**COURSE**

 **DESCRIPTIONS**

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| ***COURSE DESIGNATION COURSE PREFIX***  | ***DIVISION*** |
| Accounting  | ACC\*H  | Business |
| American Sign Language  | ASL\*H  | Liberal Arts and Behavioral/Social Sciences |
| Anthropology  | ANT\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Art  | ART\*H, GRA\*H  | Liberal Arts and Behavioral/Social Sciences |
| Astronomy  | AST\*H  | Science, Technology, Engineering & Mathematics  |
| Automotive Technician  | ATP\*H  | Business |
| Aviation Science  | AVS\*H  | Business  |
| Biological Sciences  | BIO\*H  | Science, Technology, Engineering & Mathematics  |
| Business  | BBG\*H, BES\*H, BMK\*H, BMG\*H  | Business  |
| Business Finance  | BFN\*H, BRE\*H  | Business  |
| Chemistry  | CHE\*H  | Science, Technology, Engineering & Mathematics  |
| Communications  | COM\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Computer-Aided Drafting/Design  | CAD H, CAD\*H  | Science, Technology, Engineering & Mathematics |
| Computer Information Systems  | CSC\*H, CST\*H  | Business  |
| Computer Science  | CSA\*H  | Business  |
| Cooperative Education  | CWE H  | Student Services |
| Criminal Justice/Public Safety  | CJS\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Dance  | DAN\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Digital Arts Technology  | DAT\*H  | Liberal Arts and Behavioral/Social Sciences |
| Drug and Alcohol Recovery Counselor  | DAR\*H  | Liberal Arts and Behavioral/Social Sciences |
| Early Childhood Education  | ECE\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Economics  | ECN\*H  | Business  |
| Electronic Engineering Technology  | EET\*H  | Science, Technology, Engineering & Mathematics |
| EMT-Basic  | EMT\*H  | Allied Health/Nursing/Phys. Ed. |
| Engineering Technology  | TCN\*H  | Science, Technology, Engineering & Mathematics |
| English  | ENG\*H  | Liberal Arts and Behavioral/Social Sciences  |
| English as a Second Language  | ESL\*H  | Liberal Arts and Behavioral/Social Sciences |
| Environmental Science  | ENV\*H  | Science, Technology, Engineering & Mathematics  |
| Fire Technology and Administration  | FTA\*H  | Business |
| Geography  | GEO\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Geology  | GLG\*H  | Science, Technology, Engineering & Mathematics |
| Health  | HLT\*H  | Allied Health/Nursing/Phys. Ed. |
| History  | HIS\*H  | Liberal Arts and Behavioral/Social Sciences |
| Honors  | HON H  | Academic Affairs |
| Horticulture  | HRT\*H  | Science, Technology, Engineering & Mathematics |
| Hospitality Mgt. *(Foodservice Mgt and Hotel Mgt)*   | HSP\*H  | Business |
| Human Services  | HSE\*H  | Liberal Arts and Behavioral/Social Sciences |
| Humanities  | HUM\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Interdisciplinary Studies  | IDS H  | Liberal Arts and Behavioral/Social Sciences  |
| Languages  | CHI\*H, FRE\*H, GER\*H, ITA\*H, POR\*H, ASL\*H, SPA\*H | Liberal Arts and Behavioral/Social Sciences |
| Latino American Studies  | LAS\*H  | Liberal Arts and Behavioral/Social Sciences |
| Legal Assistant/Paralegal  | LGL\*H  | Business |
| Management  | BES\*H, BMG\*H  | Business |
| Manufacturing  | MFG H, MFG\*H  | Science, Technology, Engineering & Mathematics |
| Marketing  | BMK\*H  | Business |
| Mathematics  | MAT\*H  | Science, Technology, Engineering & Mathematics |
| Mechanical Engineering Technology  | MEC\*H  | Science, Technology, Engineering & Mathematics |
| Meteorology  | MET\*H  | Science, Technology, Engineering & Mathematics |
| Music  | MUS\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Nursing  | NSG\*H, NUR\*H, HLT\*H  | Allied Health/Nursing/Phys. Ed. |
| Philosophy  | PHL\*H  | Liberal Arts and Behavioral/Social Sciences |
| Physical Education  | HPE\*H  | Allied Health/Nursing/Phys. Ed. |
| Physical Therapist Assistant  | PTA\*H  | Allied Health/Nursing/Phys. Ed. |
| Physics  | PHY\*H  | Science, Technology, Engineering & Mathematics |
| Political Science  | POL\*H  | Liberal Arts and Behavioral/Social Sciences  |
| Psychology  | PSY\*H  | Liberal Arts and Behavioral/Social Sciences |
| Quality Assurance  | QUA\*H  | Science, Technology, Engineering & Mathematics |
| Radiologic Technology  | RAD\*H  | Allied Health/Nursing/Phys. Ed.  |
| Research  | RES H  | Liberal Arts and Behavioral/Social Sciences |
| Respiratory Care  | RSP\*H  | Allied Health/Nursing/Phys. Ed. |
| Sociology  | SOC\*H  | Liberal Arts and Behavioral/Social Sciences |
| Theater  | THR\*H  | Liberal Arts and Behavioral/Social Sciences  |

*The \* denotes courses which have the same number as similar courses at other community colleges in Connecticut.*

**COURSE DESCRIPTIONS**

The following are descriptions of courses offered by Naugatuck Valley Community College. It is the responsibility of the students to check their programs of study, and to carefully check the schedule of course offerings prior to each semester, in order to ascertain which courses will be offered for a particular semester.

In the following course descriptions, the number of credit hours for each course is indicated. Also included are numbers of lab and lecture hours. Students are urged to consult their counselor for information about transferability of courses to four-year institutions.

**WAIVER OF COURSE PREREQUISITES**

In certain circumstances, course prerequisites may be waived. The student must demonstrate to the program coordinator and/or Division Leader that he/she has mastered the basic concepts of the prerequisite course. Permission to waive a prerequisite should not be taken for granted. Waivers are NOT automatic and will be handled and granted on an individual basis.

*Note: All courses listed in this catalog may not be offered during the current academic year.*

**CREDIT COURSES WHICH DO NOT APPLY TO**

**ELECTIVES OR DEGREES**

The following courses do not satisfy the elective or degree requirements in any program except where specifically listed.

 CWE-H100 - Portfolio Preparation

 ENG\*063, 096

 ESL\*012, 013, 015, 017, 022, 025

 HLT\*H093

 MAT\*H092, 094, 095

**HELPFUL DEFINITIONS WHEN SELECTING YOUR PROGRAM AND COURSES**

1. **Credit Hours (credits) -** College work is measured in units called credit hours. A credit-hour value is assigned to each course and is normally equal to the number of hours the course meets each week. Credit hours may also be referred to as semester hours.
2. **Lecture Hours (lec.) -** The number of clock hours in the fall or spring semester the student spends each week in the classroom. This time frame is different for the shorter summer sessions.
3. **Laboratory Hours (lab.) -** The number of clock hours in the fall or spring semester the student spends each week in the laboratory or other learning environment. This time frame is different for the shorter summer sessions.
4. **Prerequisite -** A course that must be successfully completed, or a requirement such as related life experiences that must be met before enrolling in another course.

***Course***

***Descriptions***

1. **Corequisite -** A course that must be taken during the same or earlier semester as the course in which one is enrolling.
2. **General Education Core -** A term which refers to courses as listed under the 11 competencies of Naugatuck Valley Community College’s General Education Core which the faculty of the College considers essential to its degree programs. Refer to pages 50-55.
3. **Electives -** Courses which may be chosen from items 8, 9, or 10.
4. **Liberal Arts Electives -** All courses listed in the general education core.
5. **General Electives -** All courses listed in the catalog. Students who have taken restricted courses may apply the courses as general electives if they change programs. Students should consider transferability of courses when choosing general electives.
6. **Directed Electives -** Credit courses that satisfy specific program requirements. These courses are listed with each program area.
7. **Language Equivalencies -** The following equivalencies satisfy the modern language requirements:
	* Three years of high school work in a single foreign language, ancient or modern, or
	* Two years of high school work and an added semester of a college course at a more advanced level in a single foreign language, or
	* Two semesters of a single foreign language in college.

*Note: Students may also take CLEP (College Level Examination Program) to satisfy the modern language requirements. Information on these tests is available from the Testing Center.*

This College continues to add and adjust courses, course designations, and course numbers to its offerings. The general education core and the definitions will be adjusted accordingly.

**SELF-PACED COURSES**

Some of the courses listed in the description are offered as “self-paced” which means that they are conducted in an alternate way to the regular class scheduled meetings. These courses are offered through the standard text books, and specially prepared materials, and/or video/audio tapes. Students are guided through the courses by a relevant member of the faculty. Students should be aware that self discipline is required for the successful completion of self-paced courses. Permission from a counselor, the relevant faculty member or Division Leader is required before students register for self-paced courses. The student may register at any time. The course must be completed by the end of the succeeding semester.

**INDEPENDENT STUDY** Independent study courses may not be taken if the course is being offered in the same semester.

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| ***Policy Changes***Naugatuck Valley Community College reserves the right to change requirements, courses, prerequisites, regulations, tuition, fees and other policies without prior notice. The President of the College upon written request may make waivers of these policies, due to extenuating circumstances. The catalog does not constitute a contract and is for informational use only.  |

# ACCOUNTING

## Business Division

**ACC\*H113 Principles of Financial Accounting 3 credits** *Prerequisite: ACC\*H113 is a rigorous college level course. Students should have completed all developmental course work.* The course offers an introduction to financial accounting with an emphasis on the use and interpretation of financial accounting information. It introduces the student to the balance sheet, income statement, statement of retained earnings, the cash flow statement and the operation of an accounting information system. The course focuses on the fundamental theory and principles of accounting, and utilizes accounting procedures to clarify and demonstrate the underlying concepts. The computer is used in this course.

**ACC\*H117 Principles of Managerial Accounting 3 credits**

*Prerequisite: ACC\*H113.* The major objectives of this course are to introduce management tools and models that use accounting information. The use of accounting information for planning, controlling, and decision-making is explored in topics including cost behavior, budgeting and cost accounting. The analysis and interpretation of information are stressed in this rigorous one semester management accounting course. The computer is used in this course.

**ACC\*H123 Accounting Software Applications 3 credits** *Prerequisites: Grade of “C” or better in ACC\*H113, CSA\*H105, and MAT\*H137. Corequisite: ACC\*H117.* Recognizing the importance of computer skills in accounting, this course is designed to acquaint the student with techniques and procedures in using microcomputers as a problem-solving tool in accounting and related disciplines. A PC accounting package and a computerized spreadsheet package will be used in the course. The course will be appropriately rigorous, and the spreadsheet usage will be centered around problems typical of a second semester accounting course.

**ACC\*H241 Federal Taxes I 3 credits**

The Federal Income Tax course is a one-semester study of the Internal Revenue Code as it pertains to individuals. Its purpose is to introduce the student to the federal income tax laws and the application of those laws to the preparation of tax returns.

**ACC\*H271 Intermediate Accounting I 3 credits**

*Prerequisite: Grade of “C” or better in ACC\*H117.* This course is designed to develop a high level of technical competence. Beginning with basic accounting issues, the course develops students’ skills to the point at which they can handle complex professional level problems requiring not only a knowledge of procedures, but also a keen awareness of the concepts behind them. Consideration is given to analysis and interpretation of financial data.

**ACC\*H272 Intermediate Accounting II 3 credits**

*Prerequisite: Grade of “C” or better in ACC\*H117.* ACC\*H272 is a continuation of the studies begun in CCT-H201. Particular emphasis is on the topics involving financial statement reporting and disclosure. Subjects covered in depth include current and long-term liabilities, long term investments, the accounting for corporate capital, retained earnings and dividends, the preparation of the Cash Flow Statement, and Income Tax Accounting.

# ANTHROPOLOGY

## Liberal Arts and Behavioral/Social Sciences Division

**ANT\*H101 Introduction to Anthropology 3 credits**

*Prerequisite: Eligibility for ENG\*H101.* This course is an introduction to the four fields of anthropology; physical (or biological), cultural, archaeological, and linguistic. Topics include a study of evolution, the origins of humankind, human variation, the development of culture, economic and political organization, archaeology, language and communication, marriage and family patterns, kinship and descent, religion, the arts, personality and culture, and cultural change.

**ANT\*H121 Introduction to Archaeology 3 credits**

Archaeology is the study of past cultures and societies through examination of their material remains. The class will explore different varieties of archaeology and examine theory, methods, and techniques for investigating, reconstructing, interpreting, preserving, and ultimately, learning from the past. Students will then briefly review human cultural chronology from the time of the first people, the earliest Paleolithic ages, to the present, and deal with not only the artifact remains but also important social, economic, and even ideological questions, such as those on the origins of food production, social inequality, and civilization. Two major emphases throughout the course are archaeology as anthropology and the relevance of archaeology to modern human society and politics. The class will also examine discoveries that make the news during the semester.

**ANT\*H205 Cultural Anthropology 3 credits**

This course is an examination of the concept of culture as the central mode through which humans become people. Students will examine the concept of culture vs. instinct, human cultural adaptation and variation, along with cultural universals, language and communication, marriage and family patterns, kinship and descent, religion, the arts, economic and political organization, personality and culture, and cultural change.

# ART

## Liberal Arts and Behavioral/Social Sciences Division

The Division of Liberal Arts and Behavioral/Social Sciences encourages students to register for Art courses in order to develop appreciation of, and skills in, the Arts. Some of the courses are required in career programs; others are designed for students’ interests and personal development. Consultation with counselors will help determine specific needs. For information, contact the Division of Liberal Arts and Behavioral/Social Sciences at 575-8004.

**ART\*H101 Art History I 3 credits**

This course is a survey of Western art and architecture from prehistory to the gothic period through an historical, cultural, and technological perspective. The class will include lectures, video and slide presentations For the art major or general student.

**ART\*H102 Art History II 3 credits**

This course is a survey of Western art and architecture from the early Renaissance to the present day through an historical, cultural, and technological perspective. The class will include lectures, video, and slide presentations. For the art major or general student.

**ART\*H111 Drawing I 3 credits**

Fundamentals of drawing and the use of line as an expressive medium are examined to show structure of form and space in still life, landscape, and the human figure. Work in a variety of media including pencil, pen and ink, wash, charcoal, and pastel is included.

**ART\*H112 Drawing II 3 credits**

*Prerequisite: ART\*H111 or permission of the Division Leader.* This is a continuation of ART\*H111. Planned experiments using various media and the development of a personal style in drawing are offered.

**ART\*H121 Two-Dimensional Design 3 credits**

This is an introduction to color and design in two-dimensional work in various media.

**ART\*H122 Three-Dimensional Design 3 credits**

This course is an introduction to three-dimensional studio techniques, use of materials, tools and media.

**ART\*H131 Sculpture I 3 credits**

This course is an introduction to sculptural form and composition through direct techniques in a variety of materials including wood, plaster, clay and plastics.

**ART\*H132 Sculpture II 3 credits**

*Prerequisite: ART\*H131 or permission of the Division Leader.* This is a continuation and development of techniques introduced in Art\*H131 as well as involvement in more advanced processes such as kinetic, metals and large scale work. Independent work will be encouraged.

**ART\*H151 Painting I 3 credits**

*Prerequisite: ART\*H111.* This is a beginning course in painting in which the student is introduced to the methods and materials of painting and is encouraged to develop some proficiency in the technique of oils, acrylics, or watercolor through exploration and experimentation

**ART\*H152 Painting II 3 credits**

*Prerequisite: ART\*H151 or permission of Division Leader.* This is a continuation of ART\*H151. Emphasis is on the development of skills and individual expression in the use of oils or acrylics.

**ART\*H161 Ceramics I 3 credits**

This is an introduction to the creative possibilities of ceramic clay in pottery and sculpture through basic hand modeling techniques such as coil, slab, drape, and potter’s wheel. Firing and kiln procedures will also be covered.

**ART\*H162 Ceramics II 3 credits**

*Prerequisite: ART\*H161 or permission of Division Leader.* This course is a continuation of ART\*H161. Concentration is on wheel thrown and hand built forms, kiln operation and glaze formation.

**ART\*H167 Printmaking I 3 credits**

Introduction to basic techniques in such graphic processes as silk screen, block printing, offset and dry-point etching.

**GRA\*H150 Introduction to Graphic Design 3 credits**

This course is an introduction to the basic principles and processes of Graphic Design. Students will learn basic design, layout, and imaging skills through the use of IBM software applications for computer graphics (Quark Xpress and Adobe Illustrator). Previous drawing/ design experience and computer skills are helpful.

# ASTRONOMY

## Science, Technology, Engineering & Mathematics Division

**AST\*H101 Principles of Astronomy 3 credits**

*Prerequisite: MAT\*H095 or placement test score.* This course explores man’s rapidly growing knowledge of the Cosmos. Topics include: the sun as a star; the birth and death of stars; the nature of black holes, pulsars, and quasars; the origins of our solar system and the Universe; the identification of stars and constellations in the night sky; and the nature of time as man’s invention. Observatory sessions and projects planned as weather permits. *Students may not receive credit for both AST\*H101 and AST\*H111*. (fall/spring/summer)

**AST\*H111 Introduction to Astronomy 4 credits**

*Pre-requisite MAT\*H095 or placement score.* This course is designed to give an overview of the major topics in astronomy and requires basic algebra. The topics covered include: the night sky, the origins of astronomy, a brief description of physics in astronomy, our solar system, stars, galaxies and cosmology. The lab portion will support the understanding of concepts and computation in astronomy. Sessions in the NVCC Observatory will be an integral part of the course. Three hours of lecture and two hours of laboratory weekly.

*Students may not receive credit for both AST\*H101 and AST\*H111*. (fall/spring)

# AUTOMATED MANUFACTURING ENGINEERING TECHNOLOGY

**Science, Technology, Engineering & Mathematics Division**

***Course***

***Descriptions***

Refer to Manufacturing.

# AUTOMOTIVE TECHNICIAN

## Business Division

**ATP\*H100 Integrated Automotive Systems 3 credits** This is an introductory course for the Automotive Technician providing the theory for a foundation in the field. Emphasis will be on basic automotive service procedures and the inter-relationship of the various automotive systems. Shop safety, proper care and use of tools are included. Two-hour lecture and two and one-half hours laboratory weekly.

**ATP\*H110 Automotive Electrical Systems 3 credits** *Corequisites: ATP\*H100 and MAT\*H095 or satisfactory completion of College placement test or with permission of the Coordinator.* The study of electrical theory and nomenclature along with applications of electrical/electronic systems. To include, but is not limited to: starting, charging, lighting, wiring, accessories, diagnosis and repairs. Two-hour lecture and two and one-half hours laboratory weekly.

**ATP\*H120 Engine Repair 3 credits**

*Corequisite: ATP\*H100 or with permission of the Coordinator.* Diagnosis of automotive engines and their lubrication and cooling systems. Included is engine construction, operation along with disassembly and assembly techniques. Two-hour lecture and two and one-half hours laboratory weekly.

**ATP\*H130 Brakes 3 credits**

*Corequisite: ATP\*H100 or with permission of the Coordinator.* Covers the maintenance, diagnosis and repair procedures of disc and/or drum brake systems including ABS (antilock brakes) along with their mechanical, hydraulic and electrical components. Two-hour lecture and two and one-half hours laboratory weekly.

**ATP\*H140 Automotive Heating and
Air Conditioning 3 credits**

*Corequisite: ATP\*H100 or with permission of the Coordinator.* Theory-related instruction of the automotive heating and air conditioning systems. Emphasis is placed on basic refrigerant cycles, heat transfer, trouble shooting, and diagnosis of both refrigerant and electronic control systems. Two-hour lecture and two and one-half hours laboratory weekly.

**ATP\*H150 Suspension and Steering 3 credits**

*Corequisite: ATP\*H100 or with permission of the Coordinator.* The diagnosis and repair of steering and suspension systems and their inter-relationship to wheel alignment. The course includes a thorough knowledge of wheel and tire maintenance. Two-hour lecture and two and one-half hours laboratory weekly.

**ATP\*H185 Automotive Service and Parts Department**

 **Management 2 credits**

*Prerequisite: ATP\*H100 or with the permission of Coordinator.* Topics in this course include marketing techniques, financial analysis, personnel management, work scheduling and distribution, and use of pricing manuals. An in-depth study of parts numbering, storage, cataloging, retrieval, ordering, and stocking management techniques will be discussed. Two lecture hours weekly.

**ATP\*H190 Metallurgy/Welding 2 credits**

In the automotive field, the use of the oxyacetylene torch and the mig welder is common place. Automotive technicians need to be able to use the processes of welding and brazing, etc. safely and skillfully. This course offers both theory and a practical lab section so students will be both skilled and knowledgeable in all the welding technology covered. One-hour lecture and two hours of laboratory weekly.

**ATP\*H210 Engine Performance 3 credits**

*Prerequisite: ATP\*H110 or with permission of the Coordinator.* Fuel theory and nomenclature necessary to service and repair computerized automotive fuel systems. This includes but is not limited to computer controls, ignition, fuel, exhaust and emission systems and their maintenance, diagnosis, adjustments and repair. Two hours lecture and two and one-half hours laboratory weekly.

**ATP\*H220 Automotive Emissions 3 credits**

*Prerequisite: ATP\*H210 or with permission of the Coordinator*. This is a continuation of ATP\*H210, emphasizing practical application on the cause and effect of HC, CO, and NOx emissions. This includes various systems diagnosis, containing but not limited to, general powertrain, computerized powertrain controls, fuel and air induction, emissions control, and I/M failure. Two-hour lecture and two and one-half hours laboratory weekly.

**ATP\*H261 Manual Drive Train and Axles 2 credits** *Corequisite: ATP\*H100 or with permission of the Coordinator.* The diagnosis and repair of manual drive transmissions and transaxles. This includes clutches, drive (half) shaft, and universal joints along with rear axle and four wheel drive components. One-hour lecture two hours lab weekly.

**ATP\*H262 Automatic Transmission and**

 **Transaxle I 2 credits**

*Corequisite: ATP\*H100 or with permission of the Coordinator.* The operation, diagnosis and maintenance of automatic transmission and transaxles to include in-vehicle and off-vehicle adjustments and repair. One-hour lecture and two hours lab weekly.

**ATP\*H270 Introduction to Diesel Mechanics 3 credits** *Coerequisite: ATP\*H100 or with permission of Coordinator.* The course introduces the diesel engine, its capabilities, operations, and its unique engine fuel delivery systems. Two-hour lecture and two and one-half hours of laboratory weekly.

**ATP\*H280 Alternative Fuel Vehicle Fundamentals 2 credits** This course is designed to prepare automotive technicians, dealers, and repairers to take the ASE Alternative Fuel Vehicle Certification examinations. It covers fundamental procedures, operations, safety, regulations and inspection of Alternative Fuel Vehicles. One-hour lecture and two hours of laboratory weekly.

**ATP\*H290 Cooperative Work Experience I 3 credits** *Prerequisites: ATP\*H100, 110, 120, 130, 150, ENG\*H101, minimum 30 credits of course work completed and a 2.5 GPA, or with permission of Coordinator.* This required course is designed to bridge the gap between academic theory and practical work experience. It consists of a minimum 250-hour Cooperative Work Experience

**ATP\*H291 Cooperative Work Experience II 3 credits** *Prerequisites: ATP\*H290 and a minimum of 40 credits of course work completed and a 2.5 GPA, or with permission of Coordinator.* This required course is designed to bridge the gap between academic theory and practical work experience. It consists of a minimum 250hour Cooperative Work Experience.

# AVIATION SCIENCE

## Business Division

**AVS\*H101 Private Pilot Lecture 3 credits** *Corequisite: AVS\*H201.* This ground school course includes coverage of basic flight concepts, principles of meteorology, aeronautical charts and publications, pre-flight planning, flight computer and plotter, basic radio navigation, Federal Aviation Regulations, basic aerodynamics, aircraft avionics, and emergency procedures. This course prepares students for the FAA Private Pilot Knowledge Test.

**AVS\*H103 Instrument Lecture 3 credits**

*Prerequisites: AVS\*H101, AVS\*H201.* This ground school course includes coverage of human factors and aviation physiology, the construction, use and interpretation of aircraft instruments used in instrument flight, Federal Aviation Regulations, instrument navigation, the ATC system, aeronautical charts and publications related to instrument flight, instrument approaches, weather analysis for instrument operations, and instrument emergency procedures. This course prepares students for the FAA Instrument Rating Knowledge Test.

**AVS\*H104 Commercial Pilot Lecture 3 credits**

*Prerequisite: AVS\*H103, AVS\*H203.* This ground school course includes coverage of advanced human factors and aeronautical decision making for commercial operations, advanced navigation, advanced aircraft systems, advanced aerodynamics and commercial maneuvers, and emergency procedures for commercial operations. This course prepares students for the FAA Commercial Pilot Knowledge Test.

**AVS\*H120 Foundations of Aviation 3 credits**

This course explores the events that have shaped the development of aviation from the earliest attempts at flight up to the present day. The historical foundation of aviation is used to develop an understanding of the economic, social, and political impact of aviation on society.

**AVS\*H130 Air Transportation System 3 credits**

This course provides a historical background and an overview of the major segments of the air transportation industry. Current state and federal agencies and the regulations influencing air transportation, as well as the basis for their establishment, are also discussed. Requirements of the past, present and future with respect to aircraft and engine design, airports and supporting facilities are reviewed and evaluated. Students are introduced to the economics of airline operations and maintenance, and the general factors that influence an airline’s survival and profitability.

**AVS\*H140 Aerospace Safety 3 credits**

This course is designed to provide the student with an understanding of the role of government agencies in ensuring aerospace safety. The ways in which airlines and airports ensure public safety and security will also be discussed. Emphasis will be on critical analysis of case studies involving investigations and prevention of aircraft accidents.

**AVS\*H150 Airport Management I 3 credits**

This course provides an overview of the operational requirements needed for airports and airport terminals with an emphasis on the facilities that comprise an airport system, including airspace, airfield, terminal, and ground access operations. The financial aspects of airport planning as well as airport capacity considerations are also discussed.

**AVS\*H151 Airport Management II 3 credits**

*Prerequisite: AVS\*H150.* This course is a continuation of AVS\*H150. Emphasis is on managing daily airport operations, airport organization and administration, and financial management of the airport facility. Airport improvements and the relationship of airports with tenants and the general public are also discussed.

**AVS\*H201 Private Pilot Flight Training Lab 3 credits**

***Corequisite: AVS\*H101. ALL FLIGHT TRAINING COSTS ARE THE RESPONSIBILITY OF THE STUDENT.*** Students will receive approximately 50 hours of flight instruction covering topics that include pre-flight operations, aircraft systems, ground operations, basic flight maneuvers, ground reference maneuvers, normal and emergency procedures, cross-country operations, and flight by reference to instruments. Co-op instruction is designed to augment students’ flight training and includes the use of a flight simulator as well as classroom discussion of selected topics. This course prepares students for the FAA Private Pilot Practical Test (ASEL).

**AVS\*H203 Instrument Flight Training Lab 3 credits**

***Corequisite : AVS\*H103. ALL FLIGHT TRAINING COSTS ARE THE RESPONSIBILITY OF THE STUDENT.*** Students will receive approximately 50 hours of flight instruction covering topics that include pre-flight operations, full and partial panel procedures, systems and equipment malfunction, instrument navigation techniques, holding and approach procedures, and emergency procedures for instrument flight. Co-op instruction is designed to augment students’ flight training and includes the use of a flight simulator as well as classroom discussion of selected topics. This course prepares students for the FAA Instrument Rating Practical Test (ASEL).

**AVS\*H204 Commercial Flight Training Lab 3 credits**

***Corequisite : AVS\*H104. ALL FLIGHT TRAINING COSTS ARE THE RESPONSIBILITY OF THE STUDENT.*** Students will receive approximately 120 hours of flight instruction covering topics that include pre-flight operations, aircraft systems, advanced ground operations, advanced flight maneuvers, normal and emergency procedures, commercial cross-country operations, and complex aircraft operations. Co-op instruction is designed to augment students’ flight training and includes the use of a flight simulator as well as classroom discussion of selected topics. This course prepares students for the FAA Commercial Pilot Practical Test (ASEL).

**AVS\*H255 Human Factors in Aviation 3 credits**

This course explores physiological and cognitive factors such as hypoxia, disorientation, stress, fatigue, anxiety and the effects of alcohol and other drugs on critical judgment and decision making processes of operational personnel in aviation. Investigation of our unique human capabilities and limitations is used to develop strategies to improve the performance of flight crews, air traffic controllers, flight management and other operational personnel as they identify and respond to critical, time-sensitive situations in aviation operations.

# BIOLOGICAL SCIENCES

## Science, Technology, Engineering & Mathematics Division

**BIO\*H105 Introduction to Biology 4 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101.* The general principles of biology are taught using a combination of multimedia lectures, discussion groups, and a laboratory component. Topics covered include cell biology, diversity, biotechnology, basic chemistry, cellular respiration and photosynthesis, ecology, genetics, behavior, and evolution. Laboratory includes an animal dissection. Three hours of lecture and three hours of laboratory weekly. (fall/spring/summer)

 **BIO\*H110 Principles of the Human Body 3 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101. Open to students needing a three-credit science course in their program of study including Liberal Arts and Sciences and General Studies. Students may not receive credit for both BIO\*H110 and BIO\*H115.* This course is an introduction and survey of human anatomy and function including the digestive, circulatory, respiratory, immunological, urinary, nervous, sensory, muscular, skeletal, endocrine, and reproductive systems of the body. The course will include discussions of the evolution of the human body and its dynamic interaction with the environment. Not open for credit to students who have passed any higher-numbered human biology or anatomy and physiology course. (fall/winter/spring/ summer)

**BIO\*H111 Introduction to Nutrition 3 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101.* A basic introduction to the science of nutrition with an emphasis on making healthy food and lifestyle choices. Health and disease, metabolism, cultural diversity and food processing are studied in relationship to individual nutrients as well as to total dietary patterns. Information presented enables analysis and modification of diets to promote health, reduce the risk of deficiencies and chronic diseases related to nutrition and evaluate dietary advertising, controversies and nutritional policies. (fall/spring/summer/winter)

**BIO\*H115 Human Biology & Lab 4 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101. Students may not receive credit for both BIO\*H110 and BIO\*H115.* This introductory course will focus on the overarching themes of health, homeostasis, evolution and the environment as they relate to human body systems. Laboratory experiments include microscopic examination of cells and tissues, anatomy, physiology of nerves and muscles, blood typing, and principles of inheritance.

