plus or TI-84 plus required)
Prerequisite: MATH 162 (C or better required)
4 credits (4 lecture hours), fall semester
These credits count towards the Math and/or Science (List B) requirements for graduation.
Students who successfully complete MATH 261 will fulfill the SUNY General Education requirement for Mathematics.

**MATH 262 - 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)
Prerequisite: MATH 261 (C or better required)
4 credits (4 lecture hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.
Students who successfully complete MATH 262 will fulfill 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
3 credits (2 lecture hours, 3 laboratory hours), fall or 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, 2 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 and spring semesters
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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/spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

**MECH 212 - MECHANICAL DESIGN**
Study of translation and rotation plane motion. Graphical kinematic analysis including instant centers, absolute and relative velocities, and accelerations. Graphical differentiation of motion curves. Computer applications.
Prerequisites: CAD 186, MECH 211
4 credits (3 lecture hours, 2 laboratory hours), spring/fall 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: C grade in MECH 211
4 credits (3 lecture hours, 2 laboratory hours), spring/fall semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

**MECH 232 - BASIC FLUID POWER - MINI**
Introduction to the transmission control and storage of pressurized fluid energy systems. Incompressible fluid power systems, circuit applications and diagnosis.
1 credit (2 lecture hours, 2 laboratory hours), five weeks, spring semester

**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 SUNY General Education requirement for “The Arts.”
This course satisfies SUNY General Education requirements for “The Arts”.
These credits count towards the Humanities (List A) requirements for graduation.

**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 SUNY General Education requirement for “The Arts.”
These credits count towards the Humanities (List A) requirements for graduation.

**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 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  
Note: At least three credits from the following courses will satisfy 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

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**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  
These credits count toward the Math and/or Science (List B) requirements for graduation.

**NATR 101 - GENERAL ECOLOGY**  
Interrelationships among living organisms and their environment. Examines the nature of habitats and organism adaptations, life histories and survival strategies, impact of human activities, and extractive economies.  
3 credits (3 lecture hours), spring semester  
Note: At least three credits from the following courses will satisfy the SUNY General Education requirement for “The Arts.”

**NATR 110 - NATURAL RESOURCES MEASUREMENTS**  
Measurements of forest and wildlife resources, evaluation of data and presentation of results. Includes mapping, timber inventories, wildlife population surveys, and report writing.  
3 credits (2 lecture hours, 3 laboratory hours), spring semester

**NATR 112 - 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 115 - FOREST ECOLOGY**  
Physical and biological factors that affect the forest community are discussed. Emphasis is placed on forest ecosystem dynamics and establishing 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  
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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.  
1 credit hour (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 with resulting land formations.  
3 credits (2 lecture hours, 2 laboratory hours), spring semester

**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 computation is emphasized. Field work includes taping, profile and differential leveling, traversing and topographic mapping.  
Prerequisite: MAGN 101 or equivalent

**NATR 144 - SEMINAR IN ENVIRONMENTAL RESOURCES I**  
Designed to inform the freshman Natural Resources Conservation student with the various options of study within the curriculum 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 Natural Resources Conservation students.  
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.  
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, egg inventory, and larval fish identification.  
Prerequisites: NATR 150, NATR 252

**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 facility maintenance, including fish stock inventory and feed ration calculation.  
Prerequisite: 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: NATR 150
Co-requisite: NATR 252
3 credits (2 lecture hours, 3 laboratory hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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
These credits count towards the Math and/or Science (List B) requirements for graduation.

**NATR 256 - AQUACULTURE PRACTICUM II**

Advanced methods in aquaculture, including fish handling, incubation and early-rearing of fish stocks, and water quality management.

Prerequisite: NATR 156
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 288 - RESEARCH IN AQUATIC SCIENCE I
This course provides the ground work for developing and initiating a research project in the aquatic sciences. Students will progress through the steps of conceiving and conducting background research, formulating research objectives, developing a research methodology, and initiating data collection. The efforts of this course will culminate in NATR 289 Research in Aquatic Science.
Prerequisites: Aquaculture and Aquatic Science major AND permission of instructor
1 credit (approximately 4 hours/week independent research, 60 hours total), fall or spring semester

NATR 289 - RESEARCH IN AQUATIC SCIENCE II
This course provides the continuation of the research project initiated in research in aquatic science I. Students will progress through the steps of data collection and analysis, data description and summarization, synthesis of conclusion and presentation of results. The course will culminate in an oral, conference-type research presentation.
Prerequisite: Research in Aquatic Science I and permission of the instructor
1 credit (approximately 4 hours/week independent research, 60 hours total), fall or spring semester

