

GCC Catalog 2017-2018



GatewayCT.edu

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The college reserves the right to modify any statement contained herein. Students are responsible for complying with all regulations contained in this catalog and the dates cited in the official academic calendar.



A Message from the President

I am pleased to welcome you to Gateway Community College (GCC). Within these pages you will find a wealth of information about the college, its over 90 degree and certificate programs, policies and procedures, and all of the specifics you will need to navigate your time at GCC, from admission to graduation.

While the college catalog is an important resource and reference for your GCC experience, I want to assure you that it isn't the whole story. It gives you names and qualifications of the faculty and staff, but it doesn't express how much they care, the support they provide for every student on the GCC campus, and their unwavering commitment to helping each student achieve success.

This catalog provides a comprehensive review of our excellent academic programs and courses, expansive student activities, and the wealth of resources and opportunities available at GCC. As you attend workshops, interact with our exceptional faculty, engage in lectures, and become involved with on-campus clubs and organizations, you will quickly realize that you are embarking on a life changing experience that will expand your horizons and provide a foundation for your academic and personal growth. Here at GCC you will make new friends and embark on new experiences that will forever change your life. We are excited to take this journey with you and will be there to provide support and share in your journey.

While studying at GCC, you will spend each day in a modern, state-of-the-art, light-filled campus that houses the latest technologies throughout the smart classrooms, computer labs and tech labs that simulate the real-world working environment. GCC students also have access to all of the benefits of studying in an historic college town including access to world-class museums, art galleries, theaters and year-around cultural activities all within walking distance.

GCC is committed to providing you with the education and skills needed to meet the needs of the business and professional community, thereby making you valuable in the workplace. Whether you're attending GCC to earn credits toward transfer to a four-year institution, or brushing up skills for professional development or personal enrichment, you will find the programs to help you realize your dreams and ambitions, and the people to help you get there.

I welcome you to Gateway Community College!

Sincerely,

Paul Broadie II, Ph.D., President

ACADEMIC CALENDAR 2017 - 2018

FALL 2017

August 25	Semester Begins
August 28	Professional Day
August 29	First Day of Regular Semester - Classes Begin
September 2 - 4	Labor Day Recess (COLLEGE CLOSED)
September 5	Last Day to Add Classes
October 17	Reading Days
October 20	Mid-Term Deficiency Reports Due from Faculty
November 3	Last Day to Make Up Incomplete Grades from Spring 2017
November 10	Last Day to Withdraw from Individual Classes
November 22	Faculty Planning Day (NO CLASSES)
November 23 - November 26	Thanksgiving Recess (NO CLASSES-COLLEGE CLOSED)
December 11	Last Day of Classes
December 12 - 18	Final Examinations
December 21	Last Day to Submit Final Grades (by 12:00 noon)
December 23	Semester Ends

SPRING 2018

January 15	Martin Luther King Day (COLLEGE CLOSED)
January 16	Professional Day
January 17	First Day of Regular Semester - Classes Begin
January 24	Last day to Add Classes
February 16 - 19	President's Day Recess (COLLEGE CLOSED)
March 9	Mid-Term Deficiency Reports Due from Faculty
March 12 - 18	Spring Recess (No Classes)
March 23	Last Day to Make up Incompletes from Fall 2017
March 30	Day of Reflection (NO CLASSES)
April 2	Last Day to Withdraw from Individual Classes
May 5	Last Day of Classes
May 7 - 12	Final Examinations
May 15	Last Day to Submit Final Grade (By 12 noon)
TBD	Graduation
May 28	Memorial Day (COLLEGE CLOSED)
June 1	Semester Ends

INTRODUCTION

ABOUT THIS CATALOG

This catalog contains both academic and general information and Gateway Community College's policies at the time of publication. Each student is responsible for becoming thoroughly familiar with the catalog and the rules, regulations, and program requirements it contains. A student has the right to be graduated by the College under the conditions and requirements contained in the catalog in use at the time of initial registration. A student may elect to graduate under the conditions and requirements of a program contained in a subsequent catalog. However, in no case will a student be permitted to use requirements for graduation from more than one catalog.

ABOUT THE COLLEGE

Gateway Community College (GCC) provides the residents and businesses of the Greater New Haven area with innovative educational programs and social and cultural opportunities at its locations in New Haven and North Haven. On July 1, 1992, the New Haven location at Long Wharf, formerly known as South Central Community College, combined resources with Greater New Haven State Technical College in North Haven. This merged institution is one of twelve public community colleges in Connecticut.

In the academic year 2016-2017, the college served the educational needs of 10,139 full- and part-time students through more than 90 programs leading to a certificate or to an associate degree. An additional 1,702 more students enrolled in non-credit courses through the GREAT Center. Non-credit courses for professional development or personal enrichment, through Gateway's Resource, Education and Training Center. During the last academic year, 79% of students were enrolled in one of the College's degree or certificate programs or program options. Courses are offered at convenient times for both full- and part-time study during the day, evening, and Saturdays. The College's 387 full- and part-time faculty members and 145 staff are committed to continuing the proud tradition of the institution, serving the residents and businesses of Greater New Haven County.