***Course***

***Descriptions***

Three hours of lecture and three hours of laboratory weekly. (fall/spring/summer)

**BIO\*H121 General Biology I - Cellular Biology 4 credits** *Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101.* The general principles of biology are taught integrating lectures, laboratory experiments, computer simulations, discussions, and other activities to help students gain an understanding of the essential biological concepts. The foci of this course are scientific method, cell biology, viruses, prokaryotic organisms, protists, basic cell chemistry, photosynthesis, cellular respiration, mitosis & meiosis, genetics, and biotechnology (plant tissue culture, genetic transformation). Cooperative learning, critical thinking, library research, as well as presentation skills are utilized culminating in a team project that includes a written paper and a short presentation. This course is one part of a two semester sequence in general biology primarily for students seeking transfer into a four-year degree program. BIO\*H121 (Cellular Biology) and H122 (Organismal Biology) can be taken in any order and are transferable. This course satisfies the general education core science requirement. Integrated 3 hours lecture & 3 hours lab. (fall/spring/summer)

**BIO\*H122 General Biology II -**

 **Organismal Biology 4 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101.* Utilizing the same integrative approach as BIO\*H121, students will investigate biotechnology (gel electrophoresis for DNA and protein analysis), systematics, biological statistics, population genetics, evolution, plant biology (life-cycles and growth of fungi, non-vascular, and vascular plants), animal biology (early development and histology, comparison of invertebrate and vertebrate life cycles and physiological systems), and ecology. Science process skills are emphasized. Collaboratively, students will investigate a scientific research topic culminating in a written report and oral presentation to their peers. This course is one part of a two semester sequence in general biology primarily for students seeking transfer into a four-year degree program. This is the second semester of general biology; however, BIO\*H121 (Cellular Biology) and H122 (Organismal Biology) can be taken in any order. This course satisfies the general education core science requirement for both non-majors & majors. Integrated 3 hours lecture & 3 hours lab. (spring)

**BIO\*H145 General Zoology 4 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101.* This lecture-laboratory is a survey of the animal kingdom. Topics discussed include morphology, anatomy and physiology, life cycles, reproduction, evolution, and ecological relationships of various animal forms. Three hours of lecture and three hours of laboratory weekly. (spring)

**BIO\*H155 General Botany 4 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101.* The focus of this course is how plants function. It is an introduction to plant physiology and development, explaining growth processes, metabolism and hormonal responses. Additional topics, such as soils, plant breeding, and propagation will be addressed. The laboratory component is designed to involve students with important concepts discussed in lecture. Integrated 3 hours lecture & 3 hours lab. (fall/spring)

**BIO\*H171 Field Biology 4 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101.* Lecture-laboratory. This is an introduction to ecology with special emphasis on identification of Connecticut plants and animals in the outdoors. A wide range of topics will be presented including map reading, edible wild foods, and collecting. Three hours of lecture and three hours of laboratory weekly. (spring)

**BIO\*H180 Principles of Environmental Science 3 credits** *Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101. Note: Students may not receive credit for both BIO\*H180 and BIO\*H181.* This is a survey course of environmental studies. Topics discussed include basic ecology; human populations; water, soil, forests and pollution; renewable and non-renewable energy; legislation; citizens action. Dynamic Environmental systems are explored via computer simulations. (fall/spring)

**BIO\*H181 Environmental Science & Lab 4 credits**

*Prerequisites: Completion of MAT\*H094/095 with a "C" or better or an appropriate score on a college placement exam, and eligibility for ENG\*H101. Note: Students may not receive credit for both BIO\*H180 and BIO\*H181.* This course has the same lecture as BIO\*H180; however, there is an additional laboratory component. Laboratory experiences include water and soil analyses, pond and river studies, computer simulations, field trips to environmental quality facilities and laboratories. Three hours of lecture and three hours of laboratory weekly. (fall/spring)

**BIO\*H211 Anatomy and Physiology I 4 credits**

*Prerequisites: Completion of BIO\*H105, BIO\*H115 or BIO\*H121 with a grade of “C” or better or by permission of the Division Leader.* Lecture-laboratory. This is the first semester of a two semester comprehensive course designed for those students who plan to continue in the science field or science-related areas. Major topic areas include molecular biology, cells, tissues and the integumentary, skeletal, muscular and nervous systems of the human body. Laboratory includes an animal dissection. Three hours of lecture and three hours of laboratory weekly. (fall/spring/summer)

**BIO\*H212 Anatomy and Physiology II 4 credits**

*Prerequisite: Completion of BIO\*H211 with a grade of “C” or better or permission of the Division Leader.* Lecture-laboratory. Major topic areas include the cardiovascular, lymphatic/immune, respiratory, digestive, endocrine, urinary and reproductive systems of the human body. Laboratory includes an animal dissection. Three hours of lecture and three hours of laboratory weekly. (fall/spring/ summer)

**BIO\*H235 Microbiology 4 credits**

*Prerequisite: BIO\*H105, or H115 or H155 or H121, or H225, or permission of the Division Leader.* This course introduces the student to bacteria and other microorganisms. Particular emphasis is placed on the biology of bacteria and bacterial diseases. Fungi, viruses, protozoans are also studied. Immunology, microbial genetics and biotechnology are discussed. The emphasis in the laboratory is on the identification, safe handling and cultivation of microbes. Activities include staining techniques, identification of unknowns, electrophoresis, computer simulations and growth experiments with comparative analysis of results. Three hours of lecture and three hours of laboratory weekly. (fall/spring/summer)

**BIO\*H260 Principles of Genetics 3 credits**

*Prerequisite: BIO\*H105 or equivalent.* This is an introduction to the principles of genetics. It covers Mendelian analysis, chromosome theory, extensions of Mendelian analysis, molecular genetics, as well as quantitative and population genetics. (Offered periodically)

### BIO\*H262 Genetics & Lab 4 credits

*Prerequisite: BIO\*H105 or H115 or H155 or H121 or H225 or permission of Division Director.* This course is designed to cover the basic concepts of genetics including the theory of chromosomal inheritance, classical Mendelian inheritance, principles of human genetics, the genetic code, the role of nucleic acids in gene expression, genetic mutations, population genetics and topics in modern genetics in areas such as epigenetics, recombinant DNA, biotechnology, gene mapping and diagnosis of human genetic diseases. Students will develop and master good laboratory practices and safe handling skills while completing laboratory investigations including genetic crosses, molecular diagnostic techniques, and calculating genetic variation in populations. Three hours of lecture and three hours of laboratory weekly.

# BUSINESS

## Business Division

**BBG\*H101 Introduction to Business 3 credits**

A survey of the fundamental principles of business will be discussed including marketing, management, finance, accounting, and human resource development. This course is required for most students majoring in business.

**BBG\*H210 Business Communication 3 credits**

*Prerequisite: ENG\*H101.* This course is an analytical approach to the development of content in business writing with emphasis on the relationship of creative and logical thinking to the solution of business problems through concise, coherent written and oral communications.

**BBG\*H215 Global Business 3 credits.**

This course provides an introduction to the nature and Environment of international business. Topics will include the nature of international business, international organizations and monetary systems, foreign Environments and management tools necessary for international business opportunities and operations. Social, political and economic factors which impact on international business interactions are also studied.

**BBG\*H231 Business Law I 3 credits**

The legal rights, duties, and responsibilities of the business person are examined. Topics include a general introduction to the meaning and nature of the law, and the structure of the American legal system. Emphasis is placed upon the basic principles of the law of contracts, torts, criminal law and procedure, agency, real property, wills, and decedent’s estates.

**BBG\*H232 Business Law II 3 credits**

This course further develops and examines the American legal system, as well as the international legal system. Topic include the uniform Commercial Code, ethics, consumer protection laws, secured transactions, intellectual property law, corporate law, partnership law, limited liability companies and numerous aspects of international law. It is recommended that Business Law I be taken before Business Law II.

**BES\*H118 Small Business Management 3 credits**

This course is designed to assist students with the knowledge and skills needed to operate and/or develop a small business. Emphasis will be placed on the entrepreneurial aspects of creating, managing, and gaining profit from a small business.

### BMK\*H220 Sales 3 credits

Basic principles underlying the sales process and their practical application to sales situations are studied. Economics and psychological and sociological relationships in the marketplace, as they apply to sales of industrial and consumer goods and intangibles, are examined.

**BMG\*H105 Supervision and Organizational Behavior 3 credits**

Prerequisite: BMG\*H202. Emphasis on the latest developments in the fields of management. Group discussions of case studies and problem are included. Also, emphasis on group work and the use of the computer as an aid in the decision-making process in a micro-organizational settings is included. Additional software may be required.

**BMG\*H202 Principles of Management 3 credits**

This course deals with management theory, science, and practice. Consideration is given to management thought and analysis. The external Environment, both domestic and international, is reviewed as well as the major functions of planning, organizing, directing, and controlling business. The coordinating function of the business manager is considered. Decision-making processes and techniques are also stressed.

**BMG\*H220 Human Resources Management 3 credits**

*Prerequisite: BBG\*H101.* This course deals with personnel management in the process of manpower administration in the business organization. Treatment is given to procurement and human resource utilization and the role of labor unions in the industrial organization. The development of the role of the person and personality amidst the various social sciences and organization structures required to achieve an organization’s goals are studied – as in motivation.

**BMK\*H201 Principles of Marketing 3 credits**

This course deals with the marketing function of the firm primarily from the management standpoint. Topics include marketing strategy, new products, channels of distribution, pricing, and promotion. The function of the marketing institution in economic and social context is considered.

**BMK\*H216 Internet Marketing 3 credits**

Develop a working knowledge of the World Wide Web as a marketing vehicle providing fast/efficient electronic commerce and the ability to manage the Internet marketing process for a small to medium-sized business enterprise. Internet is fast becoming the ultimate distribution system to disseminate marketing data, identify/segment customers to provide sales force attention, customer service activity, and ordering. Electronic Commerce Marketing Principles will prepare a student to intelligently apply the Marketing Mix disciplines and concepts to a company’s products/services in order to effectively prepare and execute “Marketing Plans” participating in the growing “electronic commerce” segment of business.

# BUSINESS FINANCE

## Business Division

**BFN\*H201 Principles of Finance 3 credits**

This introductory course will provide an understanding of the role of finance in the economy, business management, government and consumer financing. Included are the fiscal, monetary and debt management policies of government.

**BFN\*H203 Investment Principles 3 credits**

This course gives a broad perspective on investment objectives and values, as well as a study of securities, market and values. A study of securities, market procedures, analytical techniques, speculative and institutional markets is also included.

**BFN\*H220 Financial Management 3 credits**

*Prerequisite: BFN\*H201 or permission of Division Leader.* This course is an in-depth study of finance including the mathematics of finance, corporate securities; also included are short, intermediate and long term sources of funds; and liabilities, income administration, mergers and acquisitions, and working capital.

**BRE\*H201 Real Estate Principles 3 credits**

*Prerequisite: BFN\*H201, Real Estate License or permission of Division Leader.* The topics studied in this course include fundamentals of mortgage, deeds, loan applications, real estate credit, mortgage markets, and current legislation affecting real estate finance.

***Course***

***Descriptions***

**BRE\*H205 Real Estate Law 3 credits**

This course examines the legal Environment of real estate including contracts, deeds, instruments, easements, estates in land, zoning, tenants, liens, foreclosure, transfers of titles, leases, and relevant court rulings. (LGL\*H104 is a substitution for this course.)

# CHEMISTRY

## Science, Technology, Engineering & Mathematics Division

**CHE\*H111 Concepts of Chemistry 4 credits**

*Prerequisite: MAT\*H137. Lecture-laboratory.* This is a foundation course designed to present chemical concepts including the metric system, scientific measurements, atomic theory, chemical bonding, periodic variation of the elements, nomenclature, equations, gas laws, stoichiometry, basic types of chemical reactions, and a brief survey of organic chemistry. This course is open to students with little or no background in chemistry. Three lecture hours and three laboratory hours weekly. (fall/spring/summer)

**CHE\*H121 General Chemistry I 4 credits**

*Corequisite: MAT\*H172, its equivalent or permission of instructor.* Lecture-laboratory. The fundamental concepts and laws of chemistry are examined. Topics covered include atomic theory, chemical bonding, periodic table and periodic law, nomenclature, states of matter, solutions, stoichiometry, acid-base theory, oxidation, reduction, and coordination chemistry. Three lecture hours and three laboratory hours weekly. (fall/spring/summer)

**CHE\*H122 General Chemistry II 4 credits**

*Prerequisite: completion of CHE\*H121 with a grade of “C” or better.* Lecture-laboratory. This course provides a more specific discussion of major topics within the four major divisions of chemistry. Topics covered include colloids, kinetics, equilibrium, thermodynamics, nuclear chemistry, electro-chemistry, discussion of physical and chemical properties of selected groups on the periodic table, ionic equilibria of weak electrolytes, buffer solutions and titration curves, solubility product, qualitative analysis, and a brief introduction to organic chemistry. Three lecture hours and three laboratory hours weekly. (fall/spring/summer)

**CHE\*H211 Organic Chemistry I 4 credits**

*Prerequisite: CHE\*H121-122 or acceptable one-year college chemistry course at another institution.* Lecture-laboratory. This is a fundamental course involving systematic study of the reactions of organic compounds, the relationships between molecular structure and reactivity, and an introduction into spectroscopic analysis. The laboratory has been revised to include the ultra modern microscale technique. This approach includes some of the following advantages: elimination of fire or explosion danger, elimination of chemical waste disposal problems, expansion in variety and sophistication of experiments, and creation of a much healthier laboratory environment. Three lecture hours and three laboratory hours weekly. (Offered periodically)

**CHE\*H212 Organic Chemistry II 4 credits**

*Prerequisite: CHE\*H211*. Lecture-laboratory. This course is a continuation of CHE\*H211, dealing with more complex classes of carbon compounds including sugars, amino acids and proteins, heterocyclics, and polymers. The laboratory has been revised to include the ultra modern microscale technique. This approach includes some of the following advantages: elimination of fire or explosion danger, elimination of chemical waste disposal problems, expansion in variety and sophistication of experiments, and creation of a much healthier laboratory environment. Three lecture hours and three laboratory hours weekly. (Offered periodically)

# COMMUNICATIONS

## Liberal Arts and Behavioral/Social Sciences Division

**COM\*H100 Introduction to Communication 3 credits** *Prerequisite: Placement into ENG\*H101.* An introduction to the field of communication and to the strands of communication study: intrapersonal, interpersonal, small group, and public communication. Students will develop communication skills as they relate to the self and to interaction in small and large groups in everyday interpersonal situations.

**COM\*H101 Introduction to Mass**

 **Communications 3 credits.**

This course acquaints students with the complex nature of the media through which they communicate. The course will introduce the various forms of communication media; the role of media as it informs, entertains and persuades; and the effects of media on individuals and society.

**COM\*H154 Film Study and Appreciation 3 credits**

*Prerequisite: Placement in or eligible for ENG\*H101*. This course is an introduction to the art, history, and influence of film. Students will trace the history of cinema through both technical advancements and aesthetic developments enabling them to understand the aesthetics of films as well as the cultural and historical context in which the films were made.

**COM\*H157 American Film 3 credits**

Students survey American film from its beginnings to the present. The course will include the silent era, birth of sound, and typical genres.

**COM\*H158 International Cinema 3 credits**

This course is an introduction to the history of international cinema. Students will develop their sense of visual aesthetics, awareness of important cinematic movements and styles, and knowledge of the history and cultures, and the historical contexts within which the films were produced.

**COM\*H172 Interpersonal Communication 3 credits**

This course examines the role of interpersonal communication in human relationships. The focus of this course is on improving interpersonal skills and helping students increase their communication competence in everyday social exchanges.

**COM\*H173 Public Speaking 3 credits**

This course provides students with an understanding, appreciation, and capacity for public speaking. Excellence in public speaking requires mastery of informative and persuasive techniques of language, organization, citation of evidence, and use of rhetorical patterns of introduction and conclusion. Exposure to theoretical elements and their application in public speaking will be explored in this class.

**COM\*H178 Small Group Communication 3 credits**

The purposes of this course are (a) to provide an overview of theory and research in key areas of study in small group communication, (b) to teach skills in group decision making, and (c) to give students the opportunity to apply theory, research, and decision making skills by interacting in a group environment.

**COM\*H202 Intercultural Communication 3 credits.**

*Prerequisites: COM\*H101 or H172.* This course will be an introduction to the major principles and theories of intercultural communication. It will emphasize the application of skills and concepts for increasing cultural awareness and communication competency in a variety of cultural contexts. Exposure to communication systems and formations from different cultures will be used as a means to provide various ways of thinking about cultures.

**COM\*H226 Journalism I 3 credits**

*Prerequisite: ENG\*H101.* Students explore methods and techniques of news gathering, news writing, and news analysis. By covering campus and community events, they make practical application of theory.

# COMPUTER-AIDED DRAFTING/DESIGN TECHNOLOGY

## Science, Technology, Engineering & Mathematics Division

*Note: All software used in these courses are subject to change.*

**CAD\*H110 Introduction to CAD 3 credits**

An introduction to the techniques of generating graphic images with computers, using AutoCAD. Topics include: overview of CAD technology, computer technology, hardware descriptions and requirements, file manipulation and management, two-dimensional geometric construction, symbol library creation, dimensioning, scaling, sectioning, plotting, detail and assembly drawing including tolerance studies. *Part of the Advanced Manufacturing Technology Cohort Program.*

**CAD\*H150 CAD 2D (AutoCAD) 3 credits**

Introduction to two-dimensional computer-aided drafting using Autocad. Included are drawing and editing of elementary geometric entities, dimensioning and plotting. Also, mechanical drafting problems and examples will be studied. One class hour and four laboratory hours weekly. (fall/spring)

**CAD\*H200 3D CAD Modeling 4 credits**

*Prerequisite: CAD\*H150.* The primary focus of this course is to review and continue to develop a working knowledge of Engineering Graphics and develop Three-Dimensional Geometric Computer Modeling. This course will also include an introduction to additive manufacturing techniques. Students will further develop the basic 2D engineering drawings such as: Isometric Drawings, Orthographic Projections, Sectional Views and Auxiliary Views. The modeling will consist of, but will not be limited to, an introduction to the parametric process using SolidWorks to develop computer generated 3D models. Students will also receive an introduction to Additive Manufacturing using state-of-the-art 3D printers. Two class hours and four laboratory hours weekly. (fall/spring)

**CAD\*H220 Parametric Design 3 credits**

*Prerequisites: CAD\*H150 and CAD\*H200.* The primary focus of this course is to study and develop advanced aspects of designing with Solid Modeling and Parametric Modeling. The course proceeds in a pedagogical fashion to guide the student from constructing basic solid models to building intelligent mechanical designs, creating multi-view drawings, Surface Models and Assembly Models. One class hour and four lab hours weekly. (fall/spring)

**CAD\*H275 CAD Animation (3D Studio Max) 4 credits**

*Prerequisite: CAD\*H200 or experience in 3D computer modeling.* This course will guide the student through the world of three-dimensional presentation. The student will create photo realistic still images, animated assemblies, camera fly-bys, robotic motion, and dynamic life-like animated presentations The concepts covered in this course can be applied to a variety of engineering disciplines. 6 contact hours (2 lecture and 4 laboratory) *(Offered periodically.)*

**CAD\*H285 Computer Integrated Manufacturing**

 **(CIM) I 3 credits**

*Prerequisites: CAD\*H200, MAT\*H172*. This course is an introduction to the mechanical design process used to develop intelligent product models that can be used in Computer Integrated Manufacturing (CIM). The students will gain an understanding of the basic principals of 3D solid modeling, parametric relationships, and controlling design intent and object dependencies. Students will develop complete product designs, outputting 3D solid and sheet metal parts, tolerance analysis, family tables and assembly models, related detail and assembly drawings, and prototypes. 4 contact hours (2 lecture and 2 laboratory) *(Offered periodically.)*

**CAD\*H286 Advanced Modeling Techniques 3 credits**

*Prerequisite: CAD\*H285*. This course builds on the concepts developed in CAD\*H285, Introduction to Advanced Modeling. It develops advanced modeling concepts, techniques and methods used in modern product modelers- topics such as user interface customization, user defined features, writing programs within the CAD system, sweeps, advanced rounds, and basic stress analysis.

Students will work on their own and in groups to develop complete product designs, outputting 3D solid parts. 4 contact hours (2 lecture and 2 laboratory) *(Offered periodically.)*

**CAD \*H294 Senior Project 4 credits**

*Prerequisite: CAD\*H220, Corequisites: CAD\*H275, or approval of the department chair.* The course offers students a CAD engineering design activity utilizing an assigned, or approved, design project. The project will incorporate a wide range of learning activities including, but not limited to, library research, written status reports, discussions, oral presentations, time management and project planning, team work, the application of the design process, and the utilization of a variety of CAD applications. This class meets for 6 contact hours per week, 2 lecture and 4 lab. *(Offered periodically.)*

# COMPUTER INFORMATION SYSTEMS

## Business Division

**CSC\*H101 Introduction to Computers 3 credits**

This is an introductory course in information technology concepts and software productivity tools intended for Computer Information Systems majors and other students interested in computers and Information Technology. Areas of instruction include computer concepts, current topics and trends in information technology, the role of computer systems in business problem solving, an introduction to the major career areas of Information Technology and Microsoft Office skills that are important to all college students.

**CSC\*H113 Programming I 3 credits**

Fundamentals of programming and program development techniques. This is a first step programming course which emphasizes problem solving and sound programming practices. No previous programming experience is necessary. Topics include data types, functions, storage class, selection, repetition, pointers, arrays, and file processing. Programming laboratory projects in a laboratory environment are supervised by the instructor.

**CSC\*H183 Information Systems in Organizations 3 credits**

The focus of this course is on how organizations use information systems for decision making. In particular, the course stresses the role of managers in the analysis, design, development, implementation, maintenance and control of information systems as corporate resources. Course includes a hands-on approach to communications using workgroup software.

**CSC\*H205 Visual Basic I 3 credits**

This course uses Visual Basic .NET, an object-oriented/event-driven language, to teach programming concepts. Through “hands-on” application of the concepts presented in the lectures and tutorials, the student will learn the Visual Basic .NET tools used to create applications that correspond to Windows standards. By the end of the course, the student will be able to design and code simple business applications and will be prepared for more advanced courses in programming using VB, C++, etc.

**CSC\*H206 VISUAL BASIC II 3 credits**

*Prerequisite: CSC\*H205.* The course covers a wide range of advanced programming topics using Visual Basic.NET an object oriented, event driven programming language. The goal of the course is to develop computer programming skills beyond the basics covered in the introductory course. This includes arrays and collections, object variables, database programming, web programming, web services, and extensive use of the .NET classes.

**CSC\*H211 VB & ASP .NET Web Programming 3 credits**

*Prerequisite: CSC\*H205.* This course covers a wide range of topics in the area of web application development using Microsoft ASP .NET. and the Visual Basic programming language. After an introduction to basic web design techniques, students will progress to more advanced e-commerce applications. Topics include working with server controls, validation techniques, managing state, authenticating users, and the use of themes. Relational databases are a big part of e-commerce applications and are also an important topic area in this course.

**CSC\*H213 Object-Oriented Programming**

***Course***

***Descriptions***

 **Using C++ 3 credits**

*Prerequisites: CSC\*H205, CSC\*H113, or any programming language equivalent.* This course is designed for a more advanced programming student who wish to learn C++ with object-oriented techniques. The course will contain the basic concepts of an object-oriented programming language. Topics will include classes, constructor and destructor functions, function overloading, operator overloading, class inheritance, polymorphism, stream input/output, manipulator functions, templates and exception handling.

**CSC\*H214 Advanced C++ Programming 3 credits**

*Prerequisite: CSC\*H213.* Topics include methods and techniques used in software development cycles. You will learn to move beyond a simple mastery of syntax. You will learn to increase productivity by combining tools, idioms, syntax, and libraries. Numerous hands-on exercises provide real-world experience in developing high quality C++. Throughout the course, you gain extensive hands-on experience with advanced C++ programming techniques. You will be required to develop complete programs from architectural design through to refining the implementation via a series of exercises.

**CSC\*H217 Object-Oriented Programming**

 **Using C++ 3 credits**

*Prerequisite: CSC\*H205 or CSC\*H113 or any programming languages equivalent.* This course offers students the opportunity to extend their experience and programming skills in the area of .NET development. C# (pronounced C Sharp) is an object-oriented programming language with syntax similar to JAVA, C# is becoming increasingly popular with developers in the areas of Windows applications and web sites using relational databases. Using the Visual Studio Integrated Development Environment (IDE) the course will cover topics including arrays, methods, classes, objects, inheritance, and exception handling, File Streams and database applications will also be an important part of the course..

**CSC\*H220 Object-Oriented Programming**

 **Using Java 3 credits**

*Prerequisite: CSC\*H205, CSC\*H113 or any programming language equivalent.* This course will be an introduction to the Java programming language. We will develop Java applications as well as introduce World Wide Web browser Java applets. We will cover basic control structures and introduce the Object- Oriented (OO) paradigm utilizing classes and objects. We will introduce and develop programs which are event driven. There will be a wide use of the Java Abstract Window Toolkit. The OO model will be used in developing object-based and object-oriented programs. Finally, we will explore the toolkit to develop GUI-based, event-driven programs. There will be several programming assignments. Two tests will be given during the semester in addition to a final exam.

**CSC\*H227 Web Programming with Java 3 credits**

*Prerequisite: CSC\*H220, CSC\*H113.* This course picks up where the first Java Programming course left off, introducing the topics of threading and I/O. The remainder of the course serves to extend the student's knowledge of using Java to build enterprise-strength applications, with exposure to both "fat" and "thin" client structures. The course will cover currently used structures of JBDC connectivity, JavaBeans, servlets, JSP and XML and XHTML.

**CSC\*H228 Mobile Device Programming 3 credits**

*Prerequisite: CSC\*H205, CSC\*H113 or any programming language equivalent.* This course is designed as an introduction to mobile device programming. It is intended for students with an interest in learning to develop applications which will run on Android based smart phones. Prior programming experience using Visual Basic, Java or C++ is expected.

**CSC\*H231 Database Design I 3 credits**

An introduction to relational database design. Included will be topics on the evolution of database design, data structures, designing a database, normalizing a database design and implementation of databases utilizing one or more of the popular PC database packages available such as Microsoft SQL Server.

**CSC\*H237 Database Programming with VB.NET 3 credits**

*Prerequisite: CSC\*H205.* This course covers a wide range of relational database programming topics using Visual Basic .NET and ADO .NET objects. Students will learn programming techniques using the Microsoft SQL Server relational database, the .NET System. Data namespace and classes, and disconnected architecture. Topics include SQL queries to create typed and untyped datasets, table relationships, parameterized queries, bound and unbound controls, and data views. Crystal Reports, XML Schema Designer, and Server Explorer tools are used in a hands-on class/lab environment.

**CSC\*H250 Systems Analysis and Design 3 credits**

*Prerequisite: Any programming language equivalent.* This course is an introduction to systems analysis and design concepts and techniques. Using a case study method, students will conduct system surveys, create feasibility studies, and design typical computer systems used in business and industry.

**CSC\*H252 Information Systems**

 **Project Management 3 credits**

*Prerequisite: CSC H101 or any programming language equivalent.* This course introduces students to the theory and practice of managing Information Systems and Business projects. Students will learn how to initiate, plan, execute, control, and complete projects in order to meet organizational goals. In addition to traditional project management tools like PERT and GANTT charts, students will learn to use a project management software simulation tool to assist them in managing classroom projects. A comprehensive final project will be assigned and completed either individually or in collaboration with a student project team.

**CST\*H120 Introduction to Operating Systems 3 credits**

An introduction to the personal computer, hardware, and Operating Systems software. The most popular microcomputer operating systems and graphical interfaces will be discussed in detail. After satisfactorily completing this course, the student will have a thorough understanding of the command structures of the operating systems. Students will receive a brief introduction to local area networks from a user perspective. Laboratory projects will be assigned throughout the course to reinforce course material.

**CST\*H130 Networking Essentials I 3 credits**

An in-depth study of communications in a networking Environment. Included is the history of networking, OSI model, data types, signaling, multiplexing, signal conversion, data transmission, topologies, channel access method, switching techniques, SDLC, HDLC, IEEE standards, Arcnet, Ethernet, Token Ring, TCP/IP IP, SNA, and the future of networking.

**CST\*H235 Network Systems 3 credits**

*Prerequisite: CST\*H130, or a basic understanding of computer networks.* This course teaches the student, through lectures, demonstrations, and classroom labs, the skills and knowledge necessary to configure, manage, and troubleshoot a Windows Server network infrastructure. The focus of this course will be the installation, configuration, management and support of Active Directory, IP, DHCP and DNS. The course will also address security, the management and installation of services updates, and routing and remote access. Through the use of lab assignments, there is a heavy emphasis on the “hands-on” application of the concepts presented in the lectures and assigned readings.

**CST\*H236 Advanced Network Systems 3 credits**

*Prerequisite: CST\*H235*. This advanced course will cover higher level system management features of the Window Server Operating System. The focus will be planning, implementing and maintaining an Active Directory infrastructure. Through lectures and lab assignments, the student will learn about integration of Active Directory with DNS, administration of user accounts and groups, group policies, security, remote access, and performance monitoring.

**CST\*H239 Servicing & Support of
Local Area Networks 3 credits**

*Prerequisite: CST\*H130*. A hands-on course allowing students to install, upgrade, maintain and troubleshoot on Microsoft server operating systems. Class discussion and laboratory exercises include Network Interface Cards (NlC’s), networking cabling, disk expansions, installations, upgrades, troubleshooting techniques, and common network problems.

**CST\*H248 Practices in Security Management 3 credits**

*Prerequisite: CSC\*H101.* Security Management entails the identification of an organization's information assets and the development, documentation, and implementation of policies, standards, procedures, and guidelines that ensure confidentiality, integrity, and availability. This course will prepare the student to understand the planning, organization, and roles and individuals involved in security, develop security policies, and utilize management tools used to identify threats, classify assets, and rate vulnerabilities.