NURSING
NURS 100 - HOLISTIC HEALTH
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 105 - FUNDAMENTALS OF NURSING 1A
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.
Prerequisite: NURS 100 with C+ or permission of instructor
3 credits (4 lecture hours, 5 clinical laboratory hours per week for the first 7 weeks of the fall or spring semester)

NURS 110 - FUNDAMENTALS OF NURSING 1B
This course continues with the theoretical foundation of nursing education and nursing practice with a focus on assessment and implementation of basic nursing care. Students learn to practice therapeutic communication skills to obtain assessment data and implement effective basic nursing care. Critical thinking skills are facilitated by experiences in the clinical agency which enable the student to correlate theoretical knowledge and campus laboratory skills to nursing practice. Particular attention is given to the care of the geriatric individual. Students use medical technology to assess and implement care as well as recognize the role of technology in the diagnosis of health care problems. There is a fee for transportation.
Prerequisite: NURS 105 with C+ grade or better
4 credits (4 lecture hours, 5 clinical laboratory hours, and 2 college laboratory per week for weeks 8-15 of the fall or spring semester)

NURS 150 - NURSING CARE OF THE INDIVIDUAL WITH COMMON HEALTH PROBLEMS
Provides the theoretical foundation for nursing knowledge that supports care of individuals with common health problems across the life span. Students will develop cognitive, affective and psychomotor skills in the campus laboratory setting and implement these skills in acute health care settings. Critical thinking skills which are applied to all phases of the nursing process are developed. Students learn to incorporate the general knowledge of growth and development, cultural and psychosocial needs into the care of individuals. Students utilize professional standards of practice while participating as a member of the health care team by practicing personal professional accountability. Communication skills utilized to effectively report and document nursing care. Technology is utilized to research and access nursing and medical information to deliver health care to individuals and families.
There is a transportation fee in this course.
Prerequisites: NURS 110 (with a C+ grade or better), Pre or Co-Requisite: BIOL 151 and PSYC 241
9 credits (4 lecture hours, 9 clinical laboratory hours, 1 college laboratory hour per week), fall or spring semester

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: ADNR 150 with a C+ or permission of faculty.
2 credits (30 hours/week of clinical laboratory for 2 consecutive weeks).

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 psychiatric facilities 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. Transportation fee
Prerequisite: NURS 150 (with a C+ or better)
Pre or Co-Requisites: NURS 110, BIOL 150, and PSYC 241
9 credits (4 lecture hours, 10 clinical laboratory hours per week), fall or spring semester

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: ADNR 210 with a C+ or permission of faculty.

NURS 250 - NURSING CARE OF THE INDIVIDUAL WITH MULTIPLE COMMON COMPLEX HEALTH PROBLEMS
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.

TRANSPORTATION FEE first 7 weeks only, own transportation required for the last 8 weeks.

Prerequisites: ADNR 210 (with a C+ or better). Pre- or Co- Requisites NURS 251 Completion of designated standardized tests is necessary for recommendation for licensure.

8 credits (4 lecture hours, 8 clinical laboratory hours), fall or spring semester

NURS 251 - TRANSITION INTO PRACTICE
This course assists the student 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 life-long learning by researching and presenting peer reviewed group projects.

This course may be delivered in an on-line form.

Co-requisite: ADNR 250

2 credits, spring or fall semester

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

NURS 300 - BS NURSING PROGRAM ORIENTATION
This course provides the entering BS Nursing student with a formal orientation to the program and curriculum. Students participate in three separate campus classes with required, structured independent work in-between sessions. Students leave this course with completed personal and professional self assessments and interpretation of each; a beginning Professional Development Plan; and a Portfolio. All of these are then used throughout the BS nursing program.

Prerequisite: BS Nursing Program acceptance, or permission of Director. This course is offered at the beginning of each semester.

Corequisite: BS Nursing program acceptance or permission of Director

1 credit (1 lecture hour) fall or spring semester

NURS 310 - CONCEPTUAL FOUNDATIONS FOR PROFESSIONAL PRACTICE
This course engages the learner in exploring the conceptual theories and models for professional nursing practice with a focus on historical and societal influences. The course is organized around the core concepts of the BS nursing program: Patient-Centered Care; Evidence-Based Practice; Nursing Informatics; Leadership; and Professionalism. Integration of knowledge will be demonstrated through a service learning project. This course is offered on campus, with web-based enhancements. Electronic communications are required, including use of Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet

Pre/co-requisite: NURS 300

3 credits (3 lecture hours) fall or spring semester

NURS 330 - HEALTH ASSESSMENT ACROSS THE LIFE SPAN
This course assists the learner in broadening and refining health assessment and physical assessment skills in both self-paced and group learning experiences. Students will: differentiate normal and abnormal assessment findings; conduct and document a complete physical examination; use group learning experiences to broaden knowledge of the cultural determinants of health; use therapeutic communication techniques, evidence-based practice, and the principles of patient centered care to complete a culturally sensitive and developmentally appropriate client history. Documented practice sessions in the campus laboratory and a service-learning project are required. This is an online course with 30 campus lab hours. Electronic communications are required, including use of Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet

Pre/co-requisite: NURS 300; NURS 310 with a C+ or better

5 credits (2 lecture hours; 1 laboratory hour at 2:1 ratio (30 laboratory hours).) fall or spring semester

NURS 361 - HEALTH PROMOTION ACROSS THE LIFE SPAN
In this course the learner will co-construct, with peers, faculty and the broader learning community, new knowledge of the concepts of health promotion and disease prevention across the lifespan and for all levels of care. Topics include a range of determinates of health including psycho-social, physical, spiritual, cultural, and political factors and use a healthiness model based on human strengths to design and implement patient-centered health promotion and disease prevention interventions. The concepts that support teaching and learning for nursing practice will be explored in depth. Nursing informatics is used throughout the course and to develop teaching / learning tools. Integration of knowledge will be demonstrated through a service learning project. This is an online course with enhanced electronic communications requiring Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet

Pre/co-requisite: NURS 310 with a C+ or better

3 credits (5 lecture hours) spring semester

NURS 381 - LEADERSHIP AND MANAGEMENT FOR PROFESSIONAL PRACTICE
This course engages the learner in applying the theoretical principles of leadership and management in professional nursing practice. Current issues in healthcare leadership are studied within a context of the program's five core concepts. Reflection and critical thinking strategies are used to explore and/or resolve leadership and/or management issues related to patient care and healthcare teamwork. Collaboration with interdisciplinary colleagues in healthcare organizations is stressed. The service learning project for this course involves leadership for planned change in your community of choice. This is an online course with enhanced electronic communications requiring Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet

Pre/co-requisite: NURS 310 with a C+ or better

3 credits (3 lecture hours) spring semester

NURS 430 - NURSING RESEARCH AND EVIDENCE-BASED PRACTICE
This course assists the learner in applying the principles of quantitative and qualitative research to patient care, with a strong emphasis on evidence-based practice. Learning activities include critiquing published research literature using critical appraisals. Integration of knowledge will be demonstrated through a service learning project. This is an online course with enhanced electronic communications requiring Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet

Pre/co-requisite: BIOL 302; MATH 123 or equivalent

3 credits (3 lecture hours), fall semester

NURS 431 - HEALTHCARE POLICY, ISSUES AND TRENDS
Current health care issues, trends, policies, and politics are investigated and analyzed, within the context of the program's five core concepts – patient-
centered care, evidence-based practice, nursing informatics, leadership and professionalism. Students will correlate socio-economic-political trends and policies to issues in professional nursing practice and explore appropriate, effective strategies for political activism in professional nursing practice. Integration of knowledge will be demonstrated through a service learning project. This is an online course with enhanced electronic communications requiring Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet. Prerequisite: NURS 310 with a C+ or better.

3 credits (3 lecture hours) spring semester

NURS 450 – PUBLIC, COMMUNITY AND FAMILY HEALTH NURSING
This course guides the learner in developing knowledge and skills in population-based nursing, emphasizing the concepts and theories of family and community health. Professional nursing roles are used for planning, directing and coordinating health promotion and illness prevention activities for a family, group or community as client. The learner applies knowledge of evidence-based practice, epidemiology, organizational communication, cultural competence and quality and cost effective measures to implement nursing care in a community setting. Integration of knowledge will be demonstrated through a service learning project. This is an online course with enhanced electronic communications requiring Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet. 45 hours of clinical experience are required. Prerequisites: All 300 level nursing courses, with a C+ or better. Pre/Co-requisite: BIOL 302.

5 credits (2 PublicHealth/Community lecture hours; 2 Family lecture hours, 1 clinical hour at 3:1 ratio (45 clinical hours), fall semester

NURS 461 – PHARMACOLOGY FOR NURSING PRACTICE
This course presents knowledge of pharmacology used in nursing practice while caring for individuals across the lifespan. Normal anatomy and physiology is correlated with the pharmacodynamics and pharmacokinetics of major drug classes using prototype drugs. Considerations for client assessment, drug administration and evaluation of effectiveness will be addressed through informatics Client teaching, health literacy, healthcare policy and drug development are emphasized. Integration of knowledge will be demonstrated through a service learning project. This is an online course with enhanced electronic communications requiring Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet. Pre/Co-requisite: BIOL 301 and NURS 310 with a C+ or better.