The downtown campus offers all credit and non-credit courses towards associate degrees and certificates in academic and career programs. The North Haven location currently houses our Automotive programs. All degree programs are transferable to four-year colleges and universities. Curricula have been designed with local employment needs in mind. Developmental courses in English, and mathematics are offered to enhance student academic skill levels. English as a Second Language courses are also offered.

The community also benefits from Gateway's numerous credit-free offerings. The Workforce Development Institute provides workforce development, business development and technology transfer programs.

Courses and programs are offered in response to the educational, economic, and socio-cultural needs of the region.

MISSION AND PURPOSE

The College community adopted the following mission statement in February 1997:

Gateway Community College offers high-quality instruction and comprehensive services in an environment conducive to learning. We respond to the changing academic, occupational, technological, and cultural needs of a diverse population.

To realize this mission, Gateway Community College:

- Offers a broad range of credit and credit-free liberal arts and sciences, technical, and career associate degree and certificate programs and courses leading to transfer, employment, and lifelong learning;
- Encourages student success and inclusion through stimulating learning opportunities, innovative teaching, support services, and co-curricular activities;
- Supports economic development through partnerships with business, industry, government, and our community by providing workforce development, business development, and technology transfer;
- Strengthens our community through the sponsorship of intellectual, cultural, social, and recreational events and activities;
- Engages students and community members as active, responsible leaders.

ACCREDITATION

Gateway Community College is accredited by the New England Association of Schools and Colleges Inc. (NEASC) through its Commission on Institutions of Higher Education.

Accreditation of an institution of higher education by NEASC indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer group review process. An accredited college or university is one that has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is addressed through accreditation.

Inquiries regarding the accreditation status by NEASC should be directed to the administrative staff of the institution. Individuals may also contact:

Commission on Institutions of Higher Education
New England Association of Schools and Colleges, Inc.
209 Burlington Road
Bedford, MA 01730-1433
(781) 271-0022
e-mail: cihe@neasc.org

PROGRAM ACCREDITATIONS

The Automotive Programs (General Motors (ASEP) and the Alternative Fuel Certificate Program) are certified by the National Automotive Technicians' Education Foundation Inc. (NATEF).

The Nutrition and Dietetics Program is currently granted accreditation by the Accreditation Council for Education in Nutrition and Dietetics, the accrediting agency for the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, Illinois 60606-6995, (312) 899-0040 ext. 5400 or (800) 877-1600; www.eatright.org.

The Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182, (312) 704-5300, www.JRCERT.org and the Joint Review Committee on Education in Nuclear Medicine Technology accredit the Radiologic Technology Programs (Diagnostic Medical Sonography, Nuclear Medicine Technology, Radiation Therapy Technology and Radiography). The Diagnostic Medical Sonography Program is also accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) ([https://www.caahep.org/documents/file/For-Program-Directors/DMSStandards\(1\).pdf](https://www.caahep.org/documents/file/For-Program-Directors/DMSStandards(1).pdf)) (Recognized by the American Registry of Radiologic Technology, the Nuclear Medicine Technology Certification Board, and the American Society of Radiologic Technology.)

The Drug and Alcohol Recovery Counselor Program is approved by the Connecticut Certification Board, a member of the International Certification and Reciprocity Consortium/Alcohol and Other Drug Abuse, Inc.

Accreditation Commission for Education in Nursing (ACEN) located at 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326. Telephone: 404-975-5000; www.acenursing.org.

The Early Childhood Education Program is awarded Early Childhood Associate Degree Accreditation by the National Association for the Education of Young Children, 1313 L Street, N.W., Washington DC 20005.

The Early Learning Center is accredited by the National Association Education for Young Children.

LICENSURE

Curricula are approved and licensed by the Board of Governors for Higher Education in the state of Connecticut. The state of Connecticut, Department of Education, Veterans Education Division, approves the College's programs for the education and training of veterans under provisions of Section 1775, Chapter 36, Title 38, USC.

ABOUT OUR STUDENTS

In the academic year 2016-2017, the college served the educational needs of 10,139 full- and part-time students through more than 90 programs leading to a certificate or to an associate degree. There were 1,702 more students enrolled in non-credit courses for personal enrichment, continuing education or training geared to business and industry.

In the fall 2016, females comprise 58% of the College enrollment; 56.1% of students are ethnic minorities; and 71.2% attend GCC on a part-time basis. The average student age is 26.5.

GCC encourages and supports almost 30 percent of students attending to obtain basic skills, English, mathematics, and sciences for admission to baccalaureate programs.

ATM Machines

ATM machine is located in the North building entrance by security station.

CAFETERIA

While classes are in session, food service is open Monday through Thursday 8:00 A.M. to 2:00 P.M., and from 3:00 P.M. to 7:00 P.M., and on Fridays from 8:00 A.M. to 1:00 P.M. Special hours are posted when classes are not in session. Hot and cold sandwiches, salads, side dishes, soups, and soda are available. Snacks and beverages are also available from vending machines.

COLLEGE CLOSING

If, because of inclement weather or other emergencies, the College announces a delayed opening, class/activity cancellation, or governor's order for closing, the following radio and television stations are notified: WELI, WKCI, WICC, WEBE, WKSS, WPLR, STAR, WTIC, WTNH TV 8, WFSB TV 3, and WVIT TV 30. Please tune in to these stations for up-to-the-minute reports. Students may also call the Weather Telephone Line at (203) 285-2049.