**CST\*H274 Network Security Technology 3 credits**

*Prerequisite: CST\*H130.* This course takes an in-depth look at network security concepts and techniques. Students will examine theoretical concepts that make the world of security unique. Also, this course will adopt a practical, hands-on approach when examining networking security techniques. Along with examining different network strategies, this course will explore the advancement of network implementation as well as timeless problem solving strategies.

# COMPUTER SCIENCE

## Business Division

**CSA\*H105 Introduction to Software Applications 3 credits**

*Prerequisites: Successful completion of ASD-H97, ENG\*H063, and MAT\*H095; successful completion of placement tests.* The computer plays a significant role as a productivity tool in many fields of study and in business. This course introduces the student to the basics of how to use computers as a tool rather than how computers work. It offers instruction and practice on the use of personal computers and a variety of application software. Included is work on word processing, spreadsheets, the operating system, and internet browsing. Basic computer science topics are included to the extent that they support the applications approach. A significant amount of lab work outside

**CSA\*H135 Spreadsheet Applications 3 credits**

The course centers on the use of the current version of MS Excel at an advanced level. Other spreadsheets will be examined, (including online-based versions) as well as the exploration of online collaboration (in Wiki fashion). The instructional methodology will consist of exploring and applying advanced spreadsheet concepts to everyday situations and problems as presented in the textbook and as created by the instructor for the class. These are selected examples: Web query (getting data from a Web site directly into Excel), Goal seek, Excel database concepts, multilevel sorts, subtotals feature, Auto Filter, templates, converting table into a range, adding calculated fields to a table, drilling entries, 3-D references, linking workbooks, advanced functions..

**CSA\*H205 Advanced Applications 3 credits**

*Prerequisites: CSC\*H101 or CSA \*105 with a grade of “C” or better.* This is a hands-on course that focuses on the advanced use of commonly used Microsoft Office applications (Word, Excel, PowerPoint, Access, and the integration of these). The following are selected examples of skills and concepts learned in this class: **1) WORD**: inserting “quick parts,” advanced mail merges, adding editing comments, using the “Track Changes” feature, inserting bookmarks and hyperlinks, and creating equations; **2) EXCEL:** protecting worksheet in various ways, creating and modifying Excel tables, creating custom filters, and using advanced analysis tools, applying advanced functions; 3) **ACCESS:** creating tables using correct field types and properties, creating calculated fields, forms, reports, and sophisticated queries; **4) INTEGRATION:** combining data and graphs in various ways using paste options, importing files from external applications, and exporting files in various formats.

**CSA\*H207 Computer Applications in Management & Marketing 3 credits**

*Prerequisite: CSA\*H105 with a grade of “C” or better, BMK\*H201 or BMG\*H202.* Designed for the career track business student, this course will supply a strong background in the computer skills necessary and useful in business/management and marketing. Specific applications will be based on IBM compatible machines using the Windows Environment, and will include work on business presentations, preparation of brochures, project scheduling, workgroup computing, and business on the internet. Additional topics will be considered.

# COOPERATIVE EDUCATION

## Student Services Unit

**CWE H100 Portfolio Preparation 2 credits**

This course stresses analysis of prior learning and self-evaluation of this learning. Students will be expected to assess, organize, and communicate their learning experiences in portfolio form for review by a faculty panel of experts. Students must complete this course to be eligible for formal assessment. Credits do not apply toward a degree. Grade reflects success in coursework only; it does not guarantee or even suggest that portfolio credit will be granted or denied by the readers.

# CRIMINAL JUSTICE/PUBLIC SAFETY

## Liberal Arts and Behavioral/Social Sciences Division

**CJS\*H101 Introduction to Criminal Justice 3 credits** This course introduces students to the criminal justice system on the local, state, and federal levels. Students will be exposed to the structure, function, and modern challenges faced by law enforcement, courts, and correctional agencies. (fall/spring)

**CJS\*H102 Introduction to Corrections 3 credits**

An overview of the history and philosophy of the American correctional system, organization and operation of the components of the corrections systems, including correctional centers, prisons, probation, parole and community-based programs, correctional treatment programs ranging from pre-trial diversion to post incarceration procedures. Presentation and discussion of current issues and problems in corrections will be discussed.

**CJS\*H103 Introduction to Security 3 credits**

The historic, philosophical and legal basis of security, and the role of the security officer and his relationships with the public sector are studied. The functional operation of various specialized areas of security such as theft and risk control, security surveys and loss prevention, management in proprietary and government institutions, safety and fire protection and commercial and retail security is surveyed.

**CJS\*H105 Introduction to Law Enforcement 3 credits** An introduction course that covers the basics of law enforcement, evolution of the police function, the police in the criminal justice system, and the social and psychological stresses and their effects on police work, health, and the family. The course also includes the study and analysis of the problems of law enforcement as they relate to the community.

**CJS\*H210 Constitutional Law 3 credits**

*Prerequisite: CJS\*H101 with a grade of “C” or better.* This course traces the history and development of the U.S. Constitution. Topics will include the Commerce Clause, procedural due process, states’ rights and civil liberties, the concept of federal supremacy, and state constitutions.

**CJS\*H211 Criminal Law I 3 credits**

This course is an introduction to the history, theory, and practice of substantive criminal law. Major elements of statutory offenses are discussed. Reference to the Connecticut Penal Code is included.

**CJS\*H217 American Legal Systems 3 credits** This course studies the process through which justice is administered and the history of the American legal system. Also examined are the Constitution of the United States as it applies to police forces. Rules of evidence with attention given to judicial notice, presumptions, the nature of real and circumstantial evidence, burden of proof, documentary evidence, hearsay evidence, confessions and admissions will also be studied. Particular emphasis will be given to evidence, arrest procedures, as well as search and seizure.

***Course***

***Descriptions***

**CJS\*H218 Legal Aspects of Security Operations 3 credits** This course traces the development of the legal aspects of private security in the United States. Material includes the law as it relates to private security, search and seizure, civil and criminal liability, and evidence. Legal requirements such as licensing, training, and education are also examined.

**CJS\*H220 Criminal Investigation 3 credits**

This is an introduction to criminal investigation. Study includes the presentation of rules and procedures of preliminary investigation; art of interrogation and recording of statements and confessions; collection and preservation of physical evidence at the crime scene; methods used in scientific interpretation of evidence; and preparation of cases for trial.

**CJS\*H224 Computer Crimes 3 credits**

This course is designed to give the student an understanding of the various aspects of computer crimes, including hacking, computer break-ins, computer fraud, the introduction of viruses, worms, and trojan horses into computer systems, mail fraud, child pornography, pirated software, sabotage, and espionage. Study includes an overview of the various types of computer crimes likely to be encountered in today’s computer Environment, as well as the methods of preventing, investigating, and prosecuting those crimes.

**CJS\*H225 Forensic Science 3 credits**

The purpose of this course is to familiarize the student with the recognition, preservation, and collection of physical evidence at the crime scene as well as the testing and analysis of the evidence at the forensic laboratory. The student will learn through lectures, class participation and discussion, and laboratory experiments.

**CJS\*H229 Crime Scene Investigation 3 credits**

This is an orientation course that covers the basics of crime scene investigation, including the crime scene, identifying and collecting evidence, and the capabilities and procedures of the crime laboratory.

**CJS\*H230 Security Management 3 credits** *Prerequisite: CJS\*H101 with a grade of “C” or better.* This course examines the functions of an integrated security program from a management perspective. Topics to be discussed include how a security organization is managed, actual situations that may be encountered, the duties of the security director, effective management skills, and the day-to-day management of the security function.

**CJS\*H232 Industrial and Retail Security 3 credits**

*Prerequisite: CJS\*H101 with a grade of “C” or better.* This course examines the responsibilities of industrial security in preventing security related compromises against the company, individuals, and information. Thefts in companies and retail establishments will also be examined. Among other topics to be discussed are sabotage, espionage, physical security, theft prevention, internal control, and techniques of detection, apprehension and prevention.

**CJS\*H233 Institutional Security 3 credits**

*Prerequisite: CJS\*H101 with a grade of “C” or better.* This course is designed to give the student an understanding of the role of security as it applies to public and private institutions, such as hospitals, airports, and government agencies. The student will learn how an institution can be compromised by breaches of security. Topics to be discussed include physical security, internal control, processing clearances, safeguarding classified information, and visitor and area control.

**CJS\*H234 Computer Security and**

 **Data Protection 3 credits**

This course is designed to give the student a working knowledge of computer security and data protection. Topics that will be covered include types of attacks on computer systems, risk analysis, strategies to counter these attacks and risks, internet security, hacking, and other criminal activity.

**CJS\*H235 Information Warfare and Security 3 credits**This course traces the development of information warfare, terrorism, and espionage as they relate to the computer environment. Topics include the threats to military as well as commercial and economic security. The roles of individuals, corporations, and governments in dealing with information-related attacks will be examined. The problems and remedies associated with the topics will also be examined.

**CJS\*H241 Correctional Counseling I 3 credits**

*Prerequisite: CJS\*H101 with a grade of “C” or better.* This course is an introduction to various concepts, principles, and techniques of counseling as applied by trained professionals in the correctional setting. Group methods, evaluation, and therapeutic Environments will be examined as a means of promoting the understanding of the counseling process. Discussions will include the various counseling models and the history of counseling in correctional institutions and the community.

**CJS\*H244 Community Based Corrections 3 credits** *Prerequisite: CJS\*H101 with a grade of “C” or better.* This course will examine alternatives to incarceration as viable sentencing options. Topics will include: the development of community corrections, parole, diversion, halfway houses, community service, house arrest, and electronic monitoring. The role of the victim in the correctional process will also be discussed.

**CJS\*H246 Juvenile Corrections 3 credits**

*Prerequisite: CJS\*H101 with a grade of “C” or better.* This course presents the correctional aspects of the history, philosophy and development of the juvenile justice system. Topics to be discussed include the rights of juveniles, alternatives to incarceration, incarceration, treatment methods, and current and future trends.

**CJS\*H255 Ethical Issues In Criminal Justice 3 credits** This course is designed to give the student an understanding of the necessity for high standards of ethical and moral behavior on the part of the law enforcement officer. Material will include the consequences of unethical and immoral behavior on the part of the law enforcement officer. Topics include gratuities, favoritism, temptations, dishonesty, abuse and misuse of authority.

**CJS\*H261 Victim and Offender Mediation 3 credits** *Prerequisite: CJS\*H101 with a grade of “C” or better.* The process of victim and offender mediation and reconciliation is examined in this course. The effectiveness of the process in the offender rehabilitation will be discussed. Topics to be discussed include conflict resolution, bringing the victim and offender together, restitution of losses, reconciliation, mediation, and conflict management.

**CJS\*H280 Victimology 3 credits**

*Prerequisite: CJS\*H101 with a grade of “C” or better.* This course is a study of crime, its causes, and effects from the victim’s perspective. The course looks at victim precipitation, restitution, and the varied involvement in, and consequences of, crime on the victim. Major perspectives on victimization as well as patterns of victimization will be analyzed.

**CJS\*H293 Criminal Justice Cooperative**

**Work Experience 3 credits** *Prerequisite: 12 credits in CJS\*H courses, with grade of “C” or better.* Cooperative Work Experience in Criminal Justice is essentially cooperative training between the school and agency. This required course introduces the student to a specific field in the Criminal Justice system. The course consists of: 1. Minimum 120-hour (volunteer) Cooperative Work Experience 2. Weekly one-hour Co-op Seminar (fall/spring)

# DANCE

## Liberal Arts and Behavioral/Social Sciences Division

The Division of Liberal Arts and Behavioral/Social Sciences encourages students to register for dance courses in order to develop appreciation of, and skills in, the performance arts. Some of the courses are required in career programs; others are designed for students’ interests and personal development. Consultation with the dance advisor will help determine specific needs. Dance courses, except for Dan\*H101, are studio courses with a focus on movement. The history and theories of these dance genres are included experientially in class and through reading and writing assignments outside of class. For these studio courses, students must be physically able to perform the skills required in a dance class.

**DAN\*H101 History & Appreciation of**

 **World Dance 3 credits**

World Dance is designed to introduce students to dance in its creative, cultural and historical aspects. It will explore “a number of important ways in which dance functions in human societies—always keeping in mind that while dance is a universal human activity, it does not play the same role in every culture.” (Grauer) This course includes seminar, video-viewing, and movement activities.

**DAN\*H102 Ballet I: Renaissance to Romantic 3 credits**

Ballet from the Renaissance to the Romantic period provides students with a basic understanding of the fundamental principles of ballet technique, encourages students to achieve a level of self-discipline and physical control, and instills an appreciation of the historical contributions of ballet to the overall development of dance as an art form. Studio course.

**DAN\*H109 Ballroom I 1 credit**

This course is designed to introduce students to the history, evolution, music, steps, and various stylings of ballroom dancing. Three standard style dances, Tango or Swing, the Waltz, and the Foxtrot and three Latin style dances, the Rumba, the Salsa, and the Cha, Cha, Cha, will be explored. Studio course.

**DAN\*H110 Rhythm Tap 1 credit**

This course is designed to introduce students to the rhythm tap genre—a collage of sound produced by using taps and body as an instrument. The cultural and historical perspectives of rhythm tap will be discussed. Studio course.

**DAN\*H111 Jazz I: Afro-Caribbean/American 3 credits** Afro-Caribbean and American Vernacular Jazz Dance is designed to introduce students to the origins of jazz dance in America. Study emphasizes African and Caribbean, as well as “street” and “ballroom” influences. Basic skills of jazz movement, jazz music, and rhythmic awareness are included. Studio course.

**DAN\*H112 Jazz II: Broadway and Film 3 credits**

Musical Theater and Film Dance is designed to segue from American Vernacular Jazz Dance into concert jazz dance and Broadway dance. It continues with the historical (1930’s-2000’s) and cultural perspective particular to this American dance genre as well as its differentiating styles and techniques. Studio course.

**DAN\*H113 Modern I: Pioneers of America 3 credits**

Pioneers of American Modern Dance is designed to introduce students not only to the basic techniques of modern dance, but also to the social, historical, and cultural changes of the twentieth century that made America ripe for new dance forms. Important figures in the dance world from the turn of the century to 1940 will be presented, along with their techniques, theories of movement and compositional ideas. Exposure to this study will enable the students to integrate the thought behind the movement with the action. Studio course.

**DAN\*H114 Hip Hop 1 credit**

This course is designed to introduce students to the skills of Hip Hop dance with emphasis on general body technique and development, rhythmic awareness, rhythmic combinations of movement and various hip hop styles. It will segue from the Bee Bop and Doo Woo era into Locking, Popping and Breakin’, 1980’s and 1990’s Street Style, and basic House, Voguing, Krumping among others. It includes the historical and cultural perspectives that are particular to this American dance genre and cultural lifestyle.

**DAN\*H118 Dance Pedagogy for Early Childhood**

 **(also listed as ECE\*H118) 1 credit**

This course is designed to introduce students to the basic techniques and methodology for teaching dance to children, ages 2-5. Using the standards established by the State of Connecticut and the National Dance Education Organization, appropriate content for dance classes will be examined. We will view the dance class from a developmental perspective, identifying appropriate movement activities and strategies for teaching.

**DAN\*H131 Contemporary African Dance 1 credit**

This course is an introductory course to African dance. Students will learn the fundamentals of African dance through basic movement vocabulary and selected traditional dances. This course may include videos, lectures, readings, and discussions to give students a context for learning African dance. Additional instruction may include Afro-Caribbean techniques and dances, as well as other African Diaspora techniques and dances.

**DAN\*H140 Pilates/Wellness**

 **(also listed as HPE\*H140) 1 credit**

This course focuses on the quality of movement, posture and breathing by increasing strength, flexibility, and balance. The holistic perspective includes physical awareness, cognitive reflection, nutrition, and insights from feelings and focuses on mind-body centering. Pilates/Wellness is designed for the dancer, athlete, health professional or persons interested in overall well-being. This class meets the first ten weeks of the semester. Comfortable clothing is necessary.

**DAN\*H175 Kinesiology for Dancers 3 credits**

*Prerequisite: Approval of Director.* This course, designed especially for those involved in dance, athletics or somatics, looks at the structure and function of the human body. Anatomical and mechanical principles are analyzed. We will focus on the musculoskeletal system as a mechanism for motion. Students are expected to have a foundation in dance or other body movement. This course will satisfy the science requirement for dance majors.

**DAN\*H202 Ballet II: Classical to Contemporary 3 credits**

*Prerequisite: DAN\*H102.* Ballet from the Classical to Contemporary periods is designed to further the student’s study of the technique of classical ballet and its history in the twentieth century. Studio course.

**DAN\*H209 Ballroom Dance II 1 credit**

It is strongly advised that students take DAN\*H109 Ballroom I prior to taking this course or have a foundation in ballroom dance. This course is designed to expand students’ study of the history, evolution, music, steps, and styles of ballroom dancing. Three standard style dances, Swing, the Waltz, and the Foxtrot, and three Latin style dances, the Rumba, the Salsa, and the Tango, will be covered.

**DAN\*H213 Modern Dance II:**

 **Second Generation America 3 credits**

*Prerequisite: DAN\*H113 or permission of instructor.* This course encompasses the techniques, theories and philosophies of movement as presented by America’s second generation from Cunningham to Alvin Ailey. The social and cultural changes that influenced this period's dance also will be explored. Exposure to this study will enable the student to integrate the thought behind the movement. Studio course.

**DAN\*H221 Repertory/Ensemble I 3 credits**

*Prerequisite: Permission of instructor.* Modern, Jazz or Ballet compositions by faculty or renowned choreographers will be taught, rehearsed and presented in concert. Performance skills of projection, clarity, staging, spacing and truth to choreographers’ techniques will be practiced. Works for repertory may include Charles Weidman’s Brahm’s Waltzes, Anna Sokolow’s Rooms, Balanchine’s Tarantella, and Pilobolus’ Improvisational Techniques. Studio course. Additional rehearsals required.

***Course***

***Descriptions***

**DAN\*H222 Choreographic Principles/Ensemble I 3 credits**

*Prerequisite: Permission of instructor.* Choreographic Principles/ Ensemble is designed for students to discover sources of movement and develop the tools for structuring movement in time and space. It includes assigned composition problems and structured movement improvisation. Students may find their own personal statement in movement and develop a solo dance, and/or they may focus on making a group work. Students develop creative decision-making in working with a group. Elements of performance—costume, decor, lighting, staging—will also be explored and executed in formal concert. The Ensemble is the performing arm of the College. Studio course. Additional rehearsals required.

**DAN\*H224 Choreographic Principles/Ensemble II 3 credits** *Prerequisite: DAN\*H222 and permission of instructor.* This course is designed for students to expand their knowledge of movement and dance and to continue to develop the tools for structuring movement in time and space. It includes assigned compositional problems and structured movement improvisation. Students will continue to explore their own personal statement in movement and develop solos and/ or group work. Students will continue to develop and demonstrate creative decision-making in working with an ensemble, both choreographically and in production. Tools and vocabulary continue to be offered in an environment open to creative communication. Elements of performance (costume, decor, lighting, staging) and production (publicity, press releases, stage and house management, scheduling) will be explored also. Participation in Dance Concert is mandatory.

**DAN\*H225 Repertory/Ensemble II 3 credits**

*Prerequisites: DAN\*H221 and permission of instructor.* This course is designed to expand students’ study of dance compositions by faculty and renowned choreographers who will teach their work. Modern dance is emphasized but works may be from the jazz dance or ballet genre. The studied works will be videotaped and then rehearsed by the instructor. Students, working as an ensemble, will present these works in formal or informal concert. Performance skills of projection, clarity, staging, spacing, and truth to choreographers’ intent and technique will be further practiced. Students will continue to develop and execute production skills related to production. Participation in Dance Concert is mandatory.

**DAN\*H232 Ballet III 2 credits**

*Prerequisite: DAN\*H202.* This course continues to provide students with an understanding of the fundamental principles of ballet technique, to encourage students to achieve a level of self-discipline and physical control, and to instill an appreciation of the historical contributions of ballet to the overall development of dance as an art form. Reading and writing component are done outside of class. Extra rehearsal hours in the studio are required.

**DAN\*H234 Modern Dance III: Post Modern to**

**Contemporary Dance in America 2 credits** *Prerequisites: DAN\*H113 and DAN\*H213.* This course is an advanced level modern dance course that completes the historical trajectory by encompassing the post modern dance movement up until present day contemporary modern dance. Techniques, theories and philosophies of the post modern dance culture will be applied to the training and creation of work in this class, as well as advanced level contemporary dance techniques reflecting current dance trends, cultural and aesthetic movements, and artistic expressions in today's dance field. Studio course.

# DIGITAL ARTS TECHNOLOGY

## Liberal Arts and Behavioral/Social Sciences Division

**DAT\*H101 Introduction to Digital Arts 3 credits** *Prerequisite: CSA\*H105 or equivalent experience*. This course is an introduction and overview of the digital arts. The basic elements, components and skills required for digital art development and production will be defined and explored. Topics include; applications of digital arts, presentation software, visual design principles, digital media design, Web design, configuring a multimedia system, emerging technologies, multimedia components, and interactive multimedia development.

**DAT\*H102 Introduction to Photography 3 credits**

This course is an introduction to the fundamentals of photography concentrating on the use of the camera as a form of expression and communication. Manual camera functions and basic image editing procedures will be covered. Photographic composition, genres and ethics will also be considered through lectures and assignments. Note: students enrolled in DAT\*H102 will be responsible for purchasing a DSLR camera or other approved camera with manual functions.

**DAT\*H104 Multimedia Authoring I 3 credits**

*Prerequisite: DAT\*H101*. Multimedia Authoring I is an introduction to the planning, development and management of multimedia software projects, Interaction Design, and algorithm analysis. Topics include; multimedia and instructional design, multimedia and interaction design, multimedia and the WWW, arrays, functions and methods, events and event handlers, objects, logic structures, repetition structures, programming and scripting languages, and variables.

**DAT\*H106 Digital Design 3 credits**

*Prerequisite: DAT\*H101.* This course explores the uses of fundamental visual design principles in emerging technologies used to design and develop interactive electronic documents such as multimedia databases, multimedia electronic books, applications for hand-held devices, and other technologies. Topics include; elements of design, principles of design, XML, and delivery engines.

**DAT\*H108 Digital Imaging I 3 credits**

*Prerequisite: DAT\*H101.* Digital Imaging I provides an in-depth study of digital image files and their uses in the realm of digital graphics, imaging and video. Topics include; alpha channels, composition and lighting, color theory, data compression, filters, raster graphics, vector graphics, gradients, layering, screen resolution and bit depth, and video display formats.

**DAT\*H110 Digital Video Production I 3 credits** *Prerequisite: DAT\*H101.* Digital Video Production I is an introduction to the three phases of video production; pre-production, production, and post-production. Students will script, storyboard, shoot, and edit original short films. Topics include; alpha channels, aspect ratio, audio production, broadcast standards, computer monitors vs. video monitors, camera techniques, composition, compositing, compression, lighting, rolling credits, transitions, titles, and project management.

**DAT\*H116 Interactive Media Design 3 credits**

*Prerequisite: DAT\*H104*. Interactive Media Design is a practical and theoretical approach to the development and application of interactive digital media for desktop, portable devices, and Web-based applications. Learners will utilize the latest technologies to design, develop and present interactive digital media content. Topics include; principles of interaction design, human-computer interaction, intermediate JavaScript and XML programming, and developing interactive PDF documents.

**DAT\*H205 Multimedia Authoring II 3 credits**

*Prerequisite: DAT\*H104.* Multimedia Authoring II is an intermediate-level course in the application of advanced project development tools used in the creation of interactive multimedia for the edutainment, entertainment and Web industries. Students will learn and apply techniques used to create interactive multimedia for broadcast, electronic games, and WWW applications. Topics include; algorithm analysis, animation, Interaction Design and interactivity, introduction to Human-Computer Interaction, keyframing and tweening, objects and events, Lingo scripting, timeline-based authoring, and Shockwave.

**DAT\*H212 3D Graphics & Animation I 3 credits**

*Prerequisite: DAT\*H108.* The 3D Graphics & Animation I course is an introduction to the design and application of digital character modeling and animation. Students will learn to design 3D modeled objects and examine and apply fundamental 2D and 3D graphic algorithms. Topics include; animation, camera and rendering, extrusions, lighting, modeling, polygons and primitives, surfaces, terrain, texture maps, transforms, and vectors.

**DAT\*H215 Multimedia Web Authoring 3 credits**

*Prerequisite: DAT\*H205.* Multimedia Web Authoring utilizes the latest software technologies and methodologies to develop and deliver complete interactive multimedia software systems for Web-based applications. Topics include; advanced algorithm analysis, complex problems in Human-Computer Interaction, and advanced JavaScript and Action Script programming.

**DAT \*H218 Electronic Music Composition/**

**Audio Technology I**

**(also listed as MUS\*H218) 3 credits** *Prerequisites: CSA\*H105 and permission of the instructor.* This course is an introduction to the art and techniques of electronic music and audio production. The history, elements, and tools of electronic music and audio will be defined and explored. Topics include; acoustic theory, analog and digital audio principles, composition, recording engineering techniques, sound sampling, electronic synthesis, MIDI, and audio for multimedia and the World Wide Web.

**DAT\*H219 Electronic Music Composition/
Audio Technology II 3 credits**

*Prerequisites: DAT\*H218, MUS\*H218.* This course provides intermediate instruction in digital synthesis, digital sequencing software, and electronic composition methods. Students will complete a series of directed and independent compositional projects in a variety of styles. Topic include; construction of timbres, additive and subtractive synthesis, digital sampling, signal processing, and algorithmic composition.

**DAT\*H220 Acoustics and Sound Design 3 credits**

*Prerequisite: DAT\*H101.* The advanced functions of the properties of sound, human hearing, electro-acoustic instruments, digital sound reproduction systems, sound synthesis, and psychoacoustics are examined. Students will develop and participate in a number of practical sound design and audio engineering projects.

**DAT\*H224 Digital Video Production II 3 credits**

*Prerequisite: DAT\*H110.* This course examines advanced project development methods and tools for video production. Students will study and apply the processes involved in transforming a concept to a finished video product. Topics include; analysis, budget, copyright, scripting, storyboarding, sequencing, pre-production, production, and post-production. The learner will design, script, produce, edit, and complete an original video project.

**DAT\*H226 Motion Graphics for Film & Video 3 credits** *Prerequisite: DAT\*H110.* The study and application of state-of-theart special effect techniques used in film and video industries will be explored. Topics include; compositing of multiple layers, masks and mattes, advanced motion controls, and advanced color keying.

**DAT\*H230 Digital Imaging II 3 credits**

*Prerequisite: DAT\*H108.* The advanced study of the design and manipulation of digital graphic and image files will be realized through a series of experiential projects. Topics include; photo retouching, drawing with vector paths, creating special effects with multiple layer effects, and designing images for interactive electronic media.

 **DAT\*H234 3D Graphics & Animation II 3 credits** *Prerequisite: DAT\*H212.* This course will explore advanced techniques for character modeling and the design of virtual space. Topics include; lighting and atmospheres, environmental structures, organic modeling, and character construction. The learner will design, model, and animate a complete

3-dimensional virtual world.

**DAT\*H236 Digital Illustration 3 credits**

*Prerequisite: DAT\*H108 or equivalent experience*. This course is an exploration of vector-based illustration. The major elements, components and skills required for the production of graphics used in a variety of fields will be developed.

**DAT\*H237 Principles of Sound Recording 3 credits**

*Prerequisite: DAT\*H218 or MUS\*H218*. This course presents an in-depth study of the techniques and methodologies used in studio and live recording. In addition to classroom assignments and exercises, students will be expected to complete field work resulting in the recording, editing, and mastering of a live or studio project. Topics will include two-track and multi-track recording, studio acoustics and design, analog and digital mixing consoles, microphone placement techniques, signal processors, and studio session procedures.

**DAT\*H240 Multimedia Authoring III 3 credits**

*Prerequisite: DAT\*H205.* This course explores advanced multimedia systems and the theoretical and practical issues in designing interactive systems. Topics include; compression techniques, synchronization, user interface accessibility, indexing and retrieval techniques, operating system support for digital audio, video, and animation file formats, as well as network and transport protocols for multimedia. Emphasis will be placed on current design and delivery issues, software implementation and discussion of future directions.

**DAT\*H290 Digital Arts Project 3 credits**

*Prerequisite: DAT\*H224 or 230 or 240.* Completion of a significant project under the guidance of an advisor in an area of mutual interest such study terminating in a deliverable software/media product with technical documentation. The project must be in an area directly related to one of the three program options.

# DRUG AND ALCOHOL RECOVERY COUNSELOR PROGRAM (DARC)

## Liberal Arts and Behavioral/Social Sciences Division

**DAR\*H101 Issues in Drug and Alcohol Abuse 3 credits** *Prerequisite: Eligibility for ENG\*H101.* This course will introduce students to the substance abuse treatment field and discuss DARC admission and certification requirements. Students will explore key topic areas such as models of recovery; history of legislation and regulation; self-help and evidenced-based approaches to recovery, ethics, and confidentiality. Public health issues related to substances will be investigated, including trends in substance use, co-occurring disorders, advertising of tobacco and alcohol, costs to society, and continuum of care from prevention to aftercare.

**DAR\*H111 Addiction Counseling I 3 credits**

*Prerequisite: Eligibility for ENG\*H101.* Students will learn, practice, and develop counseling skills such as attending, reflecting, active listening, interviewing, and mirroring as it relates to addictions counseling. Students will learn theories that are fundamental to addiction counseling and understand the relationship of theory to skills. Students will reflect on their roles as counselors and define the qualities, knowledge base, and skills essential to becoming a competent, ethical, culturally-aware counselor-in-training.

**DAR\*H112 Group Counseling Theory**

 **and Techniques 3 credits**

*Prerequisite: Eligibility for ENG\*H101.* Students will be introduced to the concepts and theories of group counseling and group dynamics in the addiction field. Types of groups, group formation, and stages of group development, transitions, and termination of groups will be discussed as well as the ethical aspects of group work. Through a combination of didactic and experiential learning, students will have the opportunity to examine their own performances as group members and facilitators.