3 credits (3 lecture hours) spring semester

NURS 481 – CLINICAL PRACTICUM IN PROFESSIONAL NURSING
This capstone course emphasizes the integration of professional nursing roles in a health care setting. Synthesis of leadership and management skills, information management and communication skills as well as collaboration with nurse preceptors/mentors/leaders are used to design and direct evidence-based, cost effective care for individuals, families, groups or a community. Integration of knowledge will be demonstrated through a service learning project. The seminar portion of this course is online, requiring Blackboard; Adobe Connect Pro, with webcam & USB headset; Microsoft Office [WORD, PowerPoint and Excel 2007 or higher] and the Internet. Pre/Co-requisite: Final semester standing.

4 credits (1 lecture hour; 3 clinical hours at a 3:1 ratio (135 hours clinical), spring semester

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 or 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

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

NUTR 160 - DIET THERAPY
Diet therapy for disease and special conditions. Application of ADA 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. Prerequisite: 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 clinical sites: fee. Approved uniform required. Prerequisites: C grade or better in NUTR 108 or 110, NUTR 115, FSAD 101. Pre/co-requisite: NUTR 160.

3 credits (6 practical hours, 1 lecture hour), spring semester.

Fee for transportation to and from Field Experience sites

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.

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 him or her for meeting the responsibilities of an intern and exposing him or her 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. Corequisite: 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 and NUTR 170.

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, 2 laboratory hours), fall semester

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 (2 lecture hours, 2 laboratory hours, meets for five weeks), spring and fall semester

OFFT 230 - SUPERVISED FIELD EXPERIENCE II
Prerequisites: C or better in NUTR 160 and NUTR 170
3 credits (6 practical hours, 1 lecture hour), fall semester
Fee for transportation to and from Field Experience sites

OFFT 114 - KEYBOARDING 2-B
This course covers the development of computer keyboarding skills as well as proofreading skills and use Macintosh software.
1 credit (2 lecture hours, 2 laboratory hours), meets for five weeks), spring and fall semester

OFFT 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 101 & 255, NUTR 110, NUTR 115
3 credits (1 lecture hours, 4 laboratory hours), spring semester, laboratory fee required. Approved uniform required.

OFFT 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.
Prerequisites: C or better in NUTR 160, NUTR 210, NUTR 225, NUTR 230
3 credits (6 practical hours, 1 lecture hour), spring semester
Fee for transportation to and from Field Experience sites

OFFT 110 - INTRODUCTION TO SPREADSHEET SOFTWARE
This hands-on course introduces the concepts 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 (2 lecture hours, 2 laboratory hours, meets for five weeks), spring and fall semester

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 (2 lecture hours, 2 laboratory hours), spring and fall semester

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 stoking 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 112 - KEYBOARDING 1-B
Prerequisite: OFFT 111 with minimum grade of C
1 credit (2 lecture hours), fall and spring semester, total of 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.
1 credit (2 lecture hours), spring semester, total of 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.
1 credit (2 lecture hours), spring semester, total of eight weeks

OFFT 106 - PERSONAL COMPUTER KEYBOARDING I
The module includes learning the keyboard by touch, learning the use of computer features, and developing proper stoking 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 106 - MEDICAL KEYBOARDING
16 week 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 semester

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 covered. Many Microsoft shortcuts/commands are emphasized to increase the productivity of the student.
Prerequisite: OFFT 112 or permission of instructor
3 credits (1 lecture hour, 2 laboratory hours), spring semester

OFFT 130 - DATA ENTRY
Operating features of a microcomputer with practical business applications. Speed development of 10,000 keystrokes per hour.
Prerequisite: Keyboarding skill
1 credit, fall semester

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 one year of high school keyboarding
2 credits, 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 3rd party reimbursement issues.
Prerequisite: OFFT 115, OFFT 250
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 200
2 credits (2 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 200 Medical Coding and OFFT 250 Medical Terminology, or permission of the instructor.
2 credit hours – 10 weeks (2 lecture hours, 2 laboratory hours), spring semester

OFFT 210 - ADMINISTRATIVE SUPPORT STAFF PROCEDURES
Exploration of office operations and procedures, new developments in office information technology and equipment, communication transmission 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. Includes 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, OFFT 210, OFFT 120, OFFT 220
3 credits (1 lecture hour, 2 laboratory 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 also introduced as part of being an administrative medical assistant.
Prerequisite: OFFT 116 or OFFT 113/114
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.
Prerequisites: OFFT 112 with a minimum grade of C
3 credits (1 lecture hour, 2 laboratory 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 (2 lecture hours, 2 laboratory 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 semester

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 or OFFT 120 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: Office Technology senior status and OFFT 140

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 credit hours (2 lecture hours, 2 laboratory hours), fall semester

**PARALEGAL**

**PARA 101 - INTRODUCTION TO PARALEGALISM**

Introduction to the principles of law and current problems in their application in modern society. Preparation and interpretation of legal documents. Legal analysis and procedures. Problems faced by the paralegal.