EARLY LEARNING CENTER PRESCHOOL

Telephone (203) 285-2131

Weather Hotline (203) 285-2610

Students with three-to-five year olds can benefit by enrolling their child in an onsite laboratory preschool. The Early Learning Center, located on the first floor of the College, is a fully licensed NAEYC accredited preschool program for young children open five days a week. The curriculum is based on the belief that each child is an individual and should be allowed to develop at his or her own pace, thus it is centered on the interests, needs, and abilities of its participants. A variety of sensory experiences encourages children to think, analyze problems, and arrive at logical conclusions. To accomplish this, the Early Learning Center provides a stimulating learning environment through three classroom models: Child Development, Modified Montessori, and Diversified Creative Curriculum. Breakfast, lunch, and an afternoon snack are included in the program.

The center's hours are Monday through Friday from 7:30 a.m. to 5:30 p.m. The weekly cost to students enrolled for a minimum of three credits at Gateway Community College is \$165 per week for full time preschool; the community rate for non-students is \$270 per week for full-time preschool.

For more information, contact the Director at (203) 285-2131.

PARKING

Individual Type and Parking Garage Access:

- Credit Students: Parking access for registered credit students will begin two weeks before the start of classes and end the day of finals
- Summer Session Students: parking access will begin the first day of class and end the last day of class for the sessions for which they have registered
- Winter Session Students: parking access will begin the first day of class and end the last day of class for the sessions for which they have registered
- Non-Credit (CCE) Students: parking access will begin the first day of the course and end the last day of course for which they have registered
- Faculty & Staff: parking access is granted based on active employee dates
- Student Employees: parking access is granted based on active employee dates
- Affiliated Staff: parking access is granted based on inputted field in Banner. Manual deactivation will be required.

Reserved parking:

- Available on the first level and designated spaces on second and third levels of the Gateway garage, for full-time faculty and staff only
- Eligible faculty/ staff must display their parking hanger or will be ticketed
- Part-time faculty and staff will park in remaining Gateway Garage spaces or in the Temple Street Garage

Visitor Parking

- Anyone visiting the college for business before the semester begins will be considered a visitor.
- Visitors will park in the Temple Street Garage and receive a ticket.
- Tickets will be validated by Gateway at the Security areas.

Cards are valid for the hours of Garage Operation (see below)

Hours of College Parking Garage Operation

Spring and Fall Semesters

Gateway Garage

Monday – Friday 6:00 a.m. - 11:30 p.m.

Saturday 7:00 a.m. - 5:00 p.m.

Sundays Closed

Temple Street Garage

24 hours - 7 days/week

Winter Intersession and Summer - Reduced daily hours/No Saturdays or Sundays

Traffic violations are punishable by fines and/or towing of vehicles at the owners' expense. Parked vehicles that create a hazard, impede traffic flow or restrict parking will be tagged and/or towed at the owner's expense.

Fines are payable in the Business Office within one week of issuance. Failure to pay fines will result in a hold on student registration for future courses until the fine is paid.

All violations are subject to appeal throughout the Traffic Appeals Committee. Request for appeal should be made through the Dean of Administrative Affairs at (203) 285-2021.

CANCELLATION OF CLASSES

Weather Hotline: (203) 285-2049

Occasionally classes are cancelled due to extreme weather conditions or other emergencies. In such cases the College notifies local radio and TV stations as soon as the decision is made to cancel classes. These stations include: WICC-AM 660, WEZN-FM 99.9, WELI-AM 960, WEBE-FM 107.9 and WKCI-FM 101.3, WTNH Ch.8, WTIC Ch. 3 & 30. In general, it is best to assume that classes will remain in session unless a specific announcement is made to cancel classes and/or close the College. For the most up-to-date information, watch your local television station or listen to one of the radio stations listed for closure updates.

NOTIFICATION OF RIGHTS UNDER THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights include:

1. **The right to inspect and review the student's education records within 45 days of the day the College receives a request for access.** Students should submit to the registrar, dean, head of the academic department, or other appropriate official, written requests that identify the record(s) they wish to inspect. The College official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the College official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. **The right to request amendment of an education record that the student believes is inaccurate.** Students may ask an appropriate College official to amend a record that they believe is inaccurate. The student should write to the College official, clearly identify the part of the record he or she wants changed, and specify why he/she believes it is inaccurate. The College will notify the student of the decision. If the College decides not to amend the record as requested by the student, the College will advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

NOTE: FERPA is not intended to provide a process to question substantive judgments that are correctly recorded. For example, the right of challenge does not allow a student to contest a grade in a course because the student believes that a higher grade should have been assigned.

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3. **The right to consent to disclosure of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.** FERPA permits disclosure without consent to school officials with legitimate educational interests. A "school official" includes but is not limited to the following: a person employed by the College in an administrative, supervisory, academic, research or support staff position (including law enforcement and security personnel, counseling and health staff); a person or company with whom the College has contracted (such as an attorney, auditor, collection agent or official of the National Student Clearinghouse); a person serving on the Board of Trustees who is authorized to act on its behalf; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities.