***Course***

***Descriptions***

**DAR\*H158 Biology of Addiction 3 credits**

*Prerequisite: Eligibility for ENG\*H101*. Students will be introduced to the basic pharmacology of drugs of abuse, and drug classification as well as the process of neurotransmission and brain functioning when drugs are introduced to the human body. Discussion of how each class of psychoactive substances alters neurotransmission and homeostasis will occur. The course examines the consequences of short- and long-term substance use, abuse, and addiction on all major bodily systems and the fetus.

**DAR\*H220 Co-Occurring Disorders Counseling 3 credits** *Prerequisite: Eligibility for ENG\*H101*. The purpose of this course is to educate students about the principles, assessment instruments, strategies, settings, and models for treating clients with co-occurring disorders in the addiction treatment setting. This course will provide education and training on models for treating co-occurring disorders, assessment practices, development of treatment plans, and counseling strategies that may be used in inpatient and outpatient settings.

**DAR\*H213 Addiction Counseling II 3 credits**

*Prerequisite: Eligibility for ENG\*H101.* This course builds upon the theoretical base presented in Addiction Counseling I and will encourage further development of encouraging, paraphrasing, summarizing and reflecting of feelings as they relate to conducting intake interviews, treatment planning, counseling, and the discharge process. Students will also learn about complex issues which include GLBT populations, HIV/AIDS, domestic violence, eating disorders, relapse prevention, specialized self help groups, ethical behavior, and multicultural competencies.

**DAR\*H251 Counseling Internship I 6 credits**

*Prerequisites: DAR\*H101, 111, 112, 158; Passing grade of "C" or better for ENG\*H101 and permission of the program coordinator.* Students will spend 15 hours per week in a substance abuse treatment facility under the joint supervision of the DARC program Coordinator and a supervisor at the facility and attend a seminar once per week. Students will observe, practice, and develop competency in the 12 core functions of addiction counseling. As students develop increased competence, they will progress from active observers to co-counselors and then to counselors. Students will continue academic study during a weekly seminar. Students will be expected to reflect on their field work, participate in clinical supervision and peer group interaction. (fall only)

**DAR\*H252 Counseling Internship II 6 credits**

*Prerequisites: Passing grade of “C” or better in DAR\*H251; Passing grade of "C" or better for ENG\*H101 and permission of DARC program coordinator. DAR\*H251 and DAR\*H252 must be completed in consecutive (Fall /Spring) semesters.* A continuation of DAR\*H 251, students will continue their field placements for 15 hours per week in the same substance abuse treatment facility. Students will refine their counseling skills and assume increased responsibility for implementing the transdisciplinary foundations and competencies required of addiction counselors. During the semester, students will function as a primary addiction counselor for one or more clients. The classroom component (weekly seminar) of this internship will prepare students for the certification exam and case presentation as well as provide for ongoing clinical supervision, personal reflection, and growth. (spring only)

# EARLY CHILDHOOD EDUCATION

## Liberal Arts and Behavioral/Social Sciences Division

**ECE\*H101 Introduction to Early**

 **Childhood Education 3 credits**

A study of the historical, philosophical, and social perspectives of early care and education. Emphasis will be on modern development and trends, along with an understanding of the organization and composition of early childhood education settings, which include curriculum materials, learning environments and the teacher’s role. Four three-hour observations of various types of early childhood programs and field trips are required.

**ECE\*H103 Creative Experiences for Children 3 credits**

This course is designed to study the concept of creativity and the creative process as it applies to art and play for young children. At the completion of this course, the student will be able to set-up a creative play environment, facilitate children's creative play and develop an art philosophy and creative art program for children.

**ECE\*H106 Music and Movement for Children 3 credits**

*Prerequisite: ECE\*H101.* This course is designed to have students acquire skills in order to plan and implement creative music and movement education experiences for young children. Areas of exploration will include singing, listening to music, rhythmic activities, chants, creating music, using instruments with children, multi-cultural music, creative dance and movement, musical games, music for children with special needs, and using music spontaneously in the classroom. The main goals of the course are to develop an understanding of the importance of music and movement education experiences in an early childhood environment, the role that music plays in the growth and development of young children, and how these experiences can be creatively planned, implemented, and integrated throughout the daily curriculum.

**ECE\*H109 Science and Math for Children 3 credits**

This course is designed to help students explore a variety of math, science, social studies and technology experiences suitable for use with young children. Math and science concepts are presented in relationship to everyday objects and experiences. Students will consider how math, science, social studies and technology concepts are embedded in classroom, family, and everyday experiences as well as how to support development of related concepts and skills.

**ECE\*H118 Dance Pedagogy for Early Childhood**

 **(also listed as DAN\*H118) 1 credit**

This course is designed to introduce students to the basic techniques and methodology for teaching dance to children, ages 2-5. Using the standards established by the State of Connecticut and the National Dance Education Organization, appropriate content for dance classes will be examined. We will view the dance class from a developmental perspective, identifying appropriate movement activities and strategies for teaching. There is no prerequisite for this class.

**ECE\*H141 Infant/Toddler Growth**

 **and Development 3 credits**

*Prerequisites: ECE\*H101. A physical examination is required by a doctor and a criminal background check are required before starting ECE\*H141.* An introduction to the care and teaching of infants and toddlers, which emphasizes the interrelationship between social, emotional, cognitive, physical, and language development. Age appropriate curriculum strategies will be based on developmental theories. Components of a high quality program will be explored. Students will be required to fulfill 8 weeks (4 hours per week) of field placement work with toddlers as well as complete three, 3-hour observations of infants in child care settings. Placement is determined by the coordinator.

**ECE\*H176 Health, Safety and Nutrition 3 credits**

The relationship between health, safety, nutrition, and child development will be explored. Emphasis will be on the strategies needed to implement a safe, healthy, and nutritionally sound program.

Integration of these areas into the total curriculum will be examined.

**ECE\*H206 Administration and Supervision of Early Childhood Programs 3 credits**

*Prerequisite: ECE\*H101 or permission of the Early Childhood Education Coordinator.* An examination of the multi-dimensional role of the early childhood program director/administrator. Administrative styles, management tools, and interpersonal skills that contribute to effective leadership will be explored. Topics such as CT State licensing regulations, NAEYC accreditation, director certification, public policies, and professionalism will be discussed. (spring)

**ECE\*H210 Observation, Participation**

 **and Seminar 3 credits**

*Prerequisites: ECE 101. A physical examination by a doctor and a criminal background check are required before starting ECE\*H210.* This course is designed to help students to observe, interpret, and assess children’s behavior and developmental characteristics and to increase awareness of typical and atypical patterns of behavior, as well are provided for the study of young children at the discretion of the coordinator. The students will observe and participate in an accredited center to gain experience in working with young children. In weekly seminars, students will focus on issues related to observing and understanding children’s development. Students will spend a total of 60 hours, (4 hours per week) observing, documenting, and interacting with young children in the classroom.

**ECE\*H215 The Exceptional Learner 3 credits**

*Prerequisite: ECE\*H101, PSY 203 or permission of the Early Childhood Education Coordinator.* The study of the “exceptional child” with emphasis on the history, laws, concepts, practices, and terminology used by professionals in the field. Accommodations and techniques used by teachers in an inclusive classroom will be covered.

An observation of a preschool special education class is required.

**ECE\*H222 Methods and Techniques in Early Childhood Education 3 credits**

*Prerequisites: ECE\*H101, 103, 106, 176, and 231, ENG\*H101, Psy\*H111, Soc\*H101, should be taken concurrently with ECE-H291*. The study of the knowledge and skills needed to plan, implement, and evaluate a developmentally and culturally appropriate curriculum. Experiences will focus on the design of the learning environment, the interaction between teacher, child and family, classroom management, and the fostering of opportunities to enhance the development of the whole child. Guidance of children’s behavior will be explored. Written permission is required before enrollment. (spring)

**ECE\*H231 Early Language and Literacy Development 3 credits**

*Prerequisite: ECE\*H101*. An introduction to language and literacy development in the young child. Exploration of the early childhood language arts curriculum which includes speaking, listening, writing, and reading skills will be examined. Emphasis on the influence of a child’s cultural background and experiences on emerging literacy development will be explored. Creation of a literacy-rich environment that engages children in developmentally appropriate language arts experiences will be included. Field trips are required. (spring)

**ECE\*H290 Student Teaching I 3 credits**

*Prerequisites: ECE\*H101, 103, 106, 176, and 231, ENG\*H101, PSY\*H111, SOC\*H101.* A physical examination by a doctor and a criminal background check are required before starting ECE\*H290. This course is designed to develop specific skills needed by the student in order to assume the responsibilities in a classroom. Through guided supervision in the classroom and seminars, the student will gain the needed experience by putting theory into practice. The coordinator will place students in the College’s Center for Early Childhood Education. Written permission is required before enrollment. Topics to be explored will include classroom management, daily schedules, curriculum and developmentally appropriate planning. The student is required to fulfill 120 hours of work experience during the semester. (8 hours per week minimum) (fall)

**ECE\*H291 Student Teaching II 3 credits**

*Prerequisites: ECE\*H101, 103, 106, 176, 231, and 290, ENG\*H101, PSY\*H111, 204, SOC\*H101. A physical examination by a doctor and a criminal background check are required before starting ECE\*H291. This course is a continuation of ECE\*H290.* During this phase of the work experience, the student will concentrate on working directly with young children. The overall objectives are for the student to be able to manage a classroom independently, plan, organize, execute, and evaluate classroom activities on a weekly basis, and be able to critique effectively one’s role in the classroom. The student will be under the supervision of an on-site supervisor and the College instructor. Individual placements are under the direction of the Coordinator which includes eight hours per week in the Center for Early Childhood Education and four hours per week in another setting. Written permission is required before enrollment. The student is required to fulfill 192 hours of work experience for the semester. (12 hours per week minimum) (spring)

# ECONOMICS

## Business Division

**ECN\*H101 Principles of Macroeconomics 3 credits** An introduction to the basic structure of the United States economic system is presented. Topics include: types of economic systems, characteristics of capitalism, supply and demand, inflation and unemployment, the federal reserve system, and economic policy.

**ECN\*H102 Principles of Microeconomics 3 credits**

*Prerequisite: ECN\*H101.* An introduction to the problems of scarcity and resource allocation as it pertains to households and firms. The course centers on production and cost analysis in the four major types of industry models. Topics include supply and demand, elasticity, consumer choice, government in the microeconomy and price determination under various market conditions.

**ECN\*H130 Consumer Economics 3 credits** Study concerns the proper management of personal income and expenditures. Topics include: a study of inflation and business cycles, commercial and savings accounts, budgets, charge accounts, installment buying use of credit, home ownership, insurance and taxes.

**ECN\*H250 Money and Banking 3 credits**

This course examines monetary theory and policy with special attention to the monetary system, commercial banking, the thrift industry, central banking, and capital markets.

# ELECTRONIC ENGINEERING TECHNOLOGY

## Science, Technology, Engineering & Mathematics Division

**EET\*H102 Electrical Applications 3 credits**

*Corequisite: MAT\*H137*. An introduction to the fundamental concepts of electricity and electronic technology. A study of DC and AC electrical circuits with the emphasis on instrumentation, measurements, devices, and application of theory to practical systems. Topics covered include electrical circuits, applied electrical technology, transformers, motors and generators, electronic fundamentals and devices. Two class and two laboratory hours weekly. (fall/spring)

**EET\*H104 Electronic CAD and Fabrication 1 credit** *Prerequisite / Corequisite: Some experience with WINDOW operating system.* Introduction to the basics of double sided Printed Circuit Board construction and soldering components to these boards. completion of a small fabrication kit including PC Board, leading to better physical understanding of PCB’s as a prerequisite to using OrCAD Layout software. The CAD then moves into the CAD laboratory to study the concepts of schematic capture (OrCAD CAPTURE) into a NETLIST and on to PCB layout. Three laboratory hours weekly. (fall/spring)

**EET\*H110 Electric Circuits I 4 credits**

*Corequisite: MAT\*H172.* The fundamentals or direct current circuits are established. Emphasis is placed on the characteristic description of circuit behavior. Ohm’s law and Kirchhoff’s law are used to determine circuit characteristics. Circuit rules, methods and theorem are covered extensively. Resistance, capacitance and transient responses are introduced. Formal laboratory report writing is required. Four class hours and two laboratory hours weekly. (fall/spring)

***Course***

***Descriptions***

**EET\*H114 Electric Circuits II 4 credits**

*Prerequisites: EET\*H110. Corequisite: MAT\*H185.* The application of circuit analysis techniques acquired in Electric Circuits I are extended to circuits excited by AC sources. Emphasis is placed on solving circuit problems using complex numbers and phase diagrams. Topics include: inductance, transients, filter theory, mutual inductance, transformer theory, and an introduction to polyphase circuits. Formal report writing is required. Three class and two laboratory hours weekly. (fall intermittently/spring)

### EET\*H126 LabVIEW 2 credits

*Corequisite: MAT\*H172.* This course will introduce the student to data acquisition using the computer. Students will learn how to create “virtual instruments” using LabVIEW™, a powerful graphical programming language for data acquisition and manipulation. Emphasis is placed on standard programming structures, real-time data acquisition, mathematical manipulation and graphing. Four laboratory hours (fall/spring intermittently)

**EET\*H136 Electronics I 4 credits**

*Prerequisite: EET\*H110. Corequisites: EET\*H114, MAT\*H185.* Semiconductor physical concepts and P-N junction theory is established and applied to basic devices such as diodes, bipolar junction transistors, and field effect transistors. Circuit applications of these and other special devices are studied, with an emphasis on operating principles and analysis techniques. Three class and two laboratory hours weekly. (fall intermittently/spring)

**EET\*H208 Applied Circuit Analysis 3 credits**

*Prerequisites: EET\*H126, 114, MAT\*H185.* The analysis of RLC circuits using classical calculus for inputs which are both sinusoidal and non-sinusoidal are examined. Resulting first and order differential equations are solved using classical methods and by use of Laplace transforms. Basic derivatives and integration are taught as they apply to RLC circuitry. Three class and three laboratory hours weekly. This course may be substituted for MAT\*H232 for Electrical students only. (fall intermittently)

 **EET\*H232 Electronics II 4 credits**

*Prerequisite: EET\*H136. Corequisite: MAT\*H185.* Characteristics of small signal amplifiers using BJT’s and FET’s are examined, and followed up with a study of linear op-amp circuits. Comparators and Schmitt Triggers using op-amps are also explored. Basic characteristics of power amplifiers and oscillators are studied, and the operation of the thyristor family of devices is introduced. Three class and three laboratory hours weekly. (fall)

**EET\*H242 Fiber Optics 3 credits**

*Prerequisites: EET\*H136, 252, PHY\*H122.* The course will cover the basics of fiber optics, how it is manufactured, its applications and fiber performance. The different types of construction of fiber optic cabling will be discussed and illustrated, with the advantages and disadvantages of each. Different types of connectors will be covered in both the classroom and the laboratory with the student making many of the actual connections. Measurement of the transmission characteristics of cables will be measured in the laboratory using a Time Domain Reflectometer. The use of single mode and multimode cabling relative to the type of transmission will be discussed. Three class and three lab hours weekly. (Course has not been offered in recent years.)

**EET\*H251 Electronic Instrumentation 3 credits**

*Prerequisites: EET\*H126, 114. Corequisites: EET\*H232, EET\*H252.* A study of the operating principles of electronic and electrical instruments. Both analog and digital instruments are covered. Sources of instrument errors and standards of measurement are included, along with the design of VOM circuits and basic electronic instruments. Also included is an introduction to LABVIEW (Basic Virtual Instrument Programming) and data acquisition. Three class and three laboratory hours weekly. (fall)

**EET\*H252 Digital Electronics 4 credits**

*Corequisite: EET\*H114.* The study of number systems, Boolean algebra, logic gates and combinational circuits. This study provides the basis for investigating the operation of sequential circuits including flip-flop applications. Design of arithmetic circuits adders and subtractors and BCD are studied. Decoders, encoders, multiplexers and demultiplexers are included as an application of the basic gates. Use of Electronic WorkBench software to solve logic problems. Three class and three laboratory hours weekly. (fall)

**EET\*H253 Advanced Digital Electronics 3 credits**

*Prerequisite: EET\*H252.* A continuation of digital circuit design. Includes counters (asynchronous, synchronous types), multi-bit shift registers, logic families A/D and D/A converters, and code converters. Static and dynamic RAM memory circuits used in computers are studied along with ROMs, masked PROMs and erasable PROMs. CPLD design is explored extensively. Schematic entry and state diagram are methods learned to program a Xilinx FPGA. VHDL is introduced. Three class and three laboratory hours weekly. (spring)

**EET\*H256 Microprocessors 4 credits**

*Prerequisite: EET\*H252.* A study of the fundamentals of Microchip Corporation’s PICTM microcontroller architecture and high level programming language using Micro Engineering Lab’s PIC BASIC PRO compiler. Programming concepts include looping, decisions, time delays, interrupts, and LCD display. Hardware is addressed via the M. E. Labs X1 experimenter board. The PBPro compiler is run within Microchip’s MPLAB Integrated Development EnvironmentTM allowing full simulation capability as well as use of the Microchip ICD2 In Circuit Debugger for observing hardware operation in a very controlled manner. Three class hours and three laboratory hours weekly. (spring)

**EET\*H268 Control Systems 3 credits**

*Prerequisites: EET\*H126, 114, 232, 252, MAT\*H185.* An introductory course which investigates primarily electro-mechanical control systems. Discrete control systems using relay logic and programmable controllers (PLC’s) are studied. Open and closed loop analog speed control systems are closely investigated. Motion, work EVSelope, axis of movement and programming lead up to a project with a working robot. Three class and three laboratory hours weekly. (spring)

### EET\*H294 Projects 2 credits

*Prerequisites: EET\*H104, 232, 252.* Provides the opportunity to construct a project of interest to the student with the approval of the instructor. The course involves research, preparation, and a written report for the project, as well as full implementation, testing, fabrication, troubleshooting, and final demonstration of the project. Schematics and PCB layouts will be prepared using OrCAD SDT and OrCAD PCB tools. Four laboratory hours weekly. (spring)

# EMT-PARAMEDIC

## Allied Health/Nursing/Physical Education

**EMT\*H100 Emergency Medical Technician-**

 **Basic (EMT-B) 6 credits**

This course includes classroom and clinical experiences and provides students the opportunity to develop the knowledge and skills required for EMT-B National Certification. Emphasis is placed on patient assessment, clinical signs and symptoms, pathophysiology and prehospital care of patients. Areas of instruction include CPR, airway essentials, assessment and care of trauma and medical patients including infants, children and the elderly, rescue operations, hazardous materials and pharmacological interventions. Clinical rotation in an emergency room is required. (spring)

**Health Requirements:**

Students will be required to submit the completed immunization and medical compliancy requirements before participating in the clinical observation component of this program. Students will receive a packet of information describing current college policies from the course instructor.

**Criminal Background Checks:**

Many clinical sites are now requiring that criminal background checks, be completed on any students who will be attending a clinical rotation at those facilities. Students must follow instructions for obtaining a background check provided to them by the course instructor. Students who are found guilty of having committed a felony/misdemeanor may be prevented from participating in clinical experiences. If you cannot participate in a clinical rotation at an assigned facility, you may not be able to complete the objectives of the course. Specific situations are reviewed by college personnel.

Students are responsible for fees associated with health requirements and background checks.

# ENGINEERING TECHNOLOGY

## Science, Technology, Engineering & Mathematics Division

**TCN\*H101 Introduction to Engineering Technology 3 credits** Students will conduct research, including interacting with professionals in the field of Engineering and Technology, to evaluate careers of interest to the student. Student teams will employ technical skills, appropriate software and technology to solve projects related to engineering and technology. They will also evaluate the use of information and technology and how it affects our society. Necessary skills for academic and professional success, such as critical thinking, problem solving, teamwork, study skills, time management and ethics in engineering, will be presented. Students will be required to write a research project and present their findings to the class in an oral presentation. (fall/spring)

# ENGLISH

## Liberal Arts and Behavioral/Social Sciences Division

**ALP/ENG\*H063 Writing: Intro to the Essay 3 credits** This course will enhance the student’s confidence in expressing ideas and provide practice with sound writing mechanics. Emphasis is placed on practicing the writing process with a focus on rhetorical methods; skills are taught within the context of essay writing. In addition, students will read, critically assess and write as a response to the readings. Library and research techniques are practiced. This course requires a minimum of six (6) hours of outside work per week.

* This course is part of the Accelerated Learning Program combination of ENG\*H063 and ENG\*H101.
* Placement into the course(s) will be determined by Accuplacer scores: NG Reading 247-257.
* Students registered for both CRNs will have the opportunity to receive credit for both courses.
* These courses run in consecutive time blocks: ENG\*H101 is the primary course and will be offered first, then ENG\*H063 will continue through the second block as a workshop to support the work offered in ENG\*H101.
* In the ENG\*H063 class, students will prepare for and review questions from ENG\*H101, write short papers to reinforce concepts taught in ENG\*H101, review drafts, and work on reducing writing errors. Requirements for attendance in either one or both classes will be made on an individual basis.

3 Credits for ENG\*H101 and 3 credits for ENG\*H063 (not toward graduation). Student MUST receive a C or better (73) to pass this course.

**ENG\*H096 Introduction to College English 3 credits**

*Prerequisite: Appropriate score on placement test, or approval from Division Leader or advisor.* This course is designed to prepare students for the reading and writing demands in Composition and other college-level courses by integrating reading, writing, and critical thinking. Student writing will focus on understanding, reporting on, reacting to, and analyzing the ideas of others. Texts will serve as models and sources for students to refine their skills in exposition, interpretation, and argumentation. Students learn and practice specific college-level skills through critical reading and writing, class discussions, lectures, group presentations or workshops. This course does not satisfy an English requirement or an elective in any degree program, nor do its credits count toward graduation.

**ENG\*H101 Composition 3 credits**

*Prerequisite: “C” or better in ENG\*H096, or "C" or better in ESL, or successful completion of placement tests, appropriate SAT score or recommendation of the Associate Dean of LABSS and instructor. May not be taken concurrently with any other English course except ENG\*H063.* This course is designed to introduce students to the importance of writing and to develop their critical thinking, reading, and writing skills. The class will focus on the writing of expository essays, often in response to complex readings. This course will emphasize the necessity of revision as a means of producing college-level writing. Intensive library and research techniques are an integral part of this course.

**ENG\*H102 Literature and Composition** **3 credits**

*Prerequisite: “C” or better in ENG\*H101 or recommendation of the Associate Dean of LABSS and instructor.* This advanced writing course is designed to refine student's critical reading and writing skills through in-depth analysis of literary genres such as fiction, poetry, and drama. Students will engage in sophisticated writing assignments which emphasize the importance of authoritative research and complex logical reasoning, interpretation, and argumentation. Students will apply literary theories while developing their understanding and appreciation of literature and its relationship to society. ENG\*H102 is an academic core course.

**ENG\*H200 Advanced Composition 3 credits**

*Prerequisite: "C" or better in ENG\*H101 or recommendation of the Associate Dean of LABSS and instructor.* This advanced writing course is designed to refine student's critical reading and writing skills through in-depth analysis of intellectually challenging texts. Students will engage in sophisticated writing assignments which emphasize the importance of authoritative research and complex logical reasoning, and argumentation. Topics to be addressed will be contemporary cultural issues central to present day academic discourse.

**ENG\*H202 Technical Writing 3 credits**

*Prerequisite: ENG\*H101.* This course involves the student in the study and practice of the basic skills and principles of technical writing for business and industry. The practice of writing is emphasized; graphic and design elements including designing visual formats are given secondary emphasis. The course focuses on the fundamental skills and formats of letter/memos, instructions, proposals, reports, and layperson writing (communicating difficult subjects to general audiences). Individual instructors may add other subjects.

**ENG\*H211 Short Story 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200.* This course is a study of the framework and the major movements, writers and works of short fiction. Emphasis is given to the various attempts to portray the response to the complexity of life and to examine the role of literature. It will, further, focus on the study of short prose fiction in order to develop the ability to read and write. The course informs understanding of how literary form suits both an author’s and an age’s aesthetic.

**ENG\*H214 Dramatic Literature 3 credits**

*Prerequisite: ENG \*H102 or ENG\*H200.* The study of dramatic literature, analysis and critical writings about the great plays from the canon of world drama. Assigned readings may include plays by Euripides, Shakespeare, Molière, Ibsen, Chekhov, Williams or Hansberry.

**ENG\*H215 Studies in Children’s Literature 3 credits** *Prerequisite: ENG\*H102 or ENG\*H200.* This course covers selection, evaluation and critical study of books and materials available for children. Assigned readings may include folklore, poetry, fiction, and non-fiction, as well as discussion of outstanding writers and illustrators, past and present.

***Course***

***Descriptions***

**ENG\*H221 American Literature I 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200.* Students read and discuss leading writers of America to the Civil War. Assigned readings may include works of the Puritans, Jefferson, Franklin, Cooper, Emerson, Melville or Whitman. Critical and historical analysis is included. The period covered by this course corresponds to the period covered by HIS\*H201, U.S. History I.

**ENG\*H222 American Literature II 3 credits** *Prerequisite: ENG\*H102 or ENG\*H200.* Students read and discuss leading writers of America from 1865 through World War II. Critical and historical analysis is included. Assigned readings may include Twain, James, Crane, Frost, Fitzgerald, Hemingway, and Faulkner. The period covered by this course corresponds to the period covered by HIS\*H202, U.S. History II.

**ENG\*H231 British Literature I 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200.* Students read and discuss representative writers of British poetry and prose to the eighteenth century. Assigned readings may include Chaucer, Shakespeare, Milton, Pope, Swift, and Johnson.

**ENG\*H232 British Literature II 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200*. Students make an intensive critical and historical study of British writers beginning with Blake and the Romantics and ending with twentieth century writers.

**ENG\*H241 World Literature I 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200.* This course is a study of representative works of world literature to 1715. The course emphasizes the study and consideration of the literary, cultural, and human significance of selected great works of the Western and nonWestern literary traditions.

**ENG\*H242 World Literature II 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200.* This course is a study of representative works of world literature from 1715 to present day. The course emphasizes the study and consideration of the literary, cultural, and human significance of selected great works of the Western and non-Western literary traditions.

**ENG\*H251 African-American Literature 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200.* This survey of African-American literature will examine the Black experience through literature. It will begin with the eighteenth century and continue to the present.

**ENG\*H260 Studies in Women's Literature 3 credits** *Prerequisite: ENG\*H102 or ENG\*H200.* This course is a study of the representative works by women from historical, social, and literary perspectives and examines the literary impact of gendered identities. Emphasis is given to how gender roles develop and change and how women's views of themselves are reflected in their writing. From tracing the development of this literature, the class will consider the historical, philosophical, religious, and cultural perspectives that allow us to delve into the writing of major women writers. This course will focus primarily on Western writers, though not exclusively. Assigned readings may include writers from the Renaissance to the present.

**ENG\*H269 Studies in Young Adult Literature 3 credits** *Prerequisite: ENG\*H102 or ENG\*H200.* This course covers selection, evaluation, and critical study of fiction available for adolescents and young adults (ages 12-18). Students will learn about the young adult novel as a literary form with an emphasis on reading of representative fiction. The course will also include the history of the genre and interpretive approaches to texts, the exploration of common themes, as well as the opportunity to write young adult fiction.

**ENG\*H274 The Graphic Novel as Literature 3 credits** *Prerequisite: ENG\*H102 or ENG\*H200.* This course explores the use of the combination of words and graphic images to create effective storytelling. Both contemporary and historic examples of graphic novels will be examined.

**ENG\*H277 Science Fiction & Society 3 credits** *Prerequisite: ENG\*H102 or ENG\*H200*. In this course, students will develop skills in understanding and appreciating the genre of science fiction and its relation to other literary genres. Additionally, students will apply critical methodologies and investigate relationships between science fiction and society, thus confirming their skills of analysis and writing. Particular approaches to science fiction will involve Marxist, feminist, gender, psychoanalytical, and anthropological critical theories.

**ENG\*H278 Contemporary Literature 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200*. This course examines post-WWII literature, including short fiction, poetry, and drama. This course will include discussions of literatures from around the world as well as new developments in literary studies, such as post-Colonialism and postmodernism.

**ENG\*H281 Creative Writing 3 credits**

*Prerequisite: ENG\*H102 or ENG\*H200.* This course gives students practical experience in writing various literary genres. The course will include an introduction to the principles and techniques of creative writing aimed at developing the creative process. The emphasis will be on individual creative methods, creative reading and listening, editorial techniques, and the production of finished work, including possible preparation of manuscripts for publication.

# ENGLISH AS A SECOND LANGUAGE

## Liberal Arts and Behavioral/Social Sciences Division

ESL students registered prior to Fall 2015 may use up to 6 credits of intermediate and advanced levels of ESL courses to fulfill the modern language and/or arts and humanities elective requirements. For new students registered in Fall 2015 or onwards, ESL 169, ESL 162 and ESL 157 only can be used to fulfill the General Education Requirements for Written Communication and Oral Communication respectively. However, transfer of ESL credits from NVCC to other institutions or from other institutions to NVCC are governed by the policies of the receiving institution.

The ESL courses are designed for students whose native language is not English. The sequence endeavors to help students attain a level of proficiency in English that will permit them to succeed in the academic or career programs of the college. The ESL sequence has six levels. The core of the sequence is the 6-credit reading/writing courses which integrate discussion and grammar into the content. There are grammar courses from levels one through five; oral communication courses at levels one, three and five; and one pronunciation course at level three. Placement in ESL courses is determined by the ESL office and is based on the Levels of English Proficiency (LOEP) exam and a writing sample. To be promoted to the next level, students must demonstrate mastery of the respective language learning competencies, which is determined by a grade of “C” or better and completion of all coursework. Students in upper levels of ESL may concurrently take some academic courses, in accordance with course prerequisites.

Students in ESL\*H152 Reading and Writing V have the option to go to either ESL\*H162 Reading and Writing VI, especially designed for those who received a “C” or “C+” in ESL\*H152. Successful completion of this course with a “C” or better will promote students to ENG 101. For those ESL\*H152 students who received a B- or higher or for those who received high placement scores, they can take an accelerated class, ESL\*H169 Writing VI that is taken concurrently with an ENG\*H101 ALP, which combined are known as Composition ESL ALP. After successful completion of the ESL ALP sequence, with a “C” or better, students progress to ENG\*H102 or a higher ENG course.