3 credits

**PARA 111 - CIVIL PRACTICE AND PROCEDURE**

An introduction to Civil Practice including examination of jurisdiction, the court system, service of process, pleadings, statute of limitations, provisional remedies, discovery, motions, trials, judgments, enforcement procedures, and appeals.

3 credits

**PARA 121 - LEGAL RESEARCH AND WRITING**

Legal research and the written presentation of the product of that research in acceptable form. Types of law books, research principles, proper form of citation, interpretation of case and statutory law, organization and format of legal writings, and proper maintenance of a law library.

3 credits

**PARA 201 - REAL ESTATE LAW**

Real estate transactions, from the decision to sell through complete and proper transfer of real property. The application of the law to the step-by-step process of real estate acquisition and sale with particular attention to professional cooperation and competence among the various parties to ensure a successful, secure real estate transfer. The law as applied to the landlord-tenant relationship. Layman's knowledge of landlord-tenant rights and duties with respect to the legal relationship.

3 credits

**PARA 211 - ADMINISTRATION OF ESTATES**

Basic principles of probate and trust laws. State and inheritance taxes, preparation of lists of assets, drafting of petitions and preparation of estate tax returns. Emphasis on the paralegal's function in the probate of wills and administration of estates and trusts, using common forms and documents.

3 credits

**PARA 221 - DOMESTIC RELATIONS (FAMILY LAW)**

Examination of domestic relations law with emphasis on marriage, divorce, annulment, separation agreements, adoption and custody proceedings, and other legal matters involving the family. Survey of the appropriate courts and how they deal with such matters.

3 credits

**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 SUNY General Education Requirements for “Humanities”.

These credits count towards the Humanities (List A) requirements for graduation.

**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 SUNY General Education Requirements for “Humanities”.

These credits count towards the Humanities (List A) requirements for graduation.

**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 ENGL 101, junior or senior standing and an introductory course in philosophy, or consent of instructor
3 credits (3 lecture hours)
This course satisfies SUNY General Education Requirements for "Humanities". These credits count towards the Humanities (List A) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.

PHYSICS

PHYS 107 - INTRODUCTORY PHYSICS I
Theory and mathematical analysis of units and methods of measurements, vector quantities, kinematics, Newton's laws, friction, potential and kinetic energy, and linear momentum. Also includes topics in torque, simple machines, and fluids.
Co-requisite: MATH 102 or equivalent
4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester
This course satisfies SUNY General Education Requirements for "Natural Sciences". These credits count towards the Math and/or Science (List B) requirements for graduation.

PHYS 108 - INTRODUCTORY PHYSICS II
Topics include the measurement of heat, the effects of heat on matter, and the transfer of heat. Theory and mathematical analysis of vibrational motion, sound transmission, and wave characteristics. Topics in electromagnetism. Selected topics in light including reflection, refraction, dispersion, interference, diffraction, polarization, and optical instruments.
Prerequisite: PHYS 107 or permission of instructor
4 credits (3 lecture hours, 2 laboratory hours), spring semester
This course satisfies SUNY General Education Requirements for "Natural Sciences". These credits count towards the Math and/or Science (List B) requirements for graduation.

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.
Co-requisite: MATH 103 or equivalent
4 credits (3 lecture hours, 2 laboratory hours), fall semester
This course satisfies SUNY General Education Requirements for "Natural Sciences". These credits count towards the Math and/or Science (List B) requirements for graduation.

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 SUNY General Education Requirements for "Natural Sciences". These credits count towards the Math and/or Science (List B) requirements for graduation.

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.
Co-requisite: MATH 161 or equivalent
4 credits (3 lecture hours, 3 laboratory hours), fall semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

PHYS 158 - UNIVERSITY PHYSICS II (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 157
Co-requisite: MATH 162
4 credits (3 lecture hours, 3 laboratory hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

PHYS 267 - UNIVERSITY PHYSICS III (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, electromotive 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 158
Co-requisite: MATH 261
4 credits (3 lecture hours, 3 laboratory hours), fall semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

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 267
Co-requisite: MATH 262
4 credits (3 lecture hours, 3 laboratory hours), spring semester
These credits count towards the Math and/or Science (List B) requirements for graduation.