FERPA also permits disclosure of education records without consent in connection with, but not limited to:

- To comply with a judicial order or a lawfully issued subpoena;
 - To appropriate parties in a health or safety emergency;
 - To officials of another school, upon request, in which the student seeks or intends to enroll;
 - In connection with a student's request for or receipt of financial aid, as necessary to determine the eligibility, amount or conditions of the financial aid, or to enforce the terms and conditions of the aid;
 - To certain officials of the U.S. Department of Education, the Comptroller General, to state and local educational authorities, in connection with certain state or federally supported education programs;
 - To accrediting organizations to carry out their functions;
 - To organizations conducting certain studies for or on behalf of the College;
 - The results of an institutional disciplinary proceeding against the alleged perpetrator of a crime of violence to the alleged victim of that crime with respect to that crime.
 - Directory information as defined in the policy of the Board of Trustees.
4. **The right to refuse to permit the College to release directory information** about the student, except to school officials with a legitimate educational interest and others as indicated in paragraph 3 above. To do so, a student exercising this right must notify the Office of Registrar in writing [*location to be inserted by each College*]. Once filed, this notification becomes a permanent part of the student's record until the student instructs the College, in writing, to remove it.
5. **The right to file a complaint with the U.S. Department of Education concerning alleged failures by Colleges to comply with the requirements of FERPA.** The name and address of the Office that administers FERPA is:

**Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-4605**

Directory Information

The Board of Trustees designated the following as directory information: student names and addresses, dates of attendance, full vs. part-time student status, awards and honors and graduation date. For purposes of access by military recruiters only, telephone listings and, if known, age, level of education and major are also designated as directory information.

Colleges may disclose directory information without prior consent, unless a student has exercised the right to refuse to permit the College to release directory information in accordance with paragraph 4 above.

UNIFORM CAMPUS CRIME REPORT

Gateway Community College herein complies with the State of Connecticut's Campus Safety Act, Public Act 90-259 and with the Cleary Act, both of which mandates the annual publication of a Uniform Campus Crime Report, and establishes a process for raising awareness of safety on college campuses. Broader awareness of campus safety issues and procedures at Gateway Community College is the first step toward improving the security of students and staff.

Gateway Community College in compliance with all applicable laws, will notify all current students and employees of the annual campus safety report's availability on the College's website, GatewayCT.edu. A hard copy of the report can be obtained from the office of the Dean of Administrative Affairs.

INFORMATION TECHNOLOGY RESOURCES POLICY

The Connecticut State Colleges & Universities (CSCU) System provides information technology resources (IT resources) to faculty, staff and students for academic and administrative use. IT resources may also be available to members of the college community through college libraries and websites. This policy applies to all users of IT resources.

IT resources include, but are not limited to, computers and peripheral hardware, software, networks, databases, electronic communications and Internet connectivity. CSCU IT resources are the property of the Board of Regents. Use of such resources is a privilege and is subject to such IT policies, standards and procedures as may be promulgated from time to time.

IT resources shall be used solely for legitimate and authorized academic and administrative purposes, and in furtherance of CSCU mission and goals. They shall not be used for personal purposes, including monetary gain. Use of IT resources may be monitored by the appropriate CSCU authority to ensure proper and efficient usage, as well as to identify problems or to check for security violations.

Any unauthorized or illegitimate use of IT resources may subject the user to disciplinary action, up to and including dismissal or expulsion, as well as loss of computing privileges. Users must comply with all applicable state and federal laws and may be subject to criminal prosecution for violation thereof under state and federal laws.

The Board of Regents President is authorized to promulgate necessary and appropriate IT policies, standards and procedures, including but not limited to those affective acceptable uses of IT resources, electronic communications and network security. Colleges shall ensure that users of IT resources are aware of all IT policies, standards and procedures, as appropriate.

COMPUTER USE POLICY OF GATEWAY COMMUNITY COLLEGE

This Computer Use Policy governs all computer users at Gateway Community College and outlines the acceptable use of its computer resources. The policy has been formulated in accordance with the state of Connecticut, Department of Information Technology acceptable use policy, Connecticut software management policy and Connecticut General Statute 53, sections 451-453.

Violation of this Computer Use Policy may result in a loss of access privileges as well as college disciplinary and/or legal action.

Scope

This policy applies to all users of Gateway Community College's computing equipment.

Objectives

This policy:

- Establishes user responsibilities;
- Defines acceptable use; and
- Defines inappropriate use of computer resources.

User Responsibilities

Computer users must be mindful of the impact of their activities on computing resources, network resources, and other users. The holder of either a network or Banner account is responsible for his/her actions and activity within his/her account. If a violation of the computer use policy is suspected, the College reserves the right to examine any of Gateway Community College's owned or operated computer resources, communication systems, and/or files.