**ESL\*H013 Writing and Reading I 3 credits**

*Prerequisite: Successful completion of ESL\*H5030 (Real Life English) or specified score on ESL placement exam.* In this low beginning level course, students begin to develop basic skills in reading and writing. Coursework focuses on basic grammar structures and sentence construction. Vocabulary is increased through reading and writing. This course requires a minimum of six hours of outside work per week.

**ESL\*H015 Grammar I 3 credits**

*Prerequisite: Successful completion of ESL\*H5030 Real Life English or specified score on ESL placement exam.* In this low beginning level course, students will be introduced to patterns and rules of basic grammar structures. Students will practice and apply these structures through exercises, reading, writing, and discussion. This course requires a minimum of six hours of outside work per week.

**ESL\*H017 Oral Communications I 3 credits**

*Prerequisite: Successful completion of ESL\*H5030 Real Life English or specified score on ESL placement exam.* In this low beginning level course, students will work toward improving their speaking and listening skills. Students will develop their oral communication skills, including pronunciation, through a variety of activities such as role playing, conversation, large and small group discussions, and oral reports. This course requires a minimum of six hours of outside work per week.

**ESL\*H022 Reading and Writing II 6 credits**

*Prerequisites: "C" or better in ESL\*H013 or specified score on ESL placement exam.* In this high beginning level course, students continue to develop reading and writing skills by reading extensively and writing effective sentences and structured paragraphs. Reading and writing also provide the basis for vocabulary and grammar development. This course requires a minimum of twelve hours of outside work per week.

**ESL\*H025 Grammar II 3 credits** *Prerequisite: "C" or better in ESL\*H013, or specified score on ESL placement exam.* In this high beginning level course, students build on basic grammar structures and practice them with reading, writing, and speaking exercises. This course requires a minimum of six hours of outside work per week.

**ESL\*H132 Reading and Writing III 6 credits**

*Prerequisite: "C" or better in ESL\*H022 or specified score on ESL placement exam.* In this low intermediate course, students continue to develop reading and writing skills by reading extensively and writing effective sentences and structured paragraphs. Assigned readings (including whole works) inspire individual writing assignments as well as discussions in small and large groups. In addition to learning grammatical principles, students work on effective sentence structures, paragraph development and organizational skills in writing compositions. This course requires a minimum of twelve hours of outside work per week.

**ESL\*H135 Grammar III 3 credits**

*Prerequisite: "C" or better in ESL\*H022 or specified score on ESL placement exam.* In this low intermediate course, patterns and rules of grammar structures will be introduced, practiced, and applied in a meaningful context. Formal exercises, short writings, and communicative activities will be used to promote mastery of essential language structures. This course requires a minimum of six hours of outside work per week.

**ESL\*H137 Oral Communications III 3 credits**

*Prerequisite: "C" or better in ESL\*H022 or specified score on ESL placement exam.* In this low intermediate course, communication skills and fluency will be developed using authentic language. Students will develop increased self-confidence and competency through a variety of activities that address oral communication, pronunciation, listening and reading comprehension, and vocabulary development. Activities will include role-playing, interviewing, class and small group discussions, oral reports, and written exercises. This course requires a minimum of six hours of outside work per week.

(Fall,Spring)

**ESL\*H139 Pronunciation III 3 credits**

*Prerequisites: "C" or better in ESL \*H022 or specified score on ESL placement exam.* This course will provide extensive, in-depth practice in English pronunciation with special focus on rhythm, stress, and intonation. Basic features of English phonology will be reviewed. Students will learn to evaluate their own speech in order to become more competent, self-assured speakers. Short readings and poetry will be used to facilitate the unique expressive and communicative features of spoken English. This course requires a minimum of six hours of outside work per week.

**ESL\*H141 Integrated Skills IV 3 credits**

*Prerequisite: "C" or better in ESL\*H132* **and** *permission of the ESL Program Coordinator.* This course is designed to help high intermediate level students strengthen reading and writing skills, as well as further develop proficiency in the use of grammar structures in authentic contexts. Short readings (including whole works) will be assigned as a basis for small group and class discussions and will also serve to introduce essential grammar rules, and expand vocabulary for application in a meaningful context. Writing tasks will be assigned to develop both sentence and paragraph structures. Students focus on writing and rewriting of paragraphs and essays to develop ideas, organization, clarity and accuracy in their writing. This course requires a minimum of six hours of outside work per week. *ESL students may use up to 6 credits of Intermediate and Advanced levels of ESL* *courses to fulfill the Modern Languages/Arts and Humanities elective requirements.*

**ESL\*H142 Reading and Writing IV 6 credits**

*Prerequisite: "C" or better in ESL\*H132 or specified score on ESL placement exam.* In this high intermediate course, students continue to strengthen reading and writing skills. Assigned readings (including whole works) as well as student writing form the basis for small group and class discussions. Students focus on writing and rewriting essays to develop ideas, organization, clarity and accuracy in their writing. This course requires a minimum of twelve hours of outside work per week.

**ESL\*H145 Grammar IV 3 credits**

*Prerequisite: "C" or better in ESL\*H132 or specified score on ESL placement exam.* In this high intermediate course, students will further develop proficiency in the use of grammar structures through group discussions, oral practice, written exercises, and short writings. Use of grammar structures in authentic contexts will be emphasized. This course requires a minimum of six hours of outside work per week.

**ESL\*H149 Pronunciation Workshop 3 credits**

*Prerequisite: "C" or better in ESL\*H139* **or** *permission of the ESL Program Coordinator.* This course is designed to help students improve features of their American English pronunciation that could confuse or distract listeners and interfere with understanding. By learning how the sounds of English are produced and how authentic rhythm, stress and intonation are expressed, students will increase the accuracy and clarity of their English pronunciation and speaking ability. Students will learn how to evaluate their own speech in order to become more competent, self-assured speakers. *ESL students may use up to 6 credits of Intermediate and Advanced levels of ESL* *courses to fulfill the Modern Languages/Arts and Humanities elective requirements.*

**ESL\*H152 Reading and Writing V 6 credits**

*Prerequisite: "C" or better in ESL\*H142 or specified score on ESL placement exam.* In this low advanced course, students continue to refine reading comprehension and writing proficiency. Assigned readings (including whole works) as well as student writing provide the text for small group and class discussions. Through writing and rewriting essays, students work on organizational skills, development of ideas, clarity and the mechanics of effective writing. This course requires a minimum of twelve hours of outside work per week.

**ESL\*H155 Grammar V 3 credits**

*Prerequisite: "C" or better in ESL\*H142 or specified score on ESL placement exam*. In this low advanced course, key grammar structures will be learned and practiced through group discussions, oral and written exercises, and short writings. Use of grammar structures in authentic contexts will be emphasized. This course requires a minimum of six hours of outside work per week.

**ESL\*H157 Oral Communications V 3 credits**

*Prerequisite: "C" or better in ESL\*H142 or specified score on ESL placement exam.* In this low advanced course, fluency in oral communication and listening skills will be further developed. Communicative competency will be addressed in an authentic and meaningful setting. Taped lectures and conversations, oral presentations, interviewing, class and small group discussions, role playing and vocabulary development activities will enhance proficiency in English. This course requires a minimum of six hours of outside work per week.

**ESL\*H162 Reading and Writing VI 6 credits**

*Prerequisite: "C" or better in ESL\*H152/5152 or specified score on ESL placement exam.* In this high advanced course, students continue to develop fluency, clarity, organizational skills and the mechanics of effective writing with a focus on the linguistic and rhetorical requirements of second language learners. Course content and writing assignments are based on reading selections, complete works, and student texts. Students write, revise, and edit drafts participate in group work, and confer with teachers and peers. Successful completion of this course with a “C” or better will promote students to ENG 101. This course requires a minimum of twelve hours of outside work per week.

***Course***

***Descriptions***

**ESL\*H169 Writing VI 3 credits**

*Prerequisite: “B-“or better in ESL\*H152 or specified score on ESL placement exam. Co-requisite: ENG 101 Composition ESL ALP.* This course is designed for the advanced ESL student who would like to complete their ESL course sequence faster with the benefit of concurrently taking ENG 101 ALP course. This course is designed to refine students’ writing through intensive editing and revision practices focusing on using Academic Word List vocabulary and accurate grammar structure usage. Paraphrasing and summarizing academic texts are integral. In addition, students will read, critically assess and write responses to readings. This course requires a minimum of 6 hours of outside work per week.

# ENVIRONMENTAL SCIENCE

## Science, Technology, Engineering & Mathematics Division

**ENV\*H110 Environmental Regulations 3 credits**

A broad view of federal, state and municipal environmental regulations as they apply to industry, commercial establishments, local governmental facilities and the individual citizen. Provides a practical approach to regulatory understanding to enable one to plan an effective and economically sound management system. Course topics include the Clean Air Act (CAA), Clean Water Act (CWA), Toxic Substance Control Act (TSCA), SARA Title III (Community Right-to-Know), Resource Conservation and Recovery Act (RCRA) CT Transfer of Establishment Act (TASA) and federal, state and local regulations covering such topics as hazardous material transportation, in-ground tank storage and specific hazardous materials such as asbestos and PCBs. ISO 14,000 requirements will be discussed. (spring)

**ENV\*H120 Introduction to**

 **Hazardous Materials 3 credits**

Hazardous materials are associated with virtually all industrial activities. This course is designed for people who routinely come in contact with hazardous materials in the workplace. OSHA regulations, Material Safety Data Sheets (MSDS), toxicology, selection of protection equipment, ventilation and storage of hazardous materials will be covered. Fire, electrical, radiation and noise hazards will also be discussed. Students will use industrial supply catalogs, computers and the Internet to identify appropriate protective equipment for a range of hazardous materials. (offered periodically)

**ENV\*H205 Foundations of Environmental**

 **Chemistry 3 credits**

*Prerequisite: CHE\*H111 or 121*. The objective of the course is to study the chemical reactions in natural systems. The fate and transport of contaminants introduced into the environment by humans will be examined. Ways of analyzing for contaminants in the atmosphere, hydrosphere, and lithosphere will be identified and students will obtain practical experience with some of these techniques. Written lab reports will be required. Two class and two laboratory hours weekly. (offered periodically)

**ENV\*H240 Principles of Soil and**

 **Water Resources 3 credits**

The study of soil structure and various methods to reduce soil erosion. Discussion of soil chemical structure and its relationship to nutrient availability. Depletion of soil nutrients by leaching and excessive crop harvesting, and soil restoration will also be considered. The hydrologic cycle will be studied in detail, including surface water body and ground water characteristics. Soil chemical cycles for major plant nutrients and contaminants will also be investigated. A research paper is required. Three hours weekly. (fall)

# FINANCE

**Business Division**

 Refer to the Business Finance section.

# FIRE TECHNOLOGY AND ADMINISTRATION

## Business Division

**FTA\*H112 Introduction to Fire Technology 3 credits** This course provides an overview to fire protection and emergency services; career opportunities in fire protection and related fields; culture and history of emergency services; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics; life safety initiatives.

**FTA\*H116 Building Construction 3 credits** *Corequisite: FTA\*H112.* This course provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

**FTA\*H118 Fire Prevention and Inspection 3 credits** *Corequisite: FTA\*H112.* This course provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigation.

**FTA\*H122 Fire Behavior and Combustion 3 credits**

This course explores the theories and fundamentals of how and why fires start, spread, and are controlled.

**FTA\*H126 Safety and Survival 3 credits**

This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services.

**FTA\*H130 Fire Technology and Administration Tech-Prep Internship 3 credits**

This course is a directed study and service opportunity for those in a Tech-Prep program. It is designed to allow the participant to develop an awareness of the fire service and provide a service opportunity benefiting both the student and the community. To participate, a student, at a minimum, must be part of a Junior/Cadet/ Apprenticeship/Probationary program sponsored by a fire, rescue, emergency medical service or fire marshal’s office. To obtain college credit for this program, the student must participate in the Tech-Prep program as prescribed for his/her high school. Credit for this course will not be granted separately. The student will be assigned a mentor from his/her sponsor and the Fire Technology and Administration program of Naugatuck Valley Community College. The student will be required to complete a project designed by the Department and agreeable to the mentor from Naugatuck Valley Community College. In addition, the student will be required to complete at least two assignments one of which will be in support of the major project. Prior to the start of the program the student will be assisted in developing his/her program and what specifically will be required to obtain credit.

**FTA\*H210 Water Supply and Hydraulics 3 credits** *Corequisite: MAT\*H167 or MAT\*H172.* This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems..

**FTA\*H216 Municipal Fire Administration 3 credits** *Prerequisite: FTA\*H112*. This course introduces the student to the organization and management of a fire and emergency services department and the relationship of government agencies to the fire service. Emphasis is placed on fire and emergency service, ethics, and leadership from the perspective of the company officer.

**FTA\*H218 Fire Protection Systems 3 credits** *Prerequisite: FTA\*H112.* This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.

**FTA\*H219 Fire Investigation 3 credits**

*Prerequisite: FTA\*H116. Corequisite: CHE\*H111 or Instructor Approval.* This course is intended to provide the student with the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the fire setter, and types of fire causes.

**FTA\*H272 Terrorism - First Responders 3 credits** Many of the principles that apply to Haz Mat, EMS, and crime scene responses also apply at WMD responses. This course will provide additional information to help the First Responder understand informed, controlled, and safe responses to incidents involving weapons of mass destruction. 3 contact hours.

# GEOGRAPHY

## Liberal Arts and Behavioral/Social Sciences Division

**GEO\*H102 Introduction to Human Geography 3credits**

This course is a study of interrelationships between the physical Environment and human activity with special emphasis on geographic factors which underlie current political, social, and economic problems.

**GEO\*H111 World Regional Geography 3 credits**

The interaction of the physical Environment with the social, cultural, political, and economic conditions in various regions of the world, and the diverse patterns of human activity which emerge from the interplay of these forces are examined. The course is organized on natural regions such as Anglo-America, Latin America, Europe, the Middle East, Africa, and the Pacific World.

# GEOLOGY

## Science, Technology, Engineering & Mathematics Division

**GLG\*H121 Introduction to Physical Geology 4 credits** *Prerequisite: Completion of MAT\*H094/095 with a "C" or better, or an appropriate score on a college placement exam and eligibility for ENG\*H01.* This course will be devoted to the study of the processes involved in the formation of the earth’s crust. A study of earthquakes, volcanoes, mountain building, minerals, oceans, continental drift, and erosion by wind, water, and ice will be explored. Three hours lecture and three hours laboratory weekly. Some field trips may be included. (fall)

# GRAPHIC DESIGN

**Liberal Arts and Behavioral/Social Sciences Division**

 Refer to Art.

# HEALTH

**HLT\*H103 Investigations in Health Careers 3 credits**

This course is designed to assist students in meeting the expectations of a health care curriculum and career. The students will become familiar with the rigors of higher education and the specific skills needed to maximize their opportunity for academic and clinical success. The course will include a comprehensive overview of the duties and responsibilities associated with clinical competency. Interdisciplinary learning strategies, correlating clinical and didactic education, life management skills, work ethics, and critical thinking skills necessary for all health providers will be emphasized.

# HISTORY

## Liberal Arts and Behavioral/Social Sciences Division

**HIS\*H101 Western Civilization I 3 credits** *Prerequisite: Eligibility for ENG\*H101.* Students may not receive credit for HIS\*H104 or 121 in addition to HIS\*H101. This course is an issue-oriented course of Western Civilization from the Ancient World to 1715 from a contemporary perspective. Topics selected on the basis of significance and relevance will include oriental despotism, the origins of political democracy, concepts and codes of justice, the first federal empire, feudalism and the emergence of secular nation – states, and the Renaissance and Reformation – as seen through the eyes of statesmen, philosophers, religious leaders, writers, artists, scientists, etc. of their day.

**HIS\*H102 Western Civilization II 3 credits** *Prerequisite: Eligibility for ENG\*H101. Students may not receive credit for His\*H104 or 122 in addition to His\*H102.* This course is an issue-oriented study of Western Civilization from 1715 to the present from a contemporary perspective. Topics, selected on the basis of significance and relevance, will include change through revolution and evolution, industrialization and class conflict, individualism and collectivism, nationalism and imperialism, war and peace, totalitarianism, and the ecumenical spirit – as seen through the eyes of statesmen, philosophers, religious leaders, writers, artists, scientists, etc. of their day.

**HIS\*H121 World Civilization I 3 credits**

*Students may not receive credit for HIS\*H101 or 104 in addition to HIS\*H121.* A study and appreciation of African, European, and American civilizations, and their interaction with each other up to 1600.

**HIS\*H122 World Civilization II 3 credits**

*Students may not receive credit for HIS\*H102 or 104 in addition to HIS\*H122.* A study and appreciation of African, European, and American civilizations, and the increasing interdependence from 1600 to the present.

**HIS\*H123 Contemporary Issues in**

 **World Civilization 3 credits**

In-depth studies of some of the major problems that confront the world today are presented. Course content is likely to vary from one semester to another in order to keep up with the changing complexion of the world’s problems.

**HIS\*H124 Women of the World 3 credits**

This course is a study of women as driving forces in history and women driven by historical forces. Portraits of outstanding historical and contemporary female personalities – pagan priestesses and goddesses, women poets, scientists, educators, healers and reformers are presented.

**HIS\*H201 U.S. History I 3 credits**

*Prerequisite: Eligibility for ENG\*H101.* This course is essentially a chronological treatment of the social, economic, political and cultural development of the American people to 1865. Certain topics such as colonial life, the Revolution, the political thought of Hamilton and Jefferson, reform, slavery, abolition, and the Civil War are studied in depth.

**HIS\*H202 U.S. History II 3 credits**

*Prerequisite: Eligibility for ENG\*H101.* The course is essentially chronological in its treatment of the period from 1865 to the present. Certain topics in the social, economic, political, and cultural development of the American nation, such as the Age of Industrialization, International Relations and World War I, the Depression and New Deal, World War II and postwar period including the Cold War, the Eisenhower Era, the Sixties and Vietnam are studied in depth.

***Course***

***Descriptions***

**HIS\*H210 History of Colonial America 3 credits**

This course addresses the social, economic, political, and cultural development of the people of the British North American Colonies to 1783. Topics covered in this course will include the Americas prior to European colonization, early European exploration and settlement in the Americas, relations between Great Britain and the American colonies, the background and causes for the American Revolution, the development and operation of the American national government, and development of an American society/culture.

**HIS\*H213 The United States Since World War II 3 credits** This course addresses the social, economic, political and cultural development of the United States between 1920 and the present. Topics covered in this course will include the culture and economy of the 1920s, the Great Depression and the New Deal, World War II, the Cold War, the Korean War, American society in the 1950s, the Civil Rights Movement, the Women’s Rights Movement, the war in Vietnam, the Counterculture of the 1960s and ’70s, the Reagan and Bush eras, the end of the Cold War, and the Clinton era.

**HIS\*H215 History of Women in the US 3 credits** This course will examine the position of women in the United States from the late nineteenth century to the present. Topics of study will include the origins and issues of the women’s movement in the nineteenth century, women’s suffrage, the women’s movement in the 1960’s and 1970’s, women and the law, women and patterns of work, women and business, women and religion, women and athletics, women and homemaking, women and assertiveness, women and sexuality, women and aging, women and divorce, and women and affirmative action.

**HIS\*H218 African-American History 3 credits** This course will utilize historical, sociological, and cultural perspectives in the analysis of the current status of African-Americans in the United States. The quest for equality, problems and prospects, and the role of African-Americans in the development of American and world cultures will be explored.

# HONORS

## Academic Affairs

**HON-H200 Honors Special Topics Seminar 3 credits**

*Prerequisite: Member of Honors Institute. "B" or better in ENG\*H101 and MAT\*H137.* In this course Honors students will examine a current, "real world" topic from an interdisciplinary perspective. Each student will produce a final research, design, or artistic product that demonstrates independent exploration of the topic. Required for honors designation. Topic varies each semester.

# HORTICULTURE

## Science, Technology, Engineering & Mathematics Division

**HRT\*H101 Landscape Construction 4 credits**

This course provides applied experiences in assorted construction techniques necessary in the development of landscapes. Included are a survey of construction materials, deck design and construction, patio and walkway installation, stone wall construction, fencing, retaining wall design and construction. Earthwork calculations, measuring and materials estimating are included. Actual field exercises will be provided. (fall)

**HRT\*H102 Woody Plants 3 credits**

This is a basic introduction to common desirable, deciduous and evergreen trees, shrubs and vines for the natural and cultivated landscape. The course emphasizes identification as well as learning the attributes, growth habits and cultural needs of the plants. Nomenclature and fundamental tree biology are discussed. (fall)

**HRT\*H103 Herbaceous Plants 3 credits**

This course provides instruction in the identification and selection of annual and perennial herbaceous plants for various habitats. Students will develop an understanding of the plants’ ornamental value in garden and landscape design, based on flowers, foliage, form and adaptability to the environment. (spring)

**HRT\*H105 Fruit and Vegetable Production 3 credits**

Primarily a course for residential vegetable and fruit cultivation, the course provides basic knowledge and methods that can be applied on the commercial level as well. Included are topics on site selection and soil preparation, planting, pruning, fertilization and general cultivation of vegetables, small bush and large tree fruits. (offered periodically)

**HRT\*H106 Fruit Production 3 credits**

This course will cover the current principles and cultural practices of tree, bush, and vine fruit crop production. The course provides basic knowledge and methods that can be applied on the commercial and residential level. Included are topics on site selection and soil preparation, planting, pruning and fertilization and general cultivation of a variety of fruiting plants. Site visits to fruit production sites will be included. Lecture and lab.

**HRT\*H107 Vegetable and Herb Production 3 credits**

This course will cover the current principles and cultural practices of traditional and hydroponic vegetable crop production. The course provides basic knowledge and methods that can be applied on the commercial and residential level. Included are topics on site selection and soil preparation, planting, pruning and fertilization and general cultivation of a variety of vegetable plants. Site visits to agricultural businesses will be included. Lecture and lab.

**HRT\*H115 Turf Management 3 credits**

The establishment and maintenance of turf grass are studied in the course. Lawn, golf course, and athletic field care are emphasized. Students will also learn to identify the turf grasses, identify and control weeds, insects, pests and diseases. (offered periodically)

**HRT\*H124 Floral Design I 3 credits**

The basic principles of design as applied to the art of floral arranging are examined and flower shop management operation. (offered periodically)

**HRT\*H202 Landscape Design I 3 credits**

*Pre-requisite: HRT\*H102.* This course provides students with the basic knowledge and skills to create a successful landscape plan. Starting with the proper placement and design of driveways and walkways, it guides the student through the stages of developing an entire residential property. Appropriate plant selection is based on site characteristics and design principles and elements. (spring)

**HRT\*H203 Landscape Design II 3 credits**

*Prerequisite: HRT\*H202 or permission of instructor.* This course is designed as a continuation of HRT\*H202. This course will aid students in developing skills in perceptual design, job bidding, as well as give an introduction to computer aided drafting, as related to horticulture landscaping. (offered periodically)

**HRT\*H204 Computers in Landscape Design 3 credits**

This course is an introduction to utilizing computer applications in the landscape design profession. Material will cover the development of two-dimensional base plans, three-dimensional models, and two dimensional renderings. Also, examples of real-life projects will be highlighted to illustrate the transition from computer drawings to construction. The student will develop a working knowledge of AutoCad, ProLandscape, Google Sketchup, and Adobe Photoshop. (offered periodically)

**HRT\*H206 Landscaping Small Properties 3 credits**

This course complements and enhances HRT\*H202, Landscape Design. It covers the evolution of garden design, an analysis of color relationships in design, and how to plan different kinds of gardens.

(offered periodically)

**HRT\*H207 Landscape Maintenance 3 credits**

This course is designed to assist the professional and amateur landscape gardener to maintain their gardens through an understanding of plant growth, pruning, nutrition, propagation, etc. The course also includes landscape estimating. (fall)

**HRT\*H215 Integrated Pest Management 3 credits**

This course reviews the concepts, principles, development and application of Integrated Pest Management (IPM) systems in the commercial horticultural field. IPM constitutes a series of pest control strategies that are more sustainable toward agriculture, natural resources, and urban health. This course will also provide an overview of all of the subjects that the student will need to be familiar with in order to pass the State of Connecticut Custom Grounds Supervisory Pesticide Applicators License Examination.

**HRT\*H219 Arboriculture 3 credits**

This course is designed to prepare landscapers for the State Arborist Exam. Topics include the biology, identification, selection, planting, management, preservation of trees and diagnosis of tree problems. It is recommended that if students lack extensive work experience they should have taken HRT\*H102 (Woody Plants) and HRT\*H215 (Pest Control) before taking the State Arborist Exam. (offered periodically)

**HRT\*H222 Greenhouse Operations & Management 4 credits** This course focuses on the selection, production and management of greenhouse and bedding plants, interior plantscape management and design, management of annuals and perennials. Plant physiology is related to the Environmental effects on plant growth. (fall/spring)

**HRT\*H223 Greenhouse Management II 4 credits**

*Prerequisite: HRT\*H222 or permission of instructor.* This course is a continued in-depth study of the commercial greenhouse industry. It is a complement to HRT\*H222. Included in the course is an indepth look at the production of greenhouse crops, disease, and insect control. Interior plant maintenance, soils testing, and development of production programs with the use of computer aided programs will be used to better understand plant growth. (offered periodically)

**HRT\*H224 Plant Propagation & Hybridization 4 credits** This course is an in-depth study of the world of plant reproduction and genetics. This course is a complement to other courses offered in the Horticulture degree and certificate program. This course will give students the theoretical and practical skills needed to reproduce plants asexually, and through micropropagation. Included will be the use of the college propagation facilities to facilitate learning. (offered periodically)

**HRT\*H240 Nursery Management 3 credits**

*Pre-requisites: HRT\*H102 Woody Plants and HRT\*H103 Herbaceous Plants or permission of program coordinator.* This course provides a basic understanding of how to start and manage a commercial plant nursery. Site and crop selection, irrigation and nutrition management will be addressed. Students will study the principles and practices of nursery crop production as well as fundamental business organization and marketing. Course activities include field trips to nursery sites. (offered periodically)

**HRT\*H290 CWE/Horticulture Co-Op 3 credits**

*Prerequisites: 12 credits in Horticulture, “C” or better, and permission of Horticulture Coordinator, or Division Leader.* This course involves a work experience, special project, independent study or course substitution which will vary according to the student’s needs and interests. A written report and weekly journal will be required and evaluated at the end of the course. Conferences among students, work study supervisory agency, and faculty facilitator will be held during the semester. A two hour orientation/planning workshop at the beginning of the Co-Op is required. (summer)

***HOSPITALITY MANAGEMENT:***

# FOODSERVICE MANAGEMENT HOTEL MANAGEMENT

## Business Division

**HSP\*H100 Introduction to the**

 **Hospitality Industry 3 credits**

An orientation to the business of hospitality and its various systems including restaurants, hotels, and institutions. The course surveys the hospitality industry’s history, current business and career trends, operations management and organization, and forces shaping the future of the industry and its place in the economy.

**HSP\*H101 Principles of Food Preparation 3 credits**

A laboratory course which teaches the theory and develops skills in basic cooking methods and culinary techniques in the production of soups, salads, vegetables, stocks, and sauces. Meats, poultry, and seafood are prepared employing standard techniques with special attention to commercial and quality production. Tool and equipment use, weights, measures, and recipe conversion are discussed and practiced.

**HSP\*H102 Food Production and Purchasing 3 credits**

*Prerequisite: HSP\*-H101*. A continuation and application of the culinary techniques and knowledge acquired in HSP\*H101 through the planning and preparation and group service of advanced menus. Discussion of meat, poultry, and fish identification, fabrication, and purchasing specifications, as well as food costing and menu pricing.

**HSP\*H103 Principles of Baking I 3 credits**

This course takes an expansive view of baking and pastry. Students will learn the basic principles of baking through lecture, demonstrations, assignments, and hands-on participation. Technique will be emphasized. Kitchen math, weights and measurements, quality and cost control, and sanitation will be incorporated into each lesson. Students will explore basic baking ingredients and their important characteristics in relation to baked goods. Recipes, both sweet and savory, will include various doughs and their accompanying fillings; pies and tarts; cakes, icings, and fillings; cookies and petit fours; pâte à choux; creams, custards, and mousse; and chocolate desserts.

**HSP\*H108 Sanitation and Safety 3 credits**

An in-depth coverage of commercial foodservice sanitation **resulting in SERVSAFE® Qualified Food Operator certification as required by Connecticut law.** Included are proper food handling procedures in receiving, storage, preparation, purchasing and service, as well as staff training and quality control SERVSAFE® Alcohol Certification also provided.

### HSP\*H109 Food Safety Certification (8 weeks) 1 credit

*Not open for credit for students who have successfully completed HSP\*H108.* Designed for the non-degree students employed in the foodservice industry. Aspects of applied commercial foodservice sanitation resulting in nationally recognized SERVSAFE® Qualified Food Operator certification as required by Connecticut law. Prevention of food-borne illness, sanitary procedures in the protection and service of food to the public, laws and regulations, sanitary design and employee training will be discussed. Eight weeks.

**HSP\*H125 Wine and Viticulture I 3 credits**

Botanical study of the grape (vitis) and principles of enology (wine making) are studied and practiced. Students also explore viticultural (grape growing) techniques used throughout the world. Wine tasting sessions included. *Per Connecticut State Law, persons under the age of 21 are not allowed to consume alcoholic beverages.*

**HSP\*H126 Wine and Viticulture II 3 credits**

An in-depth coverage of the science and art of growing grapes, including all aspects of the physical vine life cycle and cultural considerations throughout human history. Other topics include biology, anatomy, climatic influences, and varietal and hybrid growing characteristics. Further instruction and practice in winemaking is offered. *Per Connecticut State Law, persons under the age of 21 are not allowed to consume alcoholic beverages.*

**HSP\*H135 Service Management 3 credits** An exploration of “front of the house” hospitality operations, including styles and standards of dining room, lounge, and concierge services as well as dining room organization, customer relations, merchandising and sales promotion. Special emphasis is placed on manager/supervisor functions such as training, motivation, cashiering, revenue control and wine stewardship. Students will serve guests as the schedule dictates. Schedule adjustments may be requested to accommodate guest service.