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
These credits count towards the Math and/or Science (List B) requirements for graduation.
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 (5 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

PSYCHOLOGY

PSYC 101 – INTRODUCTION TO PSYCHOLOGY
An introduction to the scientific study of behavior, mental processes, and the influences upon them. The course covers major theories and findings in psychology, including learning, cognition, abnormal psychology, and others.
3 credits (3 lecture hours), fall or spring semester
These credits count towards the Social Sciences (list C) requirements for graduation.

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
These credits count towards the Social Sciences (list C) requirements for graduation.

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 (3 lecture hours), fall or spring semester
These credits count towards the Social Sciences (list C) requirements for graduation.

PSYC 243 – ADULT DEVELOPMENT
The years between 18 and 50 are the center of life, a time of growth, opportunity, and crisis. 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, strategies for survival will be explored so that future coping with life’s changes will not be as isolated or overwhelming.
Prerequisite: PSYC 101
3 credits (3 lecture hours), fall or spring semester
These credits count towards the Social Sciences (list C) requirements for graduation.

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
These credits count towards the Social Sciences (list C) requirements for graduation.

**PSYC 284 - PSYCHOLOGY OF GENDER**
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
3 credits
These credits count towards the Social Sciences (list C) requirements for graduation.

**PSYC 304 - INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY**
This course is designed to help students develop an understanding of human behavior in work settings, the variables which impact workers and their productive efficiency and strategies to improve productive human relations in such settings.
Prerequisite: PSYC 101
3 credits (3 lecture hours)
Junior-level status (or permission of instructor)
These credits count towards the Social Sciences (list C) requirements for graduation.

**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
3 credits (3 lecture hours), fall semester
Junior-level status (or permission of instructor)
These credits count towards the Social Sciences (list C) requirements for graduation.

**PSYC 386 - SOCIAL PSYCHOLOGY**
This course examines the relationship between the individual and the group, the influence of culture and institutions on humans, factors in the development of social attitudes, the psychology of mass movements and of social decisions.
Prerequisite: PSYC 101 or permission of instructor
3 credits (3 lecture hours)
These credits count towards the Social Sciences (list C) requirements for graduation.

**RENEWABLE ENERGY**
**RENG 102 – RENEWABLE ENERGY RESOURCES**
A scientific examination of the energy field with emphasis on alternate energy sources; their technology and application. Present needs and future demands; conventional sources, biomass conversions; wind power; geothermal; solar and nuclear energy. Conservation methods stressed. Knowledge of intermediate algebra is highly recommended for this course.
3 credits (3 lecture hours), fall semester, (spring semester Online only)
These credits count towards the Math and/or Science (List B) requirements for graduation.

**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 hour (1 lecture hour per week), fall or spring semester

**RENG 150 – ANALYSIS TECHNIQUES FOR RENEWABLE ENERGY**
This course provides the student 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 by the 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. This course provides an introduction to fluid dynamics, measuring and mapping wind and water resources, and on-site assessments. The course focuses on small- and medium-sized wind machines, generators, alternators, and electricity, including technical aspects of hydroelectric 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 230 – SOLAR AND GEOTHERMAL ENERGY SYSTEMS**
This course provides the student with a technical overview of the components of solar thermal and geothermal 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.
Prerequisite: MATH 102, PHYS 107
3 credits (2 lecture hours, 3 laboratory hours), spring semester

**RENG 305 - RENEWABLE ENERGY SYSTEMS**
This course provides the student with the basic understanding of renewable
energy systems and their potential use for power generation, including electricity. The course focuses 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 310 – 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 by the instructor.
3 credits (2 lecture hours, 3 lab hours), fall 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, and electricity. Students will then begin with technical and sociopolitical aspects of microhydroelectric power generation as renewable energy systems.

Prerequisites: PHYS 107, MATH 102, or permission by instructor.
3 credits (2 lecture hours and 3 lab hours), spring semester

**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

**RENEWABLE RESOURCES**

**RREN 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

**RREN 303 - FUNDAMENTALS OF GPS/GIS**
This course is designed to provide students with basic understanding of global positioning systems (GPS) and geographic information systems (GIS). The focus will be primarily on the application, uses, management, implementation, and benefits of these systems (rather than the theory and the technical details of how GPS and GIS actually “work”). The course is also designed to give students with very little GPS/GIS background a working knowledge of how to gather spatially distributed and geographically referenced data, query data, analyze spatial relationships, and produce maps. The laboratory work will focus on teaching the student how to use GIS and GPS through hands-on exercises.