Lab Assistants' Responsibilities

Oversee the College's open labs and uphold the Computer Use Policy

Assist students who are currently enrolled in Gateway classes

Monitor and report to the Information Technology office any activity that appears to be inappropriate

Acceptable Uses

1. Account use, including Banner account use, by the authorized owner for authorized purposes
2. Use of computer resources in a manner that respects the right of others
3. Adhering to quotas for disk space on systems, such as e-mail
4. Use of the network in a socially appropriate manner
5. Communication and exchange of information for professional and academic development
6. Applying for administrative grants or contracts for research and/or instruction
7. Collaboration with peers at other community colleges in support of work-related activities
8. Supporting appropriate institutional communication to the college community

Unacceptable Uses

1. Use of any computer resources for commercial or for profit purposes
2. Deliberately damaging or physically misusing equipment
3. Possession of food or drink in labs or at any library workstation
4. Downloading or distributing any software from the Internet without the prior consent of the Information Technology department. Examples of such downloads include, but are not limited to, screen savers, wallpapers, games, web cams, shareware/freeware programs, and PowerPoint slides
5. Engagement in chat-rooms, instant messaging, or threaded discussions on the Internet, except for legitimate academic purposes
6. Violating federal or state law, including copyright regulations
7. Concealing or misrepresenting your name or affiliation to mask irresponsible or offensive behavior, including using other identities as your own. This is fraud
8. Viewing, downloading, or printing sexually graphic or suggestive materials, including inappropriate text files or files dangerous to the integrity of the local and wide area network. Violation of this clause can be considered grounds for disciplinary action for sexual harassment
9. Installing, deleting, or altering computer software on any computer without proper license and authorization from the Information Technology department
10. Political lobbying
11. Sharing any passwords and/or accounts
12. Malicious use of the network to develop programs that harass other users, infiltrate a computer or computing system, and/or damage Gateway Community College's software
13. Sending hate mail, harassing, making discriminatory remarks, and/or other antisocial communication
14. Deliberately monopolizing computer resources to the exclusion of other users. This includes, but is not limited to, broadcasting unsolicited mailing or other messages, creating unnecessary output or printing, and creating unnecessary traffic using such tools as streaming audio, video, and game-playing on the Internet
15. Altering or manipulating another user's data/files

The Information Technology department periodically monitors computers in all areas of the College. Be aware that e-mail messages are considered public record, and are therefore legally discoverable and subject to record retention.

APPLICATION AND ADMISSION PROCEDURES

Admissions Office (203) 285-2010

Gateway Community College is dedicated to providing educational opportunities through an open-door admission policy to graduates of an approved secondary school or those who hold a State Equivalency Diploma (GED). Admission is offered on a first-come, first-served basis by program within budgetary limitations, with the exception of Nursing, Radiologic Technologies, Drug and Alcohol Recovery Counselor, and General Motors Automotive programs.

Admissions Procedures

The following steps must be taken to ensure a complete application file:

1. New students are encouraged to apply online for the spring, fall or summer semesters via the Gateway Community College website, GatewayCT.edu. Students may also obtain an application from the Admissions Office at the College Campus, 20 Church Street, New Haven, CT 06510, or from the Gateway website. Please note: new students cannot register online.
2. A copy of a student's high school transcript showing graduation date or a copy of a high school diploma or GED must be sent to the Admissions Office at 20 Church Street, New Haven, CT 06510. Please note: if you attended high school under another name, please make sure that name is noted on your diploma or transcript. Upon receipt of a college transcript showing Associate Degree or higher has been conferred, the high school requirement will be waived. Verification of high school completion is required prior to registration for all students in a degree or certificate program.
3. All new applicants are required to pay a \$20 non-refundable application fee. Attach a \$20 check or money order, made payable to Gateway Community College, to your application. If you have attended another Connecticut Community College, this fee is waived. Online applicants can pay the fee with a credit card.
4. Students who attended a college outside of the U.S. must have their credits evaluated by WES or CED. An official transcript of the evaluation must be sent to the Admissions Office for review.
5. After being admitted, all degree or certificate seeking students are required to take placement examinations in reading, English, and mathematics. English and mathematics credits earned from an accredited institution of higher education will be reviewed to determine if a student must take the tests. (Students in Business Office Technology may be required to take an additional, specialized proficiency examinations.) If test results indicate deficiencies, students will be expected to take an additional course or courses to increase their capability for success in college-level work. In lieu of taking placement tests, students may provide evidence – college transcript(s), *SAT scores, ACT Scores, CLEP, Dantes, or Advanced Placement results. *If providing SAT or ACT scores, they must be brought to the attention of the Director or Associate Director of Admissions for review.
6. New students will be required to verify immunization status. See policy below.

MEASLES/RUBELLA/MUMPS/VARICELLA

Section 10a-155 of the Connecticut general statutes will require that each full time or matriculating student provide proof of adequate immunization against Measles, Mumps, Rubella (MMR) and Varicella as recommended by the Advisory Committee for Immunization Practices (ACIP). A copy of the statute is available at: <http://www.cga.ct.gov/2009/pub/chap185b.thm#htm#Sec10a-155.htm>.

FULL TIME/MATRICULATING STUDENTS

Matriculating students are defined as those enrolled in a degree seeking program. Part time non-matriculating (Non Degree) students are not required to have MMR and Varicella immunizations although they are recommended to have those vaccines by ACIP.