***Course***

***Descriptions***

**HSP\*H202 Catering and Event Management 3 credits** *Prerequisites: HSP\*H101, 102.* A lecture/laboratory practicum emphasizing the management and planning of catering, banquet and conference service with in-depth discussion of the meetings market and technology. Advanced culinary preparations will be practiced, stressing group service.

**HSP\*H211 Food and Beverage Cost Control 3 credits**

*Prerequisites: CSC\*H101 or CSA\*H105, HSP\*H100, HSP\*H101, MAT\*H095 or equivalent, or consent of Program Coordinator.* An in-depth study of the control function of the hospitality manager and its various applications in the purchasing, receiving, storing, issuing, production and sale of food and beverage. Operational planning and analysis, labor and labor cost control, and cost/volume/profit relationships are explored. This course may result in nationally recognized certification upon successful performance on certification examination.

**HSP\*H215 Principles of Baking II 3 credits**

This course expands on the basic techniques and principles of Baking 1, though it is not a prerequisite. Students will learn the more advanced baking procedures and their applications through lecture, demonstrations, assignments, and hands-on execution of recipes. Participation and proper technique and method are emphasized. Kitchen math, particularly baker’s percentages, weights and measurements, quality control, and sanitation will be incorporated into each lesson. Baking as science will also be explored including the chemistry of the ingredients, techniques, and methods and their interactions. Students will learn to understand the structure of recipes. Recipes, will included classic and modern preparations of advanced pastries such as petit fours, choux paste, laminated doughs, and chocolate work. Sugar techniques will be included. Students will learn finishing and plating and dessert artistry.

**HSP\*H216 Artisan Bread 3 credits**

This course will serve as an introduction to hand crafted bread, using ferment & fresh yeast methods, with emphasis on understanding the chemical reactions among ingredients. Creativity and presentation of finished product will be highlighted. Students will be taught through lecture, demonstrations, assignments and active participation. Kitchen math, weights and measurements will be discussed throughout the course.

**HSP\*H237 Hospitality Marketing 3 credits**

*Prerequisite: HSP\*H100.* An analysis of the services market with regard to hotel and restaurant marketing and methods of advertising, promotion, public relations, pricing, and discussion of strategic planning and positioning.

**HSP\*H241 Principles of Travel and Tourism 3 credits** A survey of today’s travel industry and its primary segments, including recreation and leisure systems, the transportation and accommodation industries, destination development and characteristics of the travel market. The role and function of the travel agency and career opportunities will be explored.

**HSP\*H242 Hotel Management 3 credits**

A study of hotel and motel front office systems and procedures, including organization, business flow, reservations and rooming, guest accounting, and security. Management functions and operating statistics are discussed and practiced.

# HUMAN SERVICES

## Liberal Arts and Behavioral/Social Sciences Division

**HSE\*H101 Introduction to Human Services 3 credits** This course offers an introduction to the Human Services field, including the history of the various service professions, an overview of the primary populations that receive services, information about a variety of mental health and social service agencies, and a discussion of successful treatment methods. This is the foundation course of the three core program courses. (fall/spring)

**HSE\*H115 Child Advocacy in**

 **Human Services 3 credits**

The course presents concepts, policies, and practice in the broad field of child and family services and advocacy. Among the topics to be examined are the needs of children and families, the major policies and programs of social services designed for children and families, and the policy issues that emerge for planning for children and families. The intent of the course is to provide the student with a substantive base of knowledge about policies and practice in family and child services. Students will be helped to develop an overall orientation to family - as a unit of attention, as well as to the emerging service concerns of family support, family preservation, the need for continuity of family relationships, and to the various culturally competent approaches. (spring)

**HSE\*H133 Disabilities and Mental Health 3 credits**

This is a required course for all Human Services students wishing to pursue the Disabilities Specialist/Mental Health Option. This is an introductory course in disabilities and mental health. Its primary purpose is to familiarize students with both developmental and mental disabilities from childhood to adulthood. It examines the impact of physical and mental disabilities, major legislation, ethics, advocacy, medical and psychological concerns, rehabilitation, employment, social planning, and living and working in society for children and adults with disabilities and mental health issues. The physical and psychosocial aspects of developmental disability and mental health also are studied through a focus on education, family life, community, and values. (fall)

**HSE\*H170 Introduction to Gerontology 3 credits** The course examines the biological, social, and psychological aspects of aging and the problems that are experienced by the aged in America. It explores the local, state, and federal programs and services available to the elderly and the caregiver. Topics covered include Alzheimer’s Disease, Medicare, Social Security, living wills, and Hospice vs. home care issues. (fall)

**HSE\*H171 Death and Dying**

 **(also listed as SOC\*H225) 3 credits**

An exploration of the stages of death and dying. Special emphasis will be placed on understanding grief and loss. The course will focus on the following: the dying person, sudden death and the effect on the family, cultural and economic issues, the broad moral aspects of death, and other related problems. (spring)

**HSE\*H202 Introduction to Counseling**

 **and Interviewing 3 credits**

*Prerequisite: HSE\*H101 with a grade of “C” or better.* This is a systematic study of the basic principles, methods, and current techniques employed in assessment, planning, interviewing, counseling, contracting, and interventions. The course develops student self-awareness of personal values and professional ethics. Students are expected to learn through theory, examination of their own values, and classroom application of interactional skills. (fall/ spring)

**HSE\*H281 Human Services Field Work I 3 credits** *Prerequisites: HSE\*H101, HSE\*H202,with a grade of “C” or better. Successful completion of 6 credit hours in Behavioral Sciences, ENG\*H101, or permission of the Human Services Coordinator or Division Leader.* Work experience in a human service agency is a major component of this required course. The student will have the opportunity to apply the values, concepts, and skills acquired in the introductory and other HS courses. This activity will be conducted under the supervision of the faculty coordinator and the professionals in the agencies in which the students are placed. (fall/ spring) The course consists of **1.**160-hour Field Work Experience **2.** Weekly Field Work Seminar that links field practice to issues related to working within a wide variety of community agencies. (fall, spring)

# HUMANITIES

## Liberal Arts and Behavioral/Social Sciences Division

**HUM\*H130 Philosophy and Practices of Yoga 3 credits**

This course investigates the philosophy of yoga, its origins, and its place in our contemporary lives. It teaches the different aspects of yoga and areas of study that encompass the foundational principles of the discipline. Students will learn the basic poses as well as meditation and breathing techniques.

# INTERDISCIPLINARY STUDIES

## Liberal Arts and Behavioral/Social Sciences Division

**IDS H101 First Year Experience 1.5 credits** The First Year Experience introduces students to diverse academic content, emphasizing the acquisition of learning strategies in preparation for rigorous college study. The content is designed to help students make a smooth transition to college. This course focuses on developing creative and critical thinking skills, developing information literacy and technology skills, improving written and oral communication, setting personal and academic goals, developing structured and consistent study habits, practicing effective time management, and becoming contributing members of the NVCC community. In addition, students will develop a comprehensive academic and career development plan leading to graduation. The course is required of all matriculating first-time, full-time students. There are no prerequisites.

# ITALIAN

**Liberal Arts and Behavioral/Social Sciences Division**

 Refer to Languages.

# LANDSCAPING

**Business Division**

Refer to Horticulture.

# LANGUAGES

## Liberal Arts and Behavioral/Social Sciences Division

**ITA\*H101 Elementary Italian I 3 credits**

This course focuses on the basic acquisition of the four skill areas (speaking, listening, reading, writing) for survival communication. There is constant exposure to the cultural diversity of the Italian world using audio and video tapes. Knowledge of the language and culture is further enhanced by the technological component which requires students to use the Internet for various class activities. ***Note: ITA\*H101 is not open to students who have successfully completed three years of Italian courses in high school or who are native speakers except by consent of the Associate Dean of LABSS.***

**ITA\*H102 Elementary Italian II 3 credits**

*Prerequisite: ITA\*H101 or permission of the Associate Dean of LABSS.* ITA\*H102 is a continuation of the skills taught in ITA\*H101. Emphasis is placed on a more fluid style of communication at all skill levels.

**ASL\*H101 American Sign Language I 3 credits**

This course is designed to provide an introduction to American Sign Language (ASL), the language used by the deaf community in the United States. ASL introduces students to the fundamental of ASL grammar, vocabulary, fingerspelling, numbers, and visual-gestural communication. The introduction of deaf culture is integrated into this beginning-level course.

**ASL\*H102 American Sign Language II 3 credits**

*Prerequisite: ASL\*H101.* This course is designed to continue to reinforce American Sign Language, the language used by the deaf community in the United States. This course continues with enabling the student in becoming more engaged with the use and content of ASL in the conversational setting. The continuation will provide the student with the skills necessary both receptively and expressively to appreciate and understand and utilize the language in its structure and format. Emphasis will be on vocabulary, ASL grammar, Deaf Culture and conversational skills.

**SPA\*H101 Elementary Spanish I 3 credits**

This course focuses on the basic acquisition of the four skill areas (speaking, listening, reading, writing) for survival communication. There is constant exposure to the cultural diversity of the Hispanic world using audio and video tapes. Knowledge of the language and culture is further enhanced by the technological component which requires students to use the Internet for various class activities. ***Note: SPA\*H101 is not open to students who have successfully completed three years of Spanish courses in high school or who are native speakers except by consent of the Associate Dean of LABSS.***

**SPA\*H102 Elementary Spanish II 3 credits**

*Prerequisite: SPA\*H101 or permission of the Associate Dean of LABSS.* SPA\*H102 is a continuation of the skills taught in SPA\*H101. Emphasis is placed on a more fluid style of communication at all skill levels.

**SPA\*H201 Intermediate Spanish I 3 credits**

*Prerequisite: SPA\*H102 or permission of the Associate Dean of LABSS*. This course is an intermediate Spanish course on the college level. Non-native and native speakers may enroll for credit in this course. The natural approach will be used in developing the four communication skills (listening, speaking, reading and writing). Students will study structure and grammar, read, converse, discuss and write in Spanish. A broad survey of Hispanic culture and custom will be presented.

**SPA\*H202 Intermediate Spanish II 3 credits** *Prerequisite: SPA\*H201.* This course is a continuation of the skills taught in SPA\*H201. The natural approach will be used. Grammar and structural studies will continue, but emphasis will be placed on reading, writing, speaking and listening with content based on civilization and cultural topics. Practice on oral tapes is required.

# LATINO AMERICAN STUDIES

## Liberal Arts and Behavioral/Social Sciences Division

**LAS\*H201 Latino American Studies 3 credits** *Prerequisite: ENG\*H101 with a grade of "C" or higher.* This course provides an introduction to the history, literature, ethnicity, culture and socio-economies of Latinos in the United States.

# LEGAL ASSISTANT/PARALEGAL

## Business Division

**LGL\*H101 Introduction to Paralegalism 3 credits** This course is an introduction to various aspects of the law, including but not limited to torts, contracts, criminal law and procedure and constitutional law. The course also surveys the structure and procedure of a number of court systems in the United States, and includes discussions of some topics of concern to the paralegal, including legal ethics, the rights of the elderly, the poor, the young and other disadvantaged minorities.

**LGL\*H102 Legal Research and Writing 3 credits**

Selected topics to develop skills in the use of legal encyclopedias, digests, reports, statutes, restatements, law reviews, and other research materials used by the legal profession are presented as an introduction to the uses of the law library. It is necessary that students do much of their legal research assignments in one of the many state or university law libraries located at various places throughout Connecticut. Students who are unable to devote several hours of research per week in one of the law libraries are advised not to enroll in LGL\*H102.

***Course***

***Descriptions***

**LGL\*H104 Real Estate Practice 3 credits**

This course is an introduction to the law of real property, and includes the preparation and recording of deeds, easements, leases and other public documents, in addition to a large variety of other documents, forms and procedures that a paralegal will encounter in real estate practice.

**LGL\*H204 Criminal Procedure 3 credits**

This course enables the student to utilize the classroom as a learning law laboratory since it will explore the Bill of Rights and the Fourteenth Amendment in detail as well as the entire United States Constitution. Constitutional law cases will be studied in the context of criminal procedure issues evolving from the precedents set by the United States Supreme Court.

**LGL\*H206 Bankruptcy Law 3 credits**

This course will provide students with a thorough review of the United States Bankruptcy Code. The course is tailored to explore the general functions of the Bankruptcy Court. The applicable rules and proceedings for various types of bankruptcy cases will be thoroughly discussed.

**LGL\*H208 Litigation 3 credits**

As an introduction to civil and criminal procedures, this course includes a survey of the functions of the federal and state court systems. The preparation of documents relative to the trial and appellate process is examined.

**LGL\*H209 Probate Practice and Estate Administration 3 credits**

This course is an introduction to the law of wills, trusts and estates, and includes the law of intestate succession as well as a survey of the probate system. This course will help to prepare the paralegal to become familiar with the various forms and documents associated with probate and estate practice.

**LGL\*H210 Family Law 3 credits**

This course will provide a strong background in the area of family law, with special emphasis on family law practice, including litigation. Other family law topics such as adoption, custody, community property, and child support are thoroughly investigated.

**LGL\*H230 Advanced Legal Issues Seminar 3 credits** This course will be taught as a seminar and through a series of lectures. A guest speaker is also likely to participate. The problem-solving method will be used to examine critical issues in the wake of current legal events and new trends in the law.

# MANAGEMENT

**Business Division**

 Refer to the Business section.

# MANUFACTURING

## Science, Technology, Engineering & Mathematics Division

**MFG\*H104 Manufacturing Processes 4 credits** Students study the theoretical concepts involved in the process of manufacturing parts as well as the development of the knowledge and skills required in the manufacturing process. Laboratory study emphasizes Milling, Drilling, Turning, Grinding & other manufacturing processes. Laboratories will involve setup and procedures for various manufacturing processes. Three class and two laboratory hours weekly. (fall/spring)

**MFG\*H105 Manufacturing Math II 3 credits**

*Prerequisites: Completion of Machine Technology Level I Certificate or with consent of instructor, MFG\*H051: Manufacturing Math I (non-credit).* Second course in manufacturing mathematics. A further study of arithmetic and trigonometric operations applied to manufacturing circumstances. The following geometric entities are studied in detail: the circle, regular and irregular polygons, the right triangle and oblique triangles. The application of angular arithmetic including the study of: angle decimal conversion, the Pythagorean theorem, Sin, Cos, and Tan functions, and the Law of Sines and Law of Cosines. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H106 Computer-Aided Manufacturing I 3 credits** *Prerequisite: MFG\*H104.* Basic CNC setup and operations with an introduction to automation programming, and tooling for CNC applications will be discussed. Basic functions using industry standard PLC controls will also be covered. Laboratory will include practice in setup and operation of CNC lathes and milling machines. Two class hours and two laboratory hours weekly. (fall)

**MFG\*H124 Blueprint Reading I 2 credits**

First course in blueprint reading. The study of orthographic projection. Topics include lines and their uses, auxiliary views, sectional views, basic and special dimensioning, dimensioning practices for holes, chamfers, angle, tapers, keyways diameters and radii. Also, geometric tolerancing and dimensioning is covered. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H126 Drafting 3 credits**

An introduction to drafting as a technical language. Topics included are: use of the drafting instruments, geometric constructions, orthographic projection, pictorials, sectional views, and descriptive geometry as it relates to auxiliary views and developments. Emphasis will be placed on developing traditional board drafting techniques and geometric constructions. (offered periodically)

**MFG\*H125 Blueprint Reading II 3 credits**

*Prerequisite: Completion of Machine Technology Level I Certificate or with consent of instructor, MFG\*H124: Blueprint Reading I.* Second course in blueprint reading. A further study of simple and complex drawings for machining or assembly purposes. Topics include the application and meaning of geometric characteristics and controls, the metric system, weldment, forging and casting drawings and procedures, communication with freehand sketches, blueprint terms and abbreviations. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H151 Manufacturing Machining:**

 **Drill Press and Saw 1 credit**

Course on sawing and drilling machines. Topics covered include use of cutoff saws, use of drill presses, using the vertical band saw, drilling tools, countersinking, reaming and counter boring. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H152 Manufacturing Machining: Grinding 2 credits** Course on the use of various grinding machines. Topics covered include selection and identification of grinding wheels, truing, dressing and balancing wheels, grinding fluids, using the horizontal spindle reciprocating table surface grinder, using the cylindrical grinder, and using the tool and cutter grinder. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H153 Manufacturing Machining:**

 **Bench Work 2 credits**

A basic course in the fundamentals, principles, practices and tools used in semi-precision and precision layout and in the various methods, and procedures for common machine shop bench work. Topics include measurement systems, layout principles, hand tools, and power tools. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H154 Manufacturing Machining: Lathe I** **2 credits**

First course in the use of the lathe. Topics include identification of major components of the lathe, tool holders and tool holding, cutting tools, operating the controls, facing and center drilling. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H155 Manufacturing Machining - Milling I 2 credits** First course on the vertical and horizontal milling machines. Topics to include cutting tools and holders, setups, spindles and arbors, work holding methods. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H156 Manufacturing Machinery - CNC I 2 credits**

First course in CNC machinery and programming. Topics include Cartesian coordinates, safe use of CNC equipment, setup and operate a two axis CNC lathe and a three axis CNC machining center, programming and runoff of parts. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H171 Introduction to Lean Manufacturing 3 credits**

The purpose of this course is to provide the student with the fundamental knowledge of current continuous process improvement methodologies in use today within competitive manufacturing environments. This introductory course will expose the student to the basic concepts of Lean Manufacturing theory and the various tools and techniques involved with a lean implementation. This course will be presented following the lean-six sigma process methodology of DMAIC (Define, Measure, Analyze, Improve, and Control) to ensure that at the completion of the course, the student will be competent to participate effectively as a team member in lean implementation projects. (offered in fall in odd-numbered years)

**MFG\* H172 Introduction to Lean Supply**

 **Chain Management 3 credits**

This course is an introduction to the basic principles and methodologies of Supply Chain Management. The course reviews the lean principles needed to understand and maintain the supply chain. Key concepts are covered such as Value Stream Mapping, customer/supplier roles, supplier types, metrics, quality systems, quality audits, communication, and information flow. Class activities, group assignments, and case studies are emphasized for real-world learning experiences. (offered in fall in even-numbered years)

**MFG\*H200 Manufacturing Management 3 credits**

This course introduces the student to the structure and organization of manufacturing management in an industrial society. The role of various management functions including strategic planning, industrial cost accounting, inventory management, and quality control will be studied. Three class hours weekly. (offered periodically)

**MFG\*H201 Computer-Aided Manufacturing II 3 credits** *Prerequisite: MFG\*H106.* This course discusses CNC programming, analog programmable logic control programming, and interfacing controllers, and machine tools. Laboratory practice in writing CNC programs, robotics programming and interfacing, and analog programmable logic controller programming will be studied. Two class and two laboratory hours weekly. (spring)

**MFG\*H210 Materials of Engineering 4 credits** *Prerequisites: MFG\*H104, CHE\*H111.* Study of the structure and properties of engineering materials. Materials selection, processing and heat treatment are studied. The changes in structure and properties during forming, machining, and heat treating operations are discussed. Selected experiments to demonstrate the effects of processing, including heat treatment on the properties of engineering materials. Standard materials tests are also performed. Three class and two laboratory hours weekly. (offered periodically)

**MFG\*H217 Tool Design 5 credits**

*Prerequisites: CAD\*H150, MFG\*H104, MFG\*H210, MAT\*H185.*

The course is designed to teach the theoretical principles, commercial standards and techniques for the design of metal cutting tools, jigs, fixtures, gages and dies. Application of the theory and principles learned in the classroom to design problems. The design problems will include metal cutting tools, jigs, fixtures, gages and dies. Three class and four laboratory hours weekly. (offered periodically)

**MFG\*H230 Statistical Process Control 3 credits** *Prerequisite: MAT\*H172.* Presents a modern approach to quality adapted from the science of statistics. The scope of study ranges from basic statistical concepts, through the history of statistical quality control and the contributions of pioneers like Deming, Juran and Taguchi. Traditional methods of control charts for both variables and attributes and acceptance sampling are presented, as well as the more modern methods. Simple, effective graphical problem-solving tools, histograms, run charts, stem and leaf displays, Pareto charts, cause and effect diagrams and capability ratios (CP & CPK) are covered. The computer is utilized as an aid in calculation and control chart preparation. Two class and two laboratory hours weekly. (offered periodically)

**MFG\*H239 Geometric Dimensioning**

 **and Tolerancing 3 credits**

A study of the industrial accepted ANSI Specification Y14.5-1973 and ANSI Y14.5M-1982. The ANSI Y14.5 specification creates a unified language through which engineering requirements are specified with respect to actual function and relationship of parts features. Subject matter includes the application of form, profile, orientation, runout, and location types of geometric characteristics, including the application of the feature control frame and tolerance and datum modifiers. Three class hours weekly. (offered periodically)

**MFG\*H248 Computer-Integrated**

 **Manufacturing (CIM) 3 credits**

*Prerequisite: MFG\*H201.* This course discusses computer generated CNC programming and computer based additive manufacturing techniques. In addition students will gain an understanding of how to use Mastercam to generate programs for both milling and turning applications. Laboratory includes hands on application of course theory. Two class and two laboratory hours weekly. (offered periodically)

**MFG\*H254 Manufacturing Machinery - Lathe II 3 credits**

*Prerequisites: Completion of Machine Technology Level I Certificate or with consent of instructor, MFG\*H154: Manufacturing Machinery - Lathe I.* Second course on lathe setup, operation and practices. Topics covered include alignment, turning between centers, and other operations. The student will cut 60 degree external threads, internal threads, tapers, and other thread forms. Use of steady rests and follower rests. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H255 Manufacturing Machinery - Milling II 3 credits** *Prerequisites: Completion of Machine Technology Level I Certificate or with consent of instructor, MFG\*H155: Manufacturing Machinery - Milling I* Second course on milling setup, operation, and practices. Topics covered include use of Offset Boring Head, side milling cutters, face milling cutters on the horizontal mill, setup and operation of index heads, simple and direct angular indexing, and inspection of gears. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\*H256 Manufacturing Machinery - CNC II 3 credits**

*Prerequisites: Completion of Machine Technology Level I Certificate, or with consent of instructor, MFG\*H156: Manufacturing Machinery - CNC I* Second course in Computer Numerical Controlled programming. A further study of CNC programming for the Lathe and Vertical Machining Center. Topics include setup and tooling, programming simple parts, canned drilling cycles, circular interpolation, special milling cycles, cutter compensation, looping and macros, and special features. *Part of the Advanced Manufacturing Machine Technology cohort program.*

**MFG\* H271 Advanced Lean Manufacturing 3 credits**

*Prerequisite: MFG\*H171.* The purpose of this course is to provide the student with the knowledge to implement lean improvements within the production environment using a systematic approach.

***Course***

***Descriptions***

This course will follow an improvement project (from the student's current employer or case study) through the five stages of the DMAIC problem solving methodology. At the completion of the course, the student will be competent to effectively lead a lean implementation project within a company. (offered in spring during even-numbered years)

**MFG\* H272 Implementing Lean Supply Chain**

 **Management 3 credits**

*Prerequisite: MFG\*H172.* The course covers the benefits and elements needed for implementing supply chain management. Team building and communication skills are shown as crucial factors in supply chain management. Topics emphasized in the course are measuring the velocity of the supply chain, developing partnerships, logistics, software tools, hardware, and continuous improvement. Class activities, group assignments and case studies are emphasized for real-world learning experiences. (offered in spring during odd-numbered years)

**MFG\*H275 Mechanics of Materials 3 credits**

*Prerequisites: MEC\*H114, MAT\*H185.* The study and explanation of the relationships existing between externally applied forces in resulting stresses in deformations. From our study of mechanics of material, we will be able to determine if a body is capable of fulfilling its intended purpose. Limited computer applications of beam theory and a computer demonstration of FEA. Three (3) class hours weekly. (offered periodically)

# MARKETING

**Business Division**

 Refer to the Business section.

# MATHEMATICS

## Science, Technology, Engineering & Mathematics Division

**MAT\*H092 Statway I 4 credits**

(developmental – no credit toward degree or transfer) *Prerequisite: Successful completion of EDUC 5016 (Transitional PreAlgebra) or an appropriate score on a college placement exam. Corequisite of ENG \*H063 or qualifying score on placement exam, or permission of Chair of Mathematics Department.* Statway I is the first of two courses offering an alternative pathway for students in non-STEM (Science, Technology, Engineering, Mathematics) majors. These courses will combine elements of algebra and statistics into one curriculum. Students will take these courses instead of MAT \*H095 (Elementary Algebra), MAT \*H137 (Intermediate Algebra), and MAT \*H167 (Principles of Statistics). The goal is to significantly improve the retention rate in developmental mathematics. (offered periodically)

**MAT\*H094 Introductory Algebra 3 credits**

*Prerequisite: Successful completion of EDUC 5016 (Transitional PreAlgebra) or an appropriate score on a college placement exam.* The course begins with a brief review of basic computational skills and operations with signed numbers. Algebraic order of operations and evaluation and simplification of algebraic expressions are followed by techniques for solving first degree equations and inequalities in one unknown. Also included in this course are algebraic methods for solving applications involving one and two unknowns. Basic rules of exponents are presented and scientific notation is discussed. This is followed by the basic polynomial operations and graphing linear equations in two unknowns, finding slopes of lines, x- and y- intercepts, and writing the equations of lines. This will not fulfill a mathematics requirement in any degree program. (fall/spring/ summer)

**MAT\*H095 Elementary Algebra Foundations 3 credits**

*Prerequisite: Successful completion of EDUC 5016 (Transitional PreAlgebra) or an appropriate score on a college placement exam.* The course begins with a brief review of basic computational skillsand operations with signed numbers. Algebraic order of operations and evaluation and simplification of algebraic expressions are followed by techniques for solving first degree equations and inequalities in one unknown. Also included in this course are algebraic methods for solving applications involving one and two unknowns. Basic rules of exponents are presented and scientific notation is discussed. This is followed by the basic polynomial operations and graphing linear equations in two unknowns, finding slopes of lines, x- and y- intercepts, and writing the equations of lines. This will not fulfill a mathematics requirement in any degree program. (fall/winter/spring/ summer)

**MAT\*H121 Applications for Business and**

 **Other Careers 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H094 (Introductory Algebra) or MAT\*H095 (Elementary Algebra) or an appropriate score on a college placement exam.* Enrollment in MAT\*H121 is restricted to specific programs. Topics covered include arithmetic and algrebraic operations, statistics, graphs, and tables. This course emphasizes specific mathematical applications for each discipline. (offered periodically)

**MAT\*H122 Statway II 4 credits**

*Prerequisite: C or better in MAT \*H092 (Statway I).* Statway II is the second course in the two semester Statway course sequence. The Statway course sequence is recommended for students enrolled in degree programs that require no mathematics beyond freshmanlevel statistics. Both courses in the course sequence (Statway I and Statway II) may be used to receive credit for college level statistics with Division Leader approval. Students will use mathematical and statistical tools to explore real life data in a participatory learning environment. Statway II topics include modeling data with functions, quadratic functions, discrete and continuous probability distributions, Central Limit Theorem, sampling distributions, confidence intervals, one-sample and two-sample hypothesis tests, Chi-Square Tests, and ANOVA. This course requires the use of statistical technology. (offered periodically)

**MAT\*H135 Topics in Contemporary Mathematics 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H094 (Introductory Algebra) or MAT\*H095 (Elementary Algebra) or an appropriate score on a college placement exam.* A practical course offering an exposure to a wide range of topics with an emphasis on critical thinking, problem solving and the real number system. **Topics include number theory, financial management, set theory, metric system and statistics. This course will not satisfy the General Education mathematics requirement at CT State Universities.** (fall/spring/ summer)

**MAT\*H136 Intermediate Algebra with Lab 4 credits**

*Prerequisite: Grade of "C" or better in MAT\*H094 (Introductory Algebra) or MAT\*H095 (Elementary Algebra) or an appropriate score on a college placement exam.* This course initiates with the concepts of beginning algebra such as solving first degree equations and inequalities, applications and graphing of linear equations, and simplifying exponential expressions. The course also includes concepts of intermediate algebra such as factoring techniques. The study of polynomial functions is extended via applications involving linear functions, linear systems, and quadratic functions. Students also study exponential functions, rational functions, radical functions, and absolute value functions. **This may be used as a general elective; this will not fulfill a mathematics requirement in any degree program.** (fall/spring/summer)

**MAT\*H137 Intermediate Algebra 3 credits**

*Prerequisite: Grade of “B-” or better in MAT\*H094 (Introductory Algebra) or "C" or better in MAT\*H095 (Elementary Algebra) or an appropriate score on a college placement exam.* The main themes of Intermediate Algebra are functions, represented by tables, graphs, and rules, and problem solving. The study of polynomial functions is extended via applications involving linear functions, linear systems, and quadratic functions. Students also study exponential functions, rational functions, radical functions, and absolute value functions.