Prerequisite: upper division standing and basic college computer course or permission of instructor
3 credits (2 lecture hours, 3 laboratory hours), fall semester

**RREN 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

**RREN 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 design, sampling and characterization of lake, river and wetland ecosystems; watershed and catchments delineation. 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

**RREN 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 lectures hours), fall semester

**RREN 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

**RREN 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 land. 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. Prerequisites: REN 303; (senior standing or permission of the instructor) 1 credit (2 lecture hours, 2 laboratory hours), 5-week course, fall 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. Prerequisite: 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. Prerequisites: RREN 420 with a B or better and approval of instructor 1 credit (1 lecture hour), 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 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. Prerequisites: MAGN 101 or placement into MATH 102 or higher 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 such structures. An OSHA 10 hour construction outreach training will be integrated into course. 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. Laboratory人居环境 house designs using “Chief Architect Level II” allows students to design their own home and generate working drawings and material lists. 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. 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 its 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. Prerequisite: MAGN 101 or placement into MATH 102 or higher 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, BSAD 108, TOUR 200
3 credits (3 lecture hours), fall 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
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: OFTT 106, TOUR 106, TOUR 153, BSAD 221, RRMT 320
4 credits, (2 lecture hours, 2 hours of recitation), fall semester

**RRMT 450 - SECURITY AND SAFETY 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, TOUR 252 or permission of instructor
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

**RRMT 480 - RESORT AND RECREATION SERVICE MANAGEMENT INTERNSHIP**
This 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

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 ENGL 101
Pre- or Co-requisite: Lab science
3 credits (3 lecture hours) fall or spring semester
These credits count towards the Social Science (List C) requirements for graduation.

**STS 201 – HISTORY OF SCIENCE**
This is a general 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.
Prerequisite: STS 101 or any 100-level HIST course or permission of
instructor.
3 credits (3 lecture hours) fall semester
These credits count towards the Social Sciences (list C) requirements for
graduation.

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 201, or PHIL 201 or permission of instructor.
3 credits (3 lecture hours) fall semester.
These credits count towards the Humanities (list A) requirements for
graduation.

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; globalization 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)
These credits count towards the Social Sciences (list C) requirements for
graduation.

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
These credits count towards the Humanities (list A) or Social Sciences (list C)
requirements for graduation depending on topic.

STS 411 – SENIOR SEMINAR IN SCIENCE,
TECHNOLOGY, AND SOCIETY
A refinement of the connection between the technical and critical skills
developed throughout the STS major’s coursework. In this course, the students
will learn how to think critically and conceptually about the practice of STS.
Each student in the course will produce a senior thesis.
Prerequisites: senior standing and permission of instructor
Spring semester, 3 credits
These credits count towards the Humanities (list A) or Social Sciences (list C)
requirements for graduation depending on topic.

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

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
These credits count towards the Social Sciences (list C) requirements for
graduation.
This course satisfies SUNY General Education Requirements for “Social
Sciences”.

SOCI 201 - SOCIAL PROBLEMS IN THE 21ST
CENTURY
A consideration of problems confronting 21st century civilization. Topics
include institutional problems within family, economic, political, religious
and educational systems, as well as the effect of these problems on individuals.
Globalization is a central organizing theme of the course.
Prerequisite: HIST 101, HIST 102, HIST 103 or SOCI 101
3 credits (3 lecture hours), fall or spring semester
These credits count towards the Social Sciences (list C) requirements for
graduation.

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
SOCI 220 - 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)
[Offered at Norwich Campus]
These credits count towards the Social Sciences (list C) requirements for graduation.

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
These credits count towards the Social Sciences (list C) requirements for graduation.

SOCIAL SCIENCES
The following courses were discontinued beginning in the fall 2009 semester