Exemptions will be granted only:

- Individuals born in the United States before January 1, 1957 are exempt from supplying MMRV;
- Individuals born in the U.S. prior to January 1, 1980 are exempt from providing Varicella;
- Individuals born in the United States between January 1, 1957 and January 1, 1980 are exempt from supplying Varicella only (Need proof of MMR);
- Laboratory confirmation to such disease (titer test);
- Documentation from a physician stating that the student is medically contraindicated from receiving such vaccine;
- Documentation from the student that the immunization is contrary to his/her religious beliefs. If students claim a religious exemption or medical exemption and there is an outbreak of measles, mumps, rubella or varicella on campus, those students may be excluded from college activities, including classes and exams;
- Documentation from a physician or director of health that the student has had a confirmed case;
- Enrollment in a distance learning courses conducted entirely through electronic media in a setting without other students present;
- For MMRV, two doses are needed. The doses should be separated by at least 30 days with dose number one given on or after the first birthday.

Any student not showing the necessary proof of immunization will not be allowed to register for classes.

STUDENT TYPES

New Students - A new student is anyone who has never attended another higher education institution and is attending Gateway for the first time with the intention of obtaining a degree, certificate, or transferring to another institution. Please complete the Admissions Procedures Steps 1 – 6.

Transfer Students - A transfer student is anyone who has attended another higher education institution prior to Gateway Admission. Please complete the Admissions Procedures Steps 1 – 6.

Transfer applicants must request that the registrar of any college or university previously attended forward official transcripts to the Admissions Office. In addition, an official high school transcript or copy of high school diploma or GED is required. If transfer credit is desired, please notify the Admissions Office. Transfer evaluations will be performed for degree or certificate students only. New students to Gateway Community College who wish to transfer in credits from another college need to complete and submit a “New Student Transfer Evaluation Request Form.” An unofficial copy will suffice for advising purposes only. Evaluations will be completed once a student registers.

At all Community Colleges, degree and certificate credit shall be granted only for credit courses completed at all institutions within the Connecticut state system of higher education and at all other collegiate institutions accredited by an agency recognized by the Council for Higher Education Accreditation as either a Regional Accrediting Organization or a Specialized and Professional Accrediting Organization in accordance with the following:

1. Degree and certificate credit shall be granted for all credit courses that are applicable to the objectives of, or equivalent to the course requirements of, the curriculum in which the transferring student enrolls. Credit work that is not applicable or equivalent to curriculum requirements shall be accepted for credit at the discretion of the college. Degree and certificate credit shall also be granted on the basis of performance on examinations in accordance with standards and limits approved by the board of trustees.
2. Degree and certificate credit shall be granted for credit courses completed with a letter grade of “C-minus” or better, or with a grade of “P” (Pass). Such credit courses shall be accepted only for credit, and letter grades assigned by other institutions shall not be recorded or included in computations of student grade point averages.

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3. Notwithstanding the number of degree or certificate credits which shall be granted in accordance with the foregoing, the student must complete at least twenty-five percent of the minimum credit requirements for the degree or certificate through coursework at the college awarding the degree or certificate.
 4. When a student seeks transfer credit for technical or specialty courses into a program that is also accredited by a national or regional specialized accrediting agency, such credits must be from a comparably accredited program. In the case of a request for transfer credit for technical or specialty courses from a non-specialty accredited program, the college shall provide appropriate means for the validation of the student's competency in the technical specialty course area

International Students - An international student is a student on an F-1 visa or would like to apply for an F-1 (student) visa.

The credentials of an applicant for admission from another country are evaluated in accordance with general admissions requirements. A completed application, official leaving certificates, and detailed transcripts, in English, of the student's academic record should be sent to the Admissions Office. Applicants who wish to begin undergraduate study must submit all credentials by June 15 for the fall semester and by October 15 for the spring semester. This will allow time for the exchange of official correspondence, and, if the applicant is admitted, will allow time to obtain a passport and/or visa. The I-20 A-B Form, required by the United States Immigration and Naturalization Service, is issued by the College only to students who have been accepted as full-time degree students.

Evidence of the ability to read, write, and speak English well enough to pursue college courses must be submitted to the College. If the applicant's primary language is not English, TOEFL (Test of English as a Foreign Language) scores must be submitted. Information about the test can be obtained by writing to TOEFL, Test of English as a Foreign Language, CN 6151, Princeton, NJ 08541-6151.

The College awards no financial aid (scholarships or loans) to international students, nor does the College make housing available. Applicants must be entirely self-supporting and be able to meet all financial obligations to the College in full and from their own resources. Employment in the United States is not guaranteed, and immigration laws governing employment of international students are very strict. Therefore, a notarized letter or affidavit of support must be submitted from a financial sponsor, who must state his/her name and relationship to the applicant. The sponsor must state his/ her willingness and ability to meet any financial obligations that are related to studies at Gateway Community College.

Readmit Students - A readmit student is defined as any student whose last semester of attendance at Gateway was over two years ago.

Readmit students are former Gateway Community College students who have withdrawn from the college or have been absent from the college for at least two years (excluding summer and winter intersessions). Please contact the Admissions Office. It is not necessary to pay the \$20 application fee. However, if students attended another college during their absence, they must submit an official transcript from each college if they wish to transfer credit.

Other Special Admissions Groups - The College has special agreements with various groups that fall outside the categories mentioned above. These include High School Partnerships, Home School, TAA/WIA, and Senior Citizens. Please contact the Admissions Office for further information (203) 285-2210.