Computer component required; TI-83 (Plus) or TI-84 (Plus) or online graphing utility required. **This may be used as a general elective; this will not fulfill a mathematics requirement in any degree program.** (fall/winter/spring/summer)

**MAT\*H143 Math for Elementary Ed:**

 **Algebra, Number Systems 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H136 (Intermediate Algebra with lab) or MAT\*H137 (Intermediate Algebra) or an appropriate score on a college placement exam.* This course is designed for students planning to become certified in early childhood, elementary or middle school level education. Problem solving strategies will be developed and integrated throughout, in accordance with the NCTM *Principles and Standards for School Mathematics.* Topics include conceptual and relational understanding of the real numbers, including the subsets of whole numbers, integers, rational and irrational numbers, with an emphasis on place value and the associated operations. Topics from numeration systems, number theory, and set theory will be developed as needed, with regular use of manipulatives and technology. (fall)

**MAT\*H144 Math for Elementary Ed:**

 **Geometry, Data 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H136 (Intermediate Algebra with lab) or MAT\*H137 (Intermediate Algebra) or an appropriate score on a college placement exam.* This course is designed for students planning to become certified in early childhood, elementary or middle school level education. Problem solving strategies will be developed and integrated throughout, in accordance with the NCTM *Principles and Standards for School Mathematics.* Topics include probability, statistics, and geometry concepts presented through a problem-solving approach, and incorporating an extensive use of manipulatives and geometric software. Mathematical discourse is encouraged through cooperative learning and written communication. (spring)

**MAT\*H146 Math for the Liberal Arts 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H136 (Intermediate Algebra with lab) or MAT\*H137 (Intermediate Algebra) or an appropriate score on a college placement exam.* This is a survey course designed to acquaint the liberal arts student with a broad spectrum of mathematical ideas not emphasized in traditional algebra courses. As a terminal mathematics course, it conveys the nature and diversity of mathematics, its methods, applications, and roles in society. Topics are selected from problem solving and critical thinking skills, graph theory, voting and apportionment, introduction to probability, linear programming, patterns and symmetry, linear and exponential applications; others may include fractal geometry, financial management, fair division schemes, game theory, or codes. (fall/spring/summer)

**MAT\*H167 Principles of Statistics 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H136 (Intermediate Algebra with lab) or MAT\*H137 (Intermediate Algebra) or an appropriate score on a college placement exam.* This technology-based course begins with an introduction to data analysis including techniques in the presentation of data and in the determination of statistical measures for central tendency and variation. The topics of linear correlation and regression are explored in the analysis of bivariate data. The basics of probability are presented prior to a thorough examination of discrete and continuous probability distributions. Emphasis is placed on the binomial and normal distributions. Estimation and hypothesis testing for population means are introduced. As time permits, statistical inference techniques for proportion, variance and the difference of means will be presented. (fall/winter/spring/summer)

**MAT\*H170 Math Education in Practice 1 credit**

*Prerequisite: Grade of “B” or better in MAT\*H172 with two letters of recommendation from instructors at NVCC and permission of the Division Leader or Math Department Chair.* This course provides students the opportunity to develop their communication skills in mathematics. Students will assist and tutor peers in mathematics using appropriate technology for a minimum of three hours per week for 14 weeks in the Academic Center for Excellence at Naugatuck Valley Community College under the supervision of a math instructor. The course may be taken up to three times for a maximum of 3 credit hours. (fall/spring)

**MAT\*H172 College Algebra 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H136 (Intermediate Algebra with lab) or MAT\*H137 (Intermediate Algebra) or an appropriate score on a college placement exam.* This course offers the student the development of numeric, algebraic, and graphic problem solving techniques beyond the intermediate level. Techniques are developed to solve equations and inequalities involving polynomials, radicals and rational expressions. Polynomial, inverse, rational, exponential, and logarithmic functions are studied and their applications are explored both algebraically and graphically. (fall/spring/summer)

**MAT\*H185 Trigonometric Functions 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H172 (College Algebra) or an appropriate score on a college placement exam.* This course offers the student a development of trigonometry through a functional approach. The trigonometric functions are considered as circular functions with applications of these to the solution of triangulation problems. Topics include trigonometric identities, inverse trigonometric functions, oblique triangle trigonometry and the graphs of the trigonometric functions. Vectors will be introduced and the polar coordinate system will also be considered. (fall/spring/summer)

**MAT\*H186 Precalculus 4 credits**

*Prerequisite: Grade of "C+" or better in MAT\*H137 or an appropriate score on college placement exam.* This course offers students the development of numeric, algebraic, and graphic problem solving techniques beyond the intermediate level. Techniques are developed to solve equations and inequalities involving polynomials, radicals, rational expressions. Polynomial, inverse, rational, exponential, logarithmic, and trigonometric functions are studied and their applications are explored both algebraically and graphically. The trigonometric functions are considered as circular functions with applications of these to the solution of triangulation problems. Topics include trigonometric identities, inverse trigonometric functions, oblique triangle trigonometry, and vectors will be introduced. (fall/spring/summer)

**MAT\*H221 Intermediate Applied Statistics 4 credits** *Prerequisite: Grade of “C” or better in MAT\*H167 or MAT\*H172 or higher.* In-depth study of statistics, probability, estimation, hypothesis testing for single and difference of means and proportions, simple linear and multiple regression, and Chi-Square tests of independence. (offered periodically)

**MAT\*H232 Applied Calculus 4 credits**

*Prerequisite: Grade of “C” or better in MAT\*H172 (College Algebra) or an appropriate score on a college placement exam.* The purpose of this course is to acquaint students not majoring in mathematics or science with a body of mathematical knowledge that may well demand investigation in view of their various academic goals. Topics covered include function theory, inequalities, tangient problems, continuity, limits, derivatives, and integrals. (offered periodically)

**MAT\*H254 Calculus I 4 credits**

*Prerequisite: Grade of “C” or better in MAT\*H185 (Trigonometric Functions) or MAT\*H186 (Precalculus) or an appropriate score on a college placement exam.* A four semester hour course intended to prepare students for advanced mathematics. The course begins with a review of precalculus. New topics include limits, continuity, the derivative, differentiation rules, geometric and physical applications of the derivative, the definite integral and its geometric meaning, antiderivatives and the indefinite integral, and basic integration rules. (Effective fall, 2018 only.)

***Course***

***Descriptions***

**MAT\*H256 Calculus II 4 credits**

*Prerequisite: Grade of “C” or better in MAT\*H254 (Calculus I)* A second course in calculus for mathematics or science majors. Topics include the definite integral and applications of the definite integral to areas, volumes, and length of arc of a plane curve. Also considered are logarithmic and exponential functions, trigonometric functions, inverse trigonometric functions and various techniques of integration. Limits involving indeterminate forms and improper integrals are also discussed. The course concludes with an introduction to infinite series. (Effective fall, 2018 only.)

**MAT\*H256 Calculus II 4 credits**

*Prerequisite: Grade of “C” or better in MAT\*H254 (Calculus I)* A second course in calculus for mathematics or science majors. Topics include applications of the definite integral to areas and volumes, various techniques of integration, improper integrals, plane curves, parametric equations, polar coordinates, and infinite series. (Effective spring, summer 2019)

**MAT\*H268 Calculus III: Multivariable 4 credits**

*Prerequisite: Grade of “C” or better in MAT\*H256 (Calculus II).* A course in multivariable calculus for mathematics or science majors. Topics include conic sections, plane curves, parametric equations and polar coordinates, vectors and solid analytic geometry, vector-valued functions, functions of several variables, partial differentiation, and multiple integration. (current)

**MAT\*H268 Calculus III: Multivariable 4 credits**

*Prerequisite: Grade of “C” or better in MAT\*H256 (Calculus II).* A course in multivariable calculus for mathematics or science majors. Topics include conic sections, vectors and solid analytic geometry, vector-valued functions, functions of several variables, partial differentiation, and multiple integration. (Effective fall, 2019)

**MAT\*H285 Differential Equations 3 credits**

*Prerequisite: Grade of “C” or better in MAT\*H256 (Calculus II)* Study of ordinary differential equations. Equations studied include the following: first-order linear, separable equations; exact equations; homogeneous linear equations of first or higher order with constant coefficients; auxiliary equations with complex roots; and non-homogeneous equations. Solutions of initial value problems with associated applications are studied. Techniques used include linear differential operators, the method of undetermined coefficients, variation of parameters, and Laplace transforms. (spring)

# MECHANICAL ENGINEERING TECHNOLOGY

## Science, Technology, Engineering & Mathematics Division

**MEC\*H114 Statics 3 credits**

*Prerequisites: TCN\*H101, MAT\*H186 and PHY\*H121.* Analysis of the forces which act upon particles and rigid bodies at rest. Balances of forces and moments on an object provide the basis for equilibrium calculations involving points, rigid bodies, trusses, frames and machines with a variety of supports, including frictional. The concepts of centroids, center of gravity and moment of inertia are also introduced. Three class hours weekly. (fall)

**MEC\*H238 Dynamics** **4 credits**

*Prerequisites: MEC\*H114, MAT\*H254.* This course covers the fundamental techniques used for analyzing the motion of particles and rigid bodies and the forces which cause that motion. Translation and rotation as fundamental components of rectilinear, curvilinear and constrained plane motion are explained. Relative and absolute velocities and accelerations are treated with both graphical and computational techniques. Laboratory practice is used to verify and reinforce the theoretical concepts. Three class and two laboratory hours weekly. (spring)

**MEC\*H240 Fundamentals of Heat and**

 **Thermodynamics 4 credits**

*Prerequisite: CHE\*H121 or permission of instructor.* This course covers the fundamental concepts of heat transfer and thermodynamics. Major topics in heat transfer include conduction, convection and radiation and their application to heat exchangers. Major topics in thermodynamics include the First and Second Laws of Thermodynamics and their application to vapor-power and refrigeration cycles. Laboratory experiments will supplement the theoretical class work. Three class and two laboratory hours weekly. (offered in fall during even-numbered years)

**MEC\*H251 Materials Strength 4 credits** *Prerequisite: MEC\*H114.* Covers the principles involved in the analysis of stresses which occur within machine and structural elements subjected to various types of loads. Analysis of these stresses are made as applied to thin-walled cylinders and spheres, beams, columns, couplings and shafts. Laboratory experiments supplement and reinforce theoretical class work. Three class and two laboratory hours weekly. (spring)

**MEC\*H271 Fluid Mechanics 4 credits** *Corequisite: MEC\*H114.* An introductory survey of the principles and methods involved in the analysis of fluid systems. Included are common fluid properties, hydrostatics, the kinematics of fluid flow and energy relationships. Laminar and turbulent flow in piping systems are analyzed. Laboratory experiments supplement and reinforce theoretical class work. Three class and two laboratory hours weekly. (offered in fall during odd-numbered years)

**MEC\*H284 Machine Design 4 credits** *Prerequisites: CAD\*H150 and MEC\*H251, or permission of instructor.* Deals with the concept of mechanical design from concept to specifications. Covers the procedures, data, and techniques necessary to design/select mechanical components such as gears, springs, bearings, belt and chain drives, clutches, brakes, fasteners, shafts and screws. A design project is also included. Three class and two laboratory hours weekly. (offered periodically)

# METEOROLOGY

## Science, Technology, Engineering & Mathematics Division

**MET\*H101 Meteorology 3 credits**

An introductory course on weather and climate. Through lecture, internet access and other media, this course will cover atmospheric motion, severe weather, global and local climate, and forecasting. (offered periodically)

# MULTIMEDIA TECHNOLOGY

## Liberal Arts and Behavioral/Social Sciences Division

Multimedia Technology courses are listed under Digital Arts Technology section.

# MUSIC

## Liberal Arts and Behavioral/Social Sciences Division

The Division of Liberal Arts and Behavioral/Social Sciences encourages students to register for music courses in order to develop appreciation of, and skills in, the musical arts. Some of the courses are required in career programs; others are designed for students’ interests and personal development. Consultation with counselors will help determine specific needs.

**MUS\*H101 Music History & Appreciation I 3 credits** The course surveys historically significant music from the medieval period to the 20th century, emphasizing stylistic characteristics found in great music, art, and architecture.

**MUS\*H103 American Music 3 credits** This course surveys the history of American music from colonial times to the present day. Emphasis is placed on the ways in which the forms, genres, and styles of American popular and concert music engage with significant moments and trends in American social and cultural history.

**MUS\*H104 World Music 3 credits**

In World Music students study a variety of ethnic music from around the world. While the primary focus will be limited to certain selected regions and traditions, the overall scope will be broad in that these regions represent many different countries. Because students will be studying music within the context of the societies that create it, the approach to the course material is interdisciplinary, incorporating aspects of the arts, humanities, and social sciences.

**MUS\*H111 Fundamentals of Music I 3 credits** This course begins the study of notation and forms that musicians use to arrange, compose and perform music. Topics include musical instruments, clefs, key signatures, time signatures, scales, musical styles and forms.

**MUS\*H115 Music Theory I 3 credits**

Music Theory I is a study of melodic writing leading to four-part diatonic harmony and should be taken concurrently with

Ear Training I. Topics include four-part writing, non-chord tones, cadences, and seventh chords. Music analysis, reading, and aural skills are reinforced together with the Theoretical material presented.

**MUS\*H116 Music Theory II 3 credits**

*Prerequisite: Grade of “C” or better in MUS\*H115 or permission of instructor.* This is a continuation of MUS\*H115 with a study of secondary functions, modulation, form and counterpoint and should be taken concurrently with Ear Training II. Music analysis, reading, and aural skills are developed together with the theoretical material presented.

**MUS\*H156 Guitar Ensemble 2 credits**

This is an opportunity for guitarists and bassists to experience reading and improvising in the context of a section, rather than the traditional rock or jazz band format. The goal is to raise sight reading levels while learning the art of ensemble playing. Special attention is paid to dynamics, phrasing, intonation, ensemble playing, and general musicianship. This course may be repeated for credit.

**MUS\*H158 Chamber Music / Jazz Ensemble I 2 credits** Students and community members will perform jazz and contemporary charts from the Big Band Era to Fusion Rock in a small instrumental group. Featured instruments include percussion, bass, keyboard, guitar, saxophone, trumpet, and trombone. The course is open to all students with the consent of the instructor.

**MUS\*H161 Chorale I 2 credits**

Performance of choral repertoire from all stylistic periods is studied. Performances occur at the College and in the community. The course is open to all students as well as members of the community, with the consent of the instructor and may be repeated for credit.

**MUS\*H162 Chorale II 2 credits**

*Prerequisite: Successful completion of MUS\*H161 or permission of instructor.* This course is devoted to more advanced study and performance of choral repertoire from all stylistic periods, and is meant to be taken after successful completion of Chorale I (MUS\*H161). Performances occur primarily at the College and in the community. The repertoire represents the work of both serious classical composers as well as contemporary popular composers. The course is open to all students with the consent of the instructor and may be repeated for credit.

**MUS\*H163 Ear Training I 1 credit** The goal of Ear Training I is to acquire the skills necessary to make intelligent and competent musicians. This course will focus on three major areas; sight singing, rhythmic reading, and dictation. This course is considered to be an aural lab component of Theory I and should be taken concurrently. It is an important course for those wishing to improve their pitch accuracy for the Chorus audition or Voice Lessons.

**MUS\*H164 Ear Training II 1 credit**

*Prerequisite: MUS\*H163 or permission of instructor.* The goal of Ear Training II is to continue the work done in Ear Training I providing students with advanced training in pitch and rhythm, perception and sight reading. It is considered to be an aural lab component of Theory II and should be taken concurrently. It is an important course for those wishing to improve their pitch accuracy for Chorus or Voice lessons.

**MUS\*H173 Class Voice 1 credit**

Principles of voice placement and development, breathing, diction and production are practiced. Solo and duet repertoire are explored. This is designed as a beginner class for students with little or no experience. The course may be repeated for credit.

**MUS\*H183 Applied Private Music Lessons I 1 credit**

Weekly private instruction in student's instrument/voice. Students will study performance techniques, advanced skills, and build repertoire. Students must complete twelve one-hour lessons. An end-of-term jury performance may be required at the discretion of the instructor.

**MUS\*H184 Applied Private Music Lessons II 2 credits**

Weekly private instruction in student's instrument/voice. Students will study performance techniques, advanced skills, and build repertoire. Students must complete twelve one-hour lessons. An end-of-term jury performance may be required at the discretion of the instructor.

**MUS\*H213 Music Theory III 3 credits**

*Prerequisite: MUS \*H116 with a grade of “C” or better, or permission of instructor.* Music Theory III provides training and supervised practice of analyzing, performing, and composing music. Music Theory III is a continuation of Music Theory II and should be taken concurrently with Ear Training III. Secondary chords, altered 6th chords, chromatic harmony, and modulation are mastered. Song writing is pursued as a means of understanding harmonic rhythm, progressions, accompaniment patterns, and small form structure. Keyboard proficiency is included.

**MUS\*H214 Music Theory IV 3 credits**

*Prerequisite: MUS \*H213 with a grade of “C” or better, or permission of instructor.* Music Theory IV provides training and supervised practice of analyzing, performing, and composing music. Music Theory IV is a continuation of Music Theory III and should be taken concurrently with Ear Training IV. Enharmonic modulation is introduced along with extended and chromatic harmony. Larger formal patterns are discussed (sonata form, rondo, and variation). 20th-century harmony is introduced, including non-functional harmony, dodecaphony, and set theory. Keyboard proficiency is included.

**MUS\*H218 Electronic Music Composition/Audio Technology I**

 **(also listed as DAT\*H218) 3 credits**

*Prerequisites: CSA\*H105 and permission of instructor.* This course is an introduction to the art and techniques of electronic music and audio production. The history, elements, and tools of electronic music and audio will be defined and explored. Topics will include; acoustics theory, analog and digital audio principles, recording engineering techniques, sound sampling, electronic synthesis, MIDI, and audio for multimedia and the World Wide Web.

**MUS\*H254 Concert Band 2 credits**

This is a modern, symphonic concert band featuring woodwind, brass, and percussion instruments. The band performs for college functions (such as commencement) and for the benefit of the college. The band may perform at other off-campus venues and for non-campus organizations. The instructor selects repertoire each semester based on the available instruments and skill level of players, as well as picking repertoire suitable for college activities. The repertoire represents the work of both serious “classical” composers as well as contemporary popular composers. The course is open to all students with the consent of the instructor and may be repeated for credit.

***Course***

***Descriptions***

**MUS\*H263 Ear Training III 1 credit**

*Prerequisite: MUS\*H164 with a grade of “C” or better, or permission of instructor.* Ear Training III provides classroom training and supervised practice of connecting musical sounds to musical notation and harmonic systems. Ear Training III is a continuation of Ear Training II and should be taken concurrently with Music Theory III. Intervals, scales, and chords in all inversions are sung and identified. Melodies for singing and dictation gradually incorporate chromatic alterations and modulation. Keyboard harmony is reinforced.

**MUS\*H264 Ear Training IV 1 credit**

*Prerequisite: MUS\*H263 with a grade of “C” or better, or permission of instructor.* Ear Training IV provides classroom training and supervised practice of connecting musical sounds to musical notation and harmonic systems. Ear Training IV is a continuation of Ear Training III and should be taken concurrently with Music Theory IV. Sight singing, melodic dictation, keyboard harmony, and harmonic dictation incorporating chromaticism (secondary functions, mode mixture, N6, and augmented sixth chords), modulation to both closely and distantly related keys, and advanced rhythmic practices (syncopation, shifting meters, and hemiola).

**MUS\*H274 Conductor’s Lab Ensemble 2 credits**

*Prerequisite: MUS\*H115 Music Theory I or permission of the instructor. The course must be taken concurrently with MUS\*H183 or MUS\*H184 Applied Music – Conducting.* Learners are members of the College Choir. In addition to singing their particular voice part they also act as assistant conductors and are listed as such in concert programs. During the course of the semester assistant conductors utilize the baton and rehearsal techniques taught in the tutorials with the full choral group, either in the setting of a small group, voice section, or the entire chorus.

# NURSING

## Allied Health/Nursing/Physical Education Division

**NUR\*H101 Introduction To Nursing Practice 8 credits**

*Prerequisite: Admission to the College and the Nursing Program.* The student will focus on concepts basic to nursing practice. Emphasis is placed on application of the nursing process, communication skills, and nursing practice procedure acquisition. Clinical and laboratory experiences offer opportunities to integrate theoretical principles and demonstrate caring and competence in beginning professional role development.

**NUR\*H102 Family Health Nursing 8 credits**

*Prerequisites: NUR\*H101, PSY\*H111, BIO\*H235. Corequisite: NUR\*H103.* The student will focus on issues affecting the family, including childbearing, childrearing, geriatric care and intermediate health care needs of limited duration. The medical surgical health problems include care for the client in the peri-operative period and the client experiencing orthopedic and simple genitourinary conditions. The course addresses several psychiatric disorders: anxiety and cognitive disorders, common child and adolescent psychiatric disorders. The student will have clinical rotations that provide experience caring for the childbearing family as well as caring for medical-surgical clients across the lifespan.

**NUR\*H103 Pharmacology for Families**

 **Across the Lifespan 1 credit**

*Prerequisite: NUR\*H101. Corequisite: NUR\*H102.* The student will focus on the safe use, pharmacological principles, indications and nursing implications related to drug therapy when caring for individuals and families. Emphasis will be on medications used with perinatal, neonatal, pediatric, geriatric and peri-operative clients. The course will stress the general characteristics of selected medications and will include indications, pharmacokinetics, side effects, adverse effects, contraindications, administration, nursing implications across the lifespan, client education and relationship to prior learning.

**NUR\*H130 LPN to RN Transition I 1 credit** *Prerequisite: Charter Oak State College NUR 190: LPN to RN Articulation Bridge.* This course is the final component of the Connecticut League for Nursing LPN to RN Articulation Plan for the Connecticut Community Colleges Nursing Program (CT-CCNP) which prepares LPNs to enter the CT-CCNP in the second year of study. Students enrolling in this course have been accepted for admission into the (CT-CCNP) and have chosen the option to enter the third semester. Hours: Clinical: 45 hours (Clinical and laboratory hour distribution is at the discretion of the college attended.)

**NUR\*H201 Nursing Care of Individuals and**

 **Families 1 9 credits**

*Prerequisites: NUR\*H102, NUR\*H103, PSY\*H201, SOC\*H101. Corequisite: NUR\*H202.* The student will focus on holistic care of individuals and families across the lifespan with a variety of health care needs. The needs of clients experiencing endocrine, respiratory, gastrointestinal, cardiovascular conditions and selected mental health disorders are examined. Bioterrorism as a health care issue will be addressed. Clinical laboratory experience provides the student an opportunity to administer care to a diverse population of clients in a variety of acute care and community health care settings. The student will utilize critical thinking, caring, professionalism and communication skills in the care of the client. Emphasis is placed on provision of safe and competent care and development of the professional role as a member of a multidisciplinary health care team. Over the semester, the student is increasingly challenged in the clinical area with more complex client assignments.

**NUR\*H202 Pharmacology for Individuals and Families with Intermediate Health Care Needs 1 credit**

*Prerequisites: NUR\*H102, NUR\*H103. Corequisite: NUR\*H201.* The student will focus on pharmacologic principles related to the care of individuals and families across the lifespan with intermediate health care needs. Emphasis will be placed on medications used for clients who have endocrine, gastrointestinal, respiratory, cardiovascular, autoimmune, and psychiatric conditions and clients who are survivors of bioterrorism.

**NUR\*H203 Nursing Care of Individuals**

 **and Families II 8 credits**

*Prerequisites: NUR\*H201, NUR\*H202, ENG\*H102. Corequisite: NUR\*H204, NUR\*H205.*The student will focus on the holistic care of individuals, families, and groups with complex health care needs. The student will incorporate critical thinking, caring behaviors, professionalism, and communication skills when providing nursing care in a variety of acute, long-term and/or community settings. Students will have an opportunity to manage a multi client assignment with an emphasis on safe and competent practice. An observational experience with a visiting nurse agency, a dialysis unit and/or a cancer center will be provided.

**NUR\*H204 Pharmacology for Individuals, Families and Groups with Complex Health**

 **Care Needs 1 credit**

*Prerequisites: NUR\*H201, NUR\*H202. Corequisite: NUR\*H203.*The student will focus on safe use, pharmacologic principles, indications and nursing implications related to drug therapy in the care of individuals, families, and groups with complex health care needs. Emphasis will be placed on medications used for clients who have acute and chronic renal failure, oncology and neurological conditions, and multi-system dysfunction and who choose an alternative therapy.

**NUR\*H205 Nursing Management and Trends 2 credits**

*Prerequisites: NUR\*H201, NUR\*H202. Corequisite: NUR\*H203, NUR\*H204.* The student will explore the basic principles of management, leadership and collaborative relationships as they relate to providing safe and competent care. The focus is on the utilization of critical thinking skills to make decisions on priority setting, delegation, legal parameters of nursing practice and ethical issues. Students will expand the concept of caring to the profession of nursing through collegial and interdisciplinary communication. This course facilitates the transition for students into the profession and their role in contemporary nursing practice.

# PHILOSOPHY

## Liberal Arts and Behavioral/Social Sciences Division

**PHL\*H101 Introduction to Philosophy 3 credits**

*Prerequisite: Grade of "C" or better in ENG\*H101.* Philosophy 101 surveys several major areas within the discipline, which may include aesthetics, ethics, free will, government, knowledge, logic, meaning of life, mind, reality, religion, and science. Philosophy has as its fundamental mission the cultivation of skills and world views that contribute to student development as autonomous persons and engaged members of society. These skills and dispositions are acquired through studying and doing philosophy. These skills facilitate a student's development by encouraging the critical, systematic, and philosophically informed examination of beliefs, values, and conceptions of existence. Such an individual has an independent, flexible, and open mind capable of making well-reasoned decisions.

**PHL\*H111 Ethics 3 credits** *Prerequisite: ENG\*H101.* This course studies the approaches to ethics, ethical language, and interpretations of “Who am I?” and “What am I to do?” Morality as it relates to freedom, religion, medicine, business, mass media, technology, Environment and personal commitment are among the topics covered. Using logical reasoning, students demonstrate an understanding of ethical behavior in both oral and written form.

**PHL\*H112 Medical Ethics 3 credits**

*Prerequisite: ENG\*H101.* This course is an introduction to moral issues and options in medicine, with particular attention to those most directly affecting the public and general medical personnel. Topics include the meaning of “life,” birth control, artificial insemination, genetic engineering, abortion, human experimentation, behavior control, organ transplantation, truth and the physician, care of the dying, and public health care.

**PHL\*H151 World Religions 3 credits**

*Prerequisite: ENG\*H101.* This course studies various living Eastern and Western religions and their beliefs about the meaning of life, God, reality, truth, morality and worship.

**PHL\*H150 Philosophy of Religion 3 credits** *Prerequisite: ENG\*H101.* The nature of religion, the reality and existence of God, religious knowledge and values, the soul, life after death, the problem of evil, mysticism, miracles, and the relationship of religion to science and history are explored.

# PHYSICAL EDUCATION

## Allied Health/Nursing/Physical Education Division

The Physical Education and Health Fitness courses at Naugatuck Valley Community College are designed to meet the life-time needs of the individual as teacher and person. Courses develop the basic skills and methodologies required for good physical and mental health. Courses have been recognized for transfer credit by four-year institutions. Activity course descriptions appear at the end of this section.

**HPE\*H101 Weight Control and Exercise 2 credits**

Designed to help students realize the importance of healthy diet and exercise behaviors in permanent weight control. Behavior modification techniques are used to help students achieve a healthy lifestyle that will result in either a gradual reduction in body weight, and/or the maintenance of a healthy body weight.

**HPE\*H117 Weight Training 2 credits**

Emphasis of this course is on the development of a high degree of individual skills and methods necessary to understand the body mechanics involved in activity exercise. Programs discussed will include training for leisure sports, rehabilitation, muscular tone, endurance, cardiovascular endurance, flexibility, and weight loss.

**HPE\*H140 Pilates/Wellness**

 *(also listed as DAN\*H140)* **1 credit**

This course focuses on the quality of movement, posture and breathing by increasing strength, flexibility, and balance. The holistic perspective includes physical awareness, cognitive reflection, and insights from feelings and focuses on mind-body centering. Pilates/ Wellness is designed for the dancer, athlete, health professional or persons interested in overall well-being. This class meets the first ten weeks of the semester. Comfortable clothing is necessary.

**HPE\*H147 Self-Defense I 1 credit**

This course is designed to promote the methods and skills to understand and perform the art of karate for self-defense and discipline. It includes the study of history, philosophy and culture of the martial art of karate.

**HPE\*H148 Self-Defense II 1 credit**

*Prerequisite: HPE\*H147.* This course is advanced study in the art and methods of self-defense including elements of physical fitness. Students who enroll in this course will be given a promotion test for belt certification.

### HPE\*H261 Yoga 1 credit

This course is designed to introduce students to the methods and skills necessary to understand and perform Yoga. Relaxation techniques and flexibility training are stressed.

### HPE\*H264 Yoga 2 credits

This course is designed to introduce students to the methods and skills necessary to understand and perform Yoga. Relaxation techniques and flexibility training are stressed.

# PHYSICAL THERAPIST ASSISTANT

## Allied Health/Nursing/Physical Education Division

**PTA\*H120 Introduction to**

**Physical Therapy 3 credits** *Prerequisites: Admission to the PTA Program and PTA\*H125.* Learning opportunities in this course assist the student to recognize the roles of physical therapy within various practice settings. Students differentiate functions of physical therapists and physical therapist assistants as members of the health care team through study of the history of physical therapy, documentation, ethical & legal principles, evidence based practice, and medical terminology important to the provision of services. Learning also includes development of knowledge and abilities within the domains of professional conduct, interpersonal and professional communication, and sensitivity to individual and cultural differences.

**PTA\*H125 PT for Function 4 credits**

*Prerequisites: Admission to the PTA Program and PTA\*H120.* This lecture and lab based course, provides the student with introductory concepts and techniques regarding physical therapy interventions for function and mobility. Emphasis is placed on enhancing the students’ problem-solving abilities and comprehension of the physical therapist assistant’s role. The importance of modification of physical therapy interventions within the plan of care developed by the supervising physical therapist is highlighted. The laboratory section of this course allows the student to develop the psychomotor skills through simulated patient scenarios.

**PTA\*H130 Clinical Anatomy and Kinesiology 3 credits** *Prerequisite: BIO\*H211.* This course is designed to enable students to identify the structure and function of the human body including the spine, upper and lower extremities through computer simulation and application. The course includes the study of skeletal and muscular structures involved in human movement. Students will understand movement control and elements of movement dysfunction. The student will also gain an understanding of biomechanical forces, neuromuscular control, and pathological influences through analysis of biomechanical forces on the body.

**PTA\*H145 Physical Agents in PT 3 credits** *Prerequisites: PTA\*H120, PTA\*H125 and PTA\*H130 with a grade of “C” or higher.* *Corerequisites: PTA\*H150 and PTA\*H155.* This hybrid course develops the student’s competence with problem- solving and application of physical therapy interventions using physical agents, including therapeutic applications of heat, cold, water, electricity, light, and mechanical forces or devices. The student will be exposed to online lecture-based facilitation and laboratory experiences regarding therapeutic application of physical agents that will include: scientific theory; common pathologies that would reflect best practice usage of physical agent interventions; indications, contraindications and precautions to use; patient simulations and case scenarios to allow for problem solving and discussion; expected patient outcomes from the use of physical agents; patient education and communication; appropriate documentation for provided physical agent interventions.