SOCS 105 – INTRODUCTION TO PSYCHOLOGY
See PSYC 101

SOCS 106 - INTRODUCTION TO SOCIOLOGY
See SOCI 101

SOCS 108 - INTRODUCTION TO HUMAN SERVICES
See HUMS 101

SOCS 110 - AMERICAN NATIONAL GOVERNMENT
See POLI 101

SOCS 111 - STATE AND LOCAL GOVERNMENTS
See POLI 111

SOCS 113 - AMERICAN JUDICIARY SYSTEM
See POLI 113

SOCS 120 - INTRODUCTION TO MACROECONOMICS
See ECON 100

SOCS 121 - INTRODUCTION TO MICROECONOMICS
See ECON 140

SOCS 122 - INTRODUCTION TO ANTHROPOLOGY
See ANTH 101

SOCS 126 - ENVIRONMENTAL HISTORY*
See HIST 171

SOCS 138 - INTRODUCTION TO CRIMINAL JUSTICE SYSTEMS*
See CJUS 101

SOCS 141, 142, 143* - INTERNSHIPS IN HUMAN SERVICES
See HUMS 141, 142, 143

SOCS 146 – LATIN AMERICAN AND CARIBBEAN HISTORY
See HIST 172

SOCS 205 - PSYCHOLOGY OF GENDER
See PSYC 284

SOCS 208 – CHILD DEVELOPMENT
See PSYC 241

SOCS 209 - ADOLESCENT DEVELOPMENT
See PSYC 242

SOCS 215 - MARRIAGE AND THE FAMILY
See SOCI 220

SOCS 220 - AFRICAN AMERICAN HISTORY
See HIST 220

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
These credits count towards the Social Sciences (list C) requirements for graduation.
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 SUNY General Education Requirements for "Foreign Language".
These credits count towards the Humanities (List A) requirements for graduation.

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 SUNY General Education Requirements for "Foreign Language".
These credits count towards the Humanities (List A) requirements for graduation.

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
These credits count towards the Humanities (List A) requirements for graduation.

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 SUNY General Education Requirements for "Foreign Language".
These credits count towards the Humanities (List A) requirements for graduation.
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 SUNY General Education Requirements for “Foreign Language”.
These credits count towards the Humanities (List A) requirements for graduation.

THEATER

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.
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 (Hospitality, Casino, and Tourism students only), spring semester

TOUR 151 - COMPUTERIZED RESERVATIONS SYSTEM
Presents the concepts, procedures and formulas necessary for a working understanding of American Airlines 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.
Prerequisites: TOUR 101, TOUR 106, OFFT 111/112
Co-requisites: TOUR 152
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.
Prerequisites: TOUR 101 and TOUR 106 or permission of instructor
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.
Prerequisite: TOUR 106 (Recommended)
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 152, TOUR 153 or permission of instructor
Co-requisite: BSAD 112 (Marketing) or CAS 240
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 course covers the planning for various meetings and conventions, catering events, planning, cost controls, special services, technology implications, and sales. National Certification by the American Hotel and Lodging Association.
Prerequisites: TOUR 152, TOUR 155, or permission of instructor
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), fall and spring semesters

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, TOUR 152 and TOUR 253
Co-requisites: TOUR 106 and CAS 240 or BSAD 112
2 credits (4 laboratory hours), 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 and assembly, as well as safety and nomenclature of machines are topics in this course. Laboratory includes construction of kitchen and bath base cabinets. There is a laboratory fee.
3 credits (2 lecture hours, 2 laboratory hours), fall semester

WOOD 110 - TRADITIONAL WOODEN BOAT CONSTRUCTION IN A CULTURAL CONTEXT: THE ST. LAWRENCE SKIFF AND THE ST. LAWRENCE RIVER
This course provides a review of the construction and restoration techniques in traditional plank-on-frame boat building with a look at the ways in which the recreational watercraft have influenced the culture and history of the St. Lawrence River. Students will construct a St. Lawrence Skiff using traditional methods and materials. The course combines a hands-on traditional wooden boat building experience with the study of museum artifacts and primary source historical materials, classroom lectures and field trips. The class meets for 40 hours/week for two weeks.
3 credits (30 lecture hours, 35 laboratory hours), fall or spring
Course is taught at the Antique Boat Museum, Clayton, N.Y.

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 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 period 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 semesters. 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.
1 credit, fall 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 and dry kiln operation, wood-water relationships 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. 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.

EXPLORATORY MAJOR

XMAJ 101 COLLEGE SUCCESS FOR THE EXPLORATORY MAJOR I
This course will guide the students through the process of setting educational goals, in understanding how campus programs may be tied to those goals, and in identifying strategies that will help promote the students’ success in achieving their goals. Prerequisite: Student is enrolled as an Exploratory Major or permission of instructor. Not a campus wide elective.
2 credit (30 contact hours).

XMAJ 102 COLLEGE SUCCESS FOR THE EXPLORATORY MAJOR II
This course is a continuation of College Success for the Exploratory Major I. In this course the student will finalize his/her quest for a major by selecting and declaring a major. Prerequisite: Successful completion of College Success for the Exploratory Major I; student is enrolled as an Exploratory Major or permission of instructor. Not a campus wide elective.
1 credit (15 contact hours) graded S/F.