Admissions OF NEBHE Students

The Board of Trustees adopts the following recommendations of the New England Board of Higher Education (NEBHE) for reciprocity among the New England states through the New England regional student program, with the reservation

that priorities go to Connecticut students in the event of budget and/or space limitations:

- Nonresident students whose traveling time would be less if attending a Connecticut community college than if attending a similar instate institution are permitted to attend the Connecticut institution at the NEBHE tuition rate, which is fifty percent above the resident tuition rate, pursuant to section 10a-67 of the general statutes, as amended.
- Nonresident students who wish to enroll in a Connecticut Community College degree program which does not exist in their home states are permitted to enroll in such program at the NEBHE tuition rate.

High School Partnership Program

Developed by the Board of Trustees of Connecticut Community Colleges, this program provides the opportunity for a junior or senior to experience college while still in high school. In order for a student to participate, his/her high school must have a partnership contract signed and on file with the college. The tuition and fees for students in this program are paid for by the Board of Trustees and apply toward the General Fund credit classes only. See your High School Guidance Counselor for more information.

Home-Schooled Students

Home-schooled students who have completed their high school program of study may be admitted as degree-seeking or non-degree seeking, full or part-time. Home-schooled students, like all new students, will be required to submit an application and required fee, verify graduation, take the College ACCUPLACER academic assessment and per state law, provide documentation that they have been immunized against Measles, Mumps and Rubella and Varicella.

Home-schooled students who do not have a high school diploma may still attend Gateway Community College but only as part-time, non-degree seeking students. All home-schooled students must demonstrate sufficient academic ability and complete the ACCUPLACER academic assessment test. Home-schooled students must meet with the Director of Enrollment Management or Associate Director of Admissions.

PAYMENT POLICIES

Bursar's Office: (203) 285-2009

Location: North Building Room N216

Hours: 8:15 a.m. to 4:15 p.m. Monday, Tuesday, Thursday, and Friday; 8:15 a.m. to 6:45 p.m. Wednesday

Miscellaneous: Cash, Checks, VISA, MasterCard and Discover Cards accepted at the Bursar's Window. A Drop Box for non-cash transactions is located adjacent to the Bursars Office. VISA, MasterCard, and Discover payments are also accepted online at <http://my.comnet.edu>.

When to Pay: Full payment is due at registration! Failure to pay may subject your registration to cancellation. While classes are routinely dropped for non-payment without prior notice, students who do not officially drop their courses will be responsible for the charges. Students who register on the web will not receive an additional invoice from the college.

Special Circumstances:

Early Registration: During the Fall and Spring regular academic sessions, you may hold your classes until the Tuition Due Date by paying your nonrefundable fees at the time of registration. If the full balance is not paid by the Tuition Due Date, your registration will be cancelled without notice and the non-refundable fees you paid will be forfeited.

Financial Aid and Loan Students:

- As long as the amount of your authorized financial aid or loan is higher than your account charges you will not be dropped from your courses for non-payment.
- You are strongly advised to carefully monitor the status of your financial aid/loan at <http://my.comnet.edu>. Please keep in mind that the formula for calculating your authorization amount takes into account the number of credits you are registered for and the authorization amount will be recalculated if you change your course load. Since it is not uncommon for a financial aid student to actually owe money to the college after dropping a course, you are also strongly advised to contact the Financial Aid Office at (203) 285.2030 before doing so.
- You are responsible for paying any portion of your bill that is not covered by your financial aid authorization or loan. Additionally, you will be held immediately responsible for full payment of the total balance due regardless of when the change occurs 1) if your financial aid is not awarded; or 2) if your financial aid authorization amount is lessened for any reason, including reducing your course load; or 3) if your authorization is later rescinded.
- **A FINANCIAL AID/LOAN APPLICATION DOES NOT GUARANTEE THAT YOU ARE ELIGIBLE FOR A FINANCIAL AID AWARD OR LOAN, NOR DOES IT EXEMPT YOU FROM PAYMENT.**

Third Party Voucher Payments: Vouchers are to be submitted to the Bursars Office at the time of registration to ensure that your registration is not dropped for non-payment. You will be immediately responsible for full payment of your account if your written commitment from a third party is not honored.

Past Due Accounts: You may not register for a future semesters until your account is paid in full. The College expects all students to meet their financial obligations prior to the start of each semester. However, if your account should become past due during the semester for any reason (i.e. a financial aid authorization change, late/missed installment plan payment, etc.) your account will be assessed a **\$15 late payment fee** and the College will place a hold on your account that will bar you from registration and transcript services. This hold will remain in effect until your entire past balance is paid in full. The College will send an e-mail notification or an invoice, (or both) to your address on file in the Records Office. In addition your class schedule may be cancelled which may not result in any reduction of your charges. If these attempts to collect the debt are unsuccessful, your account will be placed with a collection agency and you may be held liable for the cost of collection.

Checks returned by the bank: Checks that are returned from a bank for any reason must be replaced with cash, money order or bank check within seven days (one week) of the college's receipt of notification by the bank. A fee of \$25 will also be charged to the student's account. In addition your class schedule may be cancelled which may not result in any reduction of your charges.

Tuition Installment Payment Plan: : GCC offers a Tuition Installment Payment Plan for students with accounts in good standing who are enrolled in 3 or more credits during the Fall and Spring semesters. Accounts are considered to be in good standing when they are paid in full for prior semesters. Students can enroll online by logging into their MyCommNet account. Please refer to: <http://www.gatewayct.edu/Paying-For-College/Installment-Plan> for detailed enrollment instructions.