***Course***

***Descriptions***

**PTA\*H150 PT Interventions I 4 credits**

This course uses a case study approach to enhance problem solving skills and provide integration of various patient examination, goal setting, and intervention techniques within the scope of physical therapist assistant practice. Topics covered include foundational PT skills of goniometric and muscle strength assessment and exercise prescription. The student will achieve competency in the following patient care techniques: data collection skills, exercise prescription, communication and documentation skills including appropriate billing, and patient safety. Manual muscle testing and goniometric measurement of joint range of motion will be incorporated into laboratory exercises. Professionalism, verbal and written communication skills, and ethics are considered throughout.

**PTA\*H155 Pathology for the PTA I 3 credits**

*Prerequisites: PTA\*H120, PTA\*H125, PTA\*H130 with a grade of “C” or higher.; Corequisite: PTA\*H145, PTA\*H150*. This is the first course of a two-course pathology sequence designed to provide the physical therapist assistant student with the knowledge of human pathology of selected body systems including implications for patient management. Topics covered are inflammation, immune responses, hepatic, pancreatic and biliary diseases, and specific diseases of the endocrine, cardiac, GI, and respiratory systems. This is a foundational course as it promotes an understanding of the disease processes, and it guides the student in application and analysis of medical pathology in patient care. Emphasis is placed on the relationship of medical presentation signs/symptoms and its implication on physical therapy treatment.

**PTA\*H251 PT Interventions II 3 credits**

*Prerequisites: PTA\*H145, PTA\*H150, PTA\*H155;*

*Corequisite: PTA\*H255, PTA\*H258*. This course uses a case study approach to enhance problem solving skills and provide integration of various patient intervention techniques within the scope of physical therapy practice. Topics covered include interventions for special populations such as status post amputation, pre/post-partum, neurological diagnoses, and pediatric conditions. The student will achieve competency in the following patient care techniques: specialized exercise prescription, prosthetic & orthotic management, and normal and abnormal reflex identification. Patient education, appropriate billing, patient safety, professionalism, verbal and written communication skills, and ethics are considered throughout (Beginning spring 2019)

**PTA\*H255 Pathology for the PTA II 3 credits**

*Prerequisites: PTA\*H145, PTA\*H150, PTA\*H155;*

*Corequisite: PTA\*H251, PTA\*H258*. This is the second course of a two-course pathology sequence designed to provide the physical therapist assistant student with the knowledge of human pathology of selected body systems including implications for patient management. Topics covered include the nervous system diseases and the integumentary system. Diagnoses such as CVA, SCI, TBI, amputee, and pediatric development will be covered in detail. This is a foundational course as it promotes an understanding of the disease processes, and it guides the student in application and analysis of medical pathology in patient care. Emphasis is placed on the relationship of medical presentation signs/symptoms and its implication on physical therapy treatment. (Beginning spring 2019)

**PTA\*H258 PTA in the Healthcare Arena 2 credits**

*Prerequisites: PTA\*H145, PTA\*H150, PTA\*H155 with a grade of “C” or higher.* This course develops the student’s ability to apply physical therapy interventions and data collection techniques within the PT’s plan of care in the clinic environment and advances the student’s abilities with communication, professional conduct, and problem solving within the physical therapy clinic. PTA in the Healthcare Arena uses the clinical environment as a framework for the application and synthesis of conceptual aspects of the work environment. Clinical education experiences are acquired in a weekly part-time integrated clinical experience and integrated into the classroom to illustrate the current health care delivery system's impact on the field of physical therapy and the role of the physical therapist assistant. Throughout the semester students will learn to differentiate professional, legal, and ethical standards and analyze how these direct the delivery of patient care. (Beginning fall 2019)

**PTA\*H260 Physical Therapy Seminar 2 credits** *Prerequisites: PTA\*H251, PTA\*H255 and PTA\*H258 with a grade of “C” or higher. Corequisite:PTA\*H262 and PTA\*H265.*

In this course students demonstrate the ability to apply critical thinking to selected professional issues, industry trends, and special populations that may be encountered as a physical therapist assistant. Learning opportunities assist in the transition from student to clinician and identification of interest areas for lifelong learning. (Beginning fall 2019)

**PTA\*H262 PTA Internship II 5 credits**

*Prerequisites: PTA\*H250, 253 and 258 with a grade of “C” or higher.* Within this clinic-based course students learn to integrate and apply physical therapy concepts and to effectively perform physical therapy interventions as a physical therapist assistant. Students develop their abilities for daily organization and management of a patient caseload and effectively contribute to the health care team.

**PTA\*H265 PTA Internship III**    **5 credits**

*Prerequisites: PTA\*H250, 253 and 258 with a grade of “C” or higher.* Within this clinic-based course students learn to problem-solve and competently function in the clinic environment as a physical therapist assistant. Students develop competence with time management, clinical prioritization and the entry-level abilities of the physical therapist assistant prior to course completion.

# PHYSICS

## Science, Technology, Engineering & Mathematics Division

**PHY\*H110 Introduction to Physics 4 credits** *Prerequisite: MAT\*H095 or equivalent. MAT\*H137 is recommended.* The course is designed for the student seeking basic introduction to the principles of physics, and offers firsthand experience on learning in a laboratory. Specific topics covered include: a review of essential arithmetic operations and systems of measurements, linear motion, conservation of energy and linear momentum, Newton’s three laws of motion, gas laws, heat, light, electricity, magnetism and atomic theory, as time permits. Three hours of lecture and three hours of laboratory weekly. (fall/spring/ summer)

**PHY\*H121 General Physics I 4 credits**

*Prerequisite: MAT\*H137 or equivalent. Corequisite: MAT\*H172.* This course is designed for students in technical fields and pre-medicine programs. The course begins with a review of algebra, basic trigonometry and vectors. Topics covered include kinematics, projectile motion, Newton’s Laws, energy, momentum, rotational dynamics, heat and thermodynamics, as time allows. Three hours of lecture and three hours of laboratory weekly. (fall/spring)

**PHY\*H122 General Physics II 4 credits**

*Prerequisite: PHY\*H121.* This course is a continuation of PHY\*H121. An overview of thermodynamics is given. Topics include waves, harmonic motion and Coulomb’s Law. The laws describing electric and magnetic fields are studied and how these laws apply to DC and AC circuits, and the properties of light are presented. The properties of light discussed include reflection, refraction, interference and diffraction. Three hours of lecture and three hours of laboratory weekly. (spring)

**PHY\*H221 Calculus-Based Physics I 4 credits** *Prerequisite: MAT\*H254 or equivalent.* This course is designed for students in technical fields, mathematics, or the physical sciences. Topics covered: Overview of the calculus necessary for physics, kinematics, Newton's laws, conservation laws, rotational dynamics, harmonic motion, gravitation, fluid mechanics, waves, sound, heat and thermodynamics. The lab portion of the course will concentrate on gathering data, analysis of data, and the discussion of results. The topics covered in lab will be coincident with the topics covered in the course. Three hours of lecture and three hours of laboratory weekly. (summer)

**PHY\*H222 Calculus-Based Physics II 4 credits**

*Prerequisite: PHY\*H221 or equivalent.* This course is designed for students in technical fields, mathematics, or the physical sciences. Topics covered: Overview of the calculus necessary for physics, heat, kinetic theory of gasses and thermodynamics (if not covered in PHY221). Electrostatics, magnetostatics, circuits (DC and AC), electrodynamics, waves and optics. The lab portion of the course will concentrate on gathering data, analysis of data, and the discussion of results. The topics covered in lab will be coincident with the topics covered in the course. Three hours of lecture and three hours of laboratory weekly. (summer)

# POLITICAL SCIENCE

## Liberal Arts and Behavioral/Social Sciences Division

**POL\*H102 Introduction to Comparative Politics 3 credits** *Prerequisite: 3 credit hours in any history or political science course.* A survey of the structure and functioning of the governments is presented. Such contemporary nation states as Russia, Great Britain, France, and Germany are analyzed. A brief history of each government is included.

**POL\*H103 Introduction to International**

 **Relations 3 credits**

This course is an introduction to the present nation state system with an analysis of the political, social and economic pressures that produce international tensions and crises. Consideration of the traditional balance of power approach to world peace will be contrasted to the regional and global organizations that have appeared since World War II.

**POL\*H111 American Government 3 credits** Students are acquainted with the organization, structure, and functions of the American national government and of the American political parties. Attention is paid to the Constitution, the congress, the courts and the presidency and administration.

**POL\*H112 State and Local Government 3 credits** The structure and functions of the various state and local governments in the United States are studied. Special emphasis is placed on the state government in Connecticut and on the various types of local government in the state.

**POL\*H291-292 Practicum in**

 **Government I & II 6 credits**

*Prerequisites: At least 15 credit hours of college work and a 2.6 average, plus a “B” grade in either ENG\*H101 or BBG\*H210.* Practical experience as a staff assistant to a member or committee of the Connecticut General Assembly or to a municipal government executive or agency is provided. At least 200 hours of practical work plus a biweekly seminar meeting of all student interns of NVCC are required. A 10-15 page term paper report will also be required at the end of the semester.

# PSYCHOLOGY

## Liberal Arts and Behavioral/Social Sciences Division

**PSY\*H111 General Psychology I 3 credits** *Prerequisite: eligibility for ENG\*H101.* A general study of psychology in which the important basic principles of scientific methodology, theories of psychology, biological foundations of behavior, human development, states of consciousness, learning, memory, intelligence, and social psychology are presented.

**PSY\*H201 Lifespan Development 3 credits**

*Prerequisite: PSY\*H111.* A study of the changes in the individual from infancy through late adulthood will be examined. Methodology and the physical, cognitive, and social development of the individual will be studied.

**PSY\*H203 Child Psychology 3 credits**

*Prerequisite: PSY \*H111.* This course examines the changes that occur in the individual from birth to the beginning of adolescence. Physical, cognitive, and social changes will be studied in the context of sociocultural and other environmental influences that shape individual development.

**PSY\*H204 Child & Adolescent Development 3 credits** *Prerequisite: PSY\*H111.* A study of the changes in the individual from infancy through adolescence will be examined. Methodology and the physical, cognitive, and social development of the individual will be studied.

**PSY\*H206 Adolescence & Adulthood**

 **Development 3 credits**

*Prerequisite: PSY\*H111.* This is a continuation of PSY\*H204 with the emphasis on the period from adolescence through aging. Effective and intellectual functions from both the physiological and environmental view are examined.

**PSY\*H217 Psychology of Criminal Behavior 3 credits** *Prerequisite: PSY\*H111.* This course presents a study of the psychological aspects and correlates of criminal behavior. Models are presented for predicting, understanding, and responding to criminal behavior.

**PSY\*H240 Social Psychology 3 credits**

*Prerequisite: PSY\*H111.* Dynamics of individual motivation in social situations, the theoretical bases for social behavior, applications of principles of behavior to attitude change, prejudice, public opinion, and individual reactions in mass behavior are examined.

 **Theories of Personality 3 credits** *Prerequisite: PSY\*H111.* This course presents a study of the underlying causes of individual behavior and experience. A wide range of theories is considered, including those from the psychoanalytic perspective, the trait perspective, the learning perspective and the humanistic perspective.

**PSY\*H245 Abnormal Psychology 3 credits** *Prerequisite: PSY\*H111.* The varieties of abnormal behavior found in man are studied. Such disorders as depression, anxiety disorders, psychotic conditions, alcoholism, drug addiction, the personality disorders, and sexual deviations are considered.

**PSY\*H247 Industrial & Organizational**

 **Psychology 3 credits**

*Prerequisite: PSY\*H111.* This course surveys the scientific methodology of work behavior as applied to selection, training, evaluation, and organizational factors such as leadership, communication, social environment, group dynamics and norms, stress, motivation, job design and satisfaction, supervision, conflict resolution, and technological change.

***Course***

***Descriptions***

### PSY\*H258 Behavior Modification 3 credits

*Prerequisite: PSY\*H111.* A study of learning theories in which operant and classical conditioning are presented. The focus is on the use of the concepts and principles of applied behavior analysis in teaching functional skills and decreasing maladaptive behaviors in such situations as the home, school, group homes, and mental health settings. Research methods, history, and ethical issues of behavior modification are also reviewed.

**PSY\*H260 Psychology of the Exceptional Child 3 credits** *Prerequisite: PSY\*H111.* The psychology of children with disabilities including mental retardation, learning disabled, physically challenged, autism, communication, health disabilities, and emotional/behavioral disorders is presented.

**PSY\*H261 Introduction to the Autism Spectrum 3 credits** *Prerequisite: PSY\*H111 or permission of the instructor.* A study of autism spectrum disorders in which students learn the principles and techniques currently employed to help children with autism spectrum disorders acquire functional language, appropriate social behavior, and general academic and living skills. The course will emphasize assessment, empirically supported best practices, Applied Behavior Analysis (ABA), functional behavior assessments, social skills development, communication, parent involvement, and understanding the individual.

**PSY\*H262 Applied Behavior Analysis 3 credits** *Prerequisite: PSY\*H258 or permission of the instructor.* This course covers the purpose, rationale and methods used in conducting and interpreting functional analyses of challenging; advanced coverage of measurement methods used in behavioral intervention, and the application of specific behavioral teaching procedures, including prompting, reinforcement, shaping, chaining, error correction and generalization methods, and the development of behavior plans.

# QUALITY ASSURANCE

## Science, Technology, Engineering & Mathematics Division

**QUA\*H114 Principles of Quality Control 3 credits**

This first course in statistical quality control provides an overview of the tools and techniques required in contemporary quality systems. Topics covered include determination of process capabilities, estimation of process standard deviation from sample data, use of control charts, and calculation of probability of simple events. Students will develop SPC and TQM Manufacturing plans. *Part of the Advanced Manufacturing Machine Technology cohort program.*

# RADIOLOGIC TECHNOLOGY

## Allied Health/Nursing/Physical Education Division

**RAD\*H112 Orientation to Radiology 3 credits**

*Prerequisite: Admission into the program.* This course provides an orientation to radiology, basic radiation protection, ethics, medical terminology, communication, and patient care.

**RAD\*H113 Rad. Physics / Radiographic Quality I 3 credits** *Prerequisites: RAD\*H112 and RAD\*H197.* The course content includes the production of x-rays, the x-ray circuit, radiographic equipment, and the interaction of x-rays with matter. Once learned, the student will utilize the preceding content, applying it to how the x-ray produces the image. The subject material includes introductory principles of radiographic quality, a general overview of radiographic film, intensifying screens, film processing, setting technical factors, and performing technical conversions.

**RAD\*H114 Contrast Media Procedures &**

 **Radiographic Quality II 3 credits**

*Prerequisites: RAD\*H113 and RAD\*H198.* The course content is divided between two main topics. The first half of the summer session will cover radiologic procedures involving the use of contrast media. Also discussed will be the hazards, complications, and risk factors of contrast media. The second half of the session is a continuation of Radiographic Quality I. Topics include image formation, technical conversions and critiquing the radiograph. *Part of the Advanced Manufacturing Machine Technology cohort program*

**RAD\*H200 Radiologic Physics &**

**Diagnostic Imaging Modalities 3 credits** *Prerequisites: RAD\*H114 and RAD\*H199* This course provides the student with advanced study of fluoroscopy, physics, computed radiography, digital radiography, digital fluoroscopy, and quality assurance/quality control techniques used to evaluate radiographic imaging equipment

**RAD\*H215 Radiographic Pathology 3 credits** *Prerequisites: RAD\*H200, RAD\*H222, and RAD\*H297* This course provides an overview of pathological conditions that are demonstrated with diagnostic imaging. Lecture material will include the cause and treatment of the disease. Pediatric radiology is also presented.

**RAD\*H217 Seminar in Radiology 3 credits**

*Prerequisites: RAD\*H215 and RAD\*H298.* A case study approach provides a comprehensive investigation of patient care, emphasizing radiologic procedures.

**RAD\*H222 Radiobiology & Protection 3 credits**

*Prerequisites: RAD\*H114 and RAD\*H199* Topics include Radiobiology, health physics, radiation safety, safety requirements for equipment, and protection.

# RADIOLOGIC TECHNOLOGY CLINICAL COURSES

## Allied Health/Nursing/Physical Education Division

Practicum (clinical practice) in the Radiologic Technology Program involve a series of learning experiences and developed skills in hospitals, offices and imaging centers. *Students are periodically assigned to all sections within the department. (These experiences are offered in RAD\*H197 through RAD\*H299 in sequence.)*

**RAD\*H197 Clinical Practice I (fall) 2 credits**

Clinical Post conference focuses on orientation to radiology, positioning of chest, abdomen, and extremities.

**RAD\*H198 Clinical Practice II (spring) 2 credits**

Clinical Post conference focuses on positioning of the pelvic girdle, hip, vertebral column & trauma radiography.

**RAD\*H199 Clinical Practice III (summer) 2 credits**

Clinical Post conference focuses on positioning of skull and cross sectional anatomy.

**RAD\*H297 Clinical Practice IV (fall) 3 credits**

Clinical Post conference focuses on positioning of skull and cross sectional anatomy.

**RAD\*H298 Clinical Practice V (spring) 3 credits**

Clinical Post conference focuses on cross sectional anatomy, CT & MRI physics.

**RAD\*H299 Clinical Practice VI (summer) 2 credits**

Clinical Post conference focuses on cross sectional anatomy, CT & MRI physics.

# RESEARCH

## Liberal Arts and Behavioral/Social Sciences Division

**RES H211 Mentored Research Project I 3 credits**

*Prerequisite: Permission of the instructor.* Mentored Research Project I engages students in the development of a research proposal for hypothesis-driven research in their chosen discipline. Over the course of the semester the student will use existing peer reviewed literature to develop a research question, hypothesis, and a data collection plan, including the development of questionnaires or other tools for data collection. Students are encouraged to enroll in RES\*H212 (Mentored Research Project II) during the subsequent semester. In that course they will collect and analyze the data for this project.

**RES H212 Mentored Research Project II 3 credits** *Prerequisite: Completion of RES\*H211 with a grade of C or better or permission of the instructor.* Mentored Research Project II engages students in data collection, analysis, and presentation of hypothesis driven research on a topic in their chosen discipline. The student will use a previously established research plan to complete a project culminating in a written paper and poster presentation. The previous work will usually be completed in Mentored Research Project I (RES\*H211) but enrollment will be considered for students who have completed that phase in a different course or under the mentorship of a faculty member without a formal course.

# RESPIRATORY CARE

## Allied Health/Nursing/Physical Education Division

**RSP\*H112 Fundamentals of Respiratory Care 4 credits**

*Prerequisite: Admission to the Program.* *Corequisite: RSP\*H121.* A lecture-laboratory course that provides an introduction to basic principles of clinical respiratory care integrating physical principles of respiratory care throughout the course. Topics covered include: principles of infection control, medical gas therapy, aerosol and humidity therapy and basic patient assessment. Three hours of lecture and two hours of laboratory exercises weekly.

**RSP\*H121 Cardiopulmonary Anatomy and**

 **Physiology 3 credits**

*Prerequisite: Admission to the Program. Corequisite: RSP\*H112.* This course includes an in-depth study of the anatomy and physiology of the pulmonary and cardiac system. Topics will include but are not limited to: the circulatory system, applied physiology and physical principles of the respiratory system and gas exchange. Emphasis will be placed on structure and function.

**RSP\*H131 Applied Pharmacology 3 credits**

*Prerequisites: RSP\*H112, RSP\*H121 with grades of “C” or better. Corequisite: RSP\*H141.* This course includes the study of the composition, indications for and effects of medication administered to patients treated in the field of respiratory care. Emphasis is placed on drugs prescribed for the cardiopulmonary, renal and neurological system.

**RSP\*H141 Principles of Respiratory Care 4 credits**

*Prerequisites: RSP\*H112, RSP\*H121 with grades of “C” or better. Corequisites: RSP\*H180 and RSP\*H131.* This course introduces the student to basic principles of clinical respiratory care. Topics include but are not limited to: medical gas therapy, patient assessment, OSHA and infection control standards, oxygen therapy, aerosol therapy, bronchial hygiene therapy, hyperinflation therapy, ethics and professionalism, medical documentation. An integrated laboratory experience is included.

**RSP\*H151 Cardiopulmonary Pathophysiology
and Diagnostics 3 credits**

*Prerequisites: RSP\*H131, RSP\*H141 with grades of “C” or better. Corequisite: RSP\*H181.* This course focuses on the etiology, pathophysiology, clinical manifestations and treatment of various cardiopulmonary diseases and diseases that directly affect the cardiopulmonary system. Case application will be included.

**RSP\*H180 Clinical Practicum 1 credit** *Prerequisite: Admission to the program.* *Corequisites: RSP\*H141 and RSP\*H131.* This course provides supervised clinical experience in providing basic respiratory care to patients. Clinical experiences will focus on the areas of chart review, documentation and reporting, bedside assessment, breathing exercises, infection control techniques, medical gas therapy, and aerosol drug delivery.

**RSP\*H181 Clinical Practicum II 2 credits** *Prerequisites: RSP\*H180, RSP\*H141, RSP\*H131 with grades of “C” or better. Corequisite: RSP\*H151.* This course provides supervised clinical experience in providing respiratory therapy to medical floor patients. Clinical experiences will focus on bronchial hygiene therapy, hyperinflation therapy, bi-level ventilation, airway management, and arterial blood gas sampling. Students will also rotate to ancillary clinical sites focusing on respiratory therapy provided at extended care and rehabilitation facilities.

**RSP\*H201 Future Trends 2 credits**

*Prerequisites: RSP\*H262, RSP\*H270, RSP\*H281 with grades of “C” or better.* *Corequisites: RSP\*H282 and RSP\*H291.* This seminar course focuses on the various current issues affecting respiratory care. Topics include but are not limited to: smoking cessation, pulmonary rehabilitation, communication styles for various age ranges, research methods and statistics.

**RSP\*H262 Advanced Principles of**

 **Respiratory Care 4 credits**

*Prerequisites: RSP\*H151, RSP\*H181 with grades of “C” or better. Corequisites: RSP\*H270 and H281.* The course focuses on conventional and alternative forms of mechanical ventilation. Indications, application, discontinuation and physical effects of mechanical ventilation will be covered. In addition, noninvasive, home and pediatric mechanical ventilation strategies will be covered. This course includes an integrated laboratory that includes demonstrated competency with equipment prior to clinical application.

**RSP\*H270 Hemodynamic and Critical**

 **Care Monitoring 3 credits**

*Prerequisites: RSP\*H151, RSP\*H181 with grades of “C” or better. Corequisites: RSP\*H262 and RSP\*H281.* This course focuses on hemodynamic monitoring and assessment on the adult critical care unit. Topics include: EKG rhythm interpretation, central venous pressure monitoring, pulmonary artery pressure monitoring, ACLS overview and intracranial pressure monitoring.

**RSP\*H271 Pulmonary and**

**Cardiovascular Diagnostics 2 credits** *Prerequisite: RSP\*H151 with grade of “C” or better.* This course provides the student instruction on assessment of pulmonary function studies and other diagnostic procedures used within a pulmonary/ cardiovascular laboratory setting. Topics include: stress testing, metabolic testing, rehabilitation techniques, sleep studies and research techniques.

**RSP\*H281 Advanced Clinical Practicum 2 credits**

*Prerequisites: BIO\*H212, RSP\*H151, RSP\*H181 with grades of “C” or better. Corequisites: RSP\*H262 and RSP\*H270 .* This course provides supervised clinical experience in providing respiratory therapy to intensive care patients. Clinical experiences will focus on mechanical ventilation of the adult patient.

**RSP\*H282 Advanced Clinical Practicum II 2 credits** *Prerequisites: RSP\*H262, RSP\*H270, RSP\*H281 with grades of “C” or better. Corequisites: RSP\*H201 and RSP\*H292.* This course provides supervised clinical experiences in the adult, neonatal, and pediatric intensive care units. Clinical experiences will focus on hemodynamic monitoring and assessment, respiratory care in the emergency setting, and continuous mechanical ventilation of the adult, neonate, and pediatric patient. Students will also complete an Advanced Cardiac Life Support (ACLS) course during this clinical practicum.

**RSP\*H291 Perinatal and Pediatric**

**Respiratory Care 2 credits** *Prerequisites: RSP\*H270, RSP\*H262, RSP\*H281 with grades of “C” or better. Corequisite: RSP\*H282.* This course provides the student with a comprehensive study of pediatric and neonatal respiratory care. Topics include but are not limited to: diagnostic and therapeutic procedures, cardiopulmonary pathophysiology, ventilator management, critical care techniques, PALS and NRP techniques and embryology.

***Course***

***Descriptions***

# SIGN LANGUAGE

**Liberal Arts and Behavioral/Social Sciences Division**Refer to Languages.

# SOCIOLOGY

## Liberal Arts and Behavioral/Social Sciences Division

**SOC\*H101 Principles of Sociology 3 credits** *Prerequisite: Eligibility for ENG\*H101.* A general introduction to the science of sociology, including the “sociological imagination,” theory and methods. Students are taught what is unique about the way in which sociologists view and analyze human behavior. The role of the social structure and how it affects our lives will be emphasized. There will also be an emphasis on how sociologists develop and test their hypotheses, as well as on various aspects of social life such as culture, groups and institutions, deviance and social control, inequality, ethnicity, and family.

**SOC\*H201 Contemporary Social Issues 3 credits** *Prerequisite: SOC\*H101.* This course presents an analysis of current sociological issues with emphasis on social stratification, inequality and sociocultural dynamics. Topics include ageism, sexism, population growth and decline, racism, modernization, and technology.

**SOC\*H210 Sociology of the Family 3 credits** *Prerequisite: SOC\*H101 or equivalent.* Students will examine marriage and family relationships from a sociological perspective, concentrating on first meetings through marriage, having and rearing a family, divorce, and remarriage. Topics considered include: gender roles, love relationships, sexual fulfillment, communication, dual-income marriages, and step-families.

**SOC\*H211 Sociology of Gender 3 credits** *Prerequisite: SOC\*H101.* This course explores the social organization, construction and politics of gender within historical and cultural contexts, and explains how gender inequalities are maintained and perpetuated through social institutions and processes of socialization. topics include gender and sexuality, family, work, politics, power, education, media, violence, intersectionality, and inequality

**SOC\*H221 Social Inequality 3 credits** *Prerequisite: SOC\*H101.* This course addresses the causes and consequences of inequality based on race, gender, ethnicity, age, religion, and disability through an examination of the social structure, culture, history, and social institutions of American society.

**SOC\*H225 Death and Dying**

 *(also listed as HSE\*H171)*  **3 credits**

An exploration of the stages of death and dying. Special emphasis will be placed on understanding grief and loss. The course will focus on the following: the dying person, sudden death and the effect on the family, cultural and economic issues, the broad moral aspects of death, and other related problems. (spring)

**SOC\*H240 Criminology 3 credits**

*Prerequisite: SOC\*H101 or by permission of instructor.* Students will examine problems of law and order from a sociological perspective. The formation of laws, the causes of crime, and societal responses to crime will be considered. Topics to be considered include law-making as a social process, social and psychological explanations of criminal behavior, courts, punishment, imprisonment, and rehabilitation. (fall)

# SPANISH

**Liberal Arts and Behavioral/Social Sciences Division**

Refer to Languages.

# THEATER ARTS

## Liberal Arts and Behavioral/Social Sciences Division

The Division of Liberal Arts and Behavioral/ Social Sciences encourages students to register for theater courses in order to develop appreciation of, and skills in, the theater arts. Some of the courses are required in career programs; others are designed for students’ interests and personal development. Theater students are required to engage in both performance and technical theater course work. Consultation with counselors will help determine specific needs.

**THR\*H101 Introduction to Theater 3 credits** A survey of the historical development of Western dramatic literature from the Greeks to the present. This course also explores the essential hands-on components of the theater, including playwriting, acting, design, and crew, utilizing both creative and analytical projects.

**THR\*H110 Acting I 3 credits**

A practical approach to the art of acting, with special attention to the development of the actor’s instrument, including voice, body, the senses, creativity, and interpretation. The course combines individual and group exercises and assignments.

**THR\*H120 Stagecraft 3 credits**

This course will examine the basic components of stagecraft and production techniques, with a focus on set construction and painting, lighting, properties, costumes, and production management. The course involves classroom study but includes hands-on application on stage productions. Three laboratory hours required.

**THR\*H190 Theater Practicum I 3 credits** This course involves students in play production. Such areas as set construction, lighting, costuming, box office, running crew and stage managing will be explored through the process of rehearsing and mounting a play for performance. Three lab hours required.

**THR\*H210 Acting II 3 credits**

*Prerequisite: THR\*H110.* A continuation of the practical approach to the art of acting as outlined in Acting Techniques I. Emphasis on scene study and character development. Three additional rehearsal hours required.

**THR\*H225 Directing 3 credits**

*Prerequisites: THR\*H101 and THR\*H110.* Basic methods and techniques in directing a play, with special emphasis on script analysis, methods of rehearsing, and working with actors. Assignment directing short scenes. Three rehearsal/laboratory hours required.

**THR\*H226 Musical Theater Production 3 credits**

*Prerequisite: by audition for performers.* The practical application and collaboration of several performance areas and/or technical skills as they relate directly to a musical theater production. Areas include: acting, singing, dancing; set construction, lighting crew, sound crew, costume crew and stage management.

### THR\*H231 Drama 3 credits

*Prerequisite: ENG \*H102 or ENG\*H200.* The study of dramatic literature, analysis and critical writings about the great plays from the canon of world drama. Assigned readings may include plays by Euripides, Shakespeare, Molière, Ibsen, Chekov, Williams, and Hansberry.

**THR\*H290 Theater Practicum II 3 credits** *Prerequisite: THR\*H190 or permission of instructor.* This course provides a continuation of the activities as described in THR\*H190, with an emphasis on either selected styles and methods, or playwriting and performance. Three lab hours required.

**THR\*H295 Theater Practicum III 3 credits** *Prerequisite: THR\*H290.* This course provides a further continuation of the activities as described in THR\*H290, with an emphasis on either selected styles and methods, or playwriting and performance as determined by the instructor. Three lab hours required.