The Installment Plan is an inexpensive alternative to a student loan or paying by credit card. Enrolling in a plan costs just \$25 per semester, and allows students to budget the cost of tuition and fees by spreading out the cost over a number of scheduled payments.

You may still owe a balance on your IPLAN even if you have reduced your course load or withdrawn. Therefore, students are strongly advised to contact the Bursar Office first to determine the impact, if any, your schedule change will have on your account balance.

TUITION AND FEES – EFFECTIVE FALL 2017

Tuition and fees are established by the Board of Regents for Higher Education and are subject to change without notice. **Please refer to the <http://www.commnet.edu/Finance/Tuition.asp> for current tuition and fee rates.**

TUITION	2017 - 2018
Full-time Student (12 credit hours or more per semester)	
Connecticut Resident	\$1,908.00
Non-resident	\$5,724.00
New England Regional Student Program	\$2,862.00
Part-time Student (Per credit hour through 11 hours per semester)	
Connecticut Resident	\$159.00
Non-resident	\$477.00
New England Regional Student Program	\$238.50
Extension Fees (applies to Continuing Education credit programs(all terms), Summer Sessions and Winter Intersessions)	
Full-time Student (12 credit hours or more per semester)	
Connecticut Resident	\$2,064.00
Non-resident	\$2,064.00
New England Regional Student Program	\$2,064.00
Part-time Student (Per credit hour through 11 hours per semester)	
Connecticut Resident	\$172.00
Non-resident	\$172.00
New England Regional Student Program	\$172.00
Other Fees	
Full time Student (12 credit hours or more per semester)	
Student Activity Fee	\$20.00
College Service Fee	
Connecticut Resident	\$230.00
Non-resident	\$690.00
New England Regional Student Program	\$345.00
Part-time Student (Per Semester hour through 11 hours)	
Student Activity Fee	\$10.00

College Service Fee - Connecticut Resident	
1 Credit	\$79.00
2 Credits	\$86.00
3 Credits	\$92.00
4 Credits	\$97.00
5 – 11 Credits	Varies ea. add'l credit
College Service Fee - Non-Resident	
1 Credit	\$237.00
2 Credits	\$258.00
3 Credits	\$276.00
4 Credits	\$291.00
5 – 11 Credits	Varies ea. add'l credit
College Service Fee - New England Regional Student Program	
1 Credit	\$118.50
2 Credits	\$129.00

3 Credits	\$138.00
4 Credits	\$145.50
5 – 11 Credits	Varies ea. add'l credit
SPECIAL FEES	
Academic Evaluation (Credit by Exam - per test)	\$15.00
Portfolio Assessment	\$100.00
CLEP Service Fee (Subject to change per CLEP Fee Schedule)	\$15.00
Proctoring Fee/Test (CCC Students / Non-CCC Students)	\$15.00/\$35.00
CT-CCNP Student Assessment Fee (semester 1-3/ semester 4)	\$82.00/\$262.00
Returned Check Charge	\$25.00
Application Fee	\$20.00
Late Registration Fee	\$5.00
Late Payment Fee	\$15.00
Liability Insurance Fee (charged once per year in the Spring)	\$15.00
Program Enrollment	\$20.00
Installment Plan Enrollment Fee	\$25.00
Replacement Lost ID	\$10.00
MANDATORY USAGE FEES	
Transportation Fee (per semester)	\$20.00
Materials Fee (per registration in designated studio course)	\$50.00
Supplemental Course Fee Level 1 (per registration in designated courses when faculty hours exceed credit hours)	\$100
Supplemental Course Fee Level 2 (per registration in designated courses when faculty hours exceed credit hours)	\$200
Supplemental Course Fee Level 3 (per registration in designated courses when faculty hours exceed credit hours)	\$300
Clinical Program Fee Level 1 (charged each fall & spring to students matriculated in Allied Health and Nursing programs)	\$475.00
Clinical Program Fee Level 2 (charged each fall & spring to students matriculated in Allied Health and Nursing programs)	\$350
Excess Credits Tuition Charge (applies when total registered credits exceed 17 for the semester)	\$100.00

Tuition and Fee Notes

Allied Health and Nursing students who pay Clinical Program fees are exempt from Materials fees for DMS, NMT, NSG, RAD, RDT, and RST lab courses.

Online/Distance Learning courses are charged Connecticut Resident Tuition rates.

No student who has an unpaid account at any state community college may register at that same college or any other state community college.

TUITION AND FEE WAIVERS

Senior Citizen Waivers for Individuals age 62 or Older: Application, Student Activity and College Service Fees are waived. In addition, a waiver of tuition is granted on a space available basis during the fall and spring semesters only when the registration occurs during or after the special registration session, held at the end of the regular registration period. Senior Citizens are responsible for paying all Lab and Studio fees at the time of registration. No Senior Citizen Waiver for tuition will be granted prior to the special session. Senior Citizen Waivers are not granted for classes offered through the Workforce Development and Continuing Education Division or for special fees. Waivers are requested at the Bursar's Office.

Veterans' Waiver: CGS 27-103 entitles a waiver of tuition for honorably discharged veterans who are Connecticut residents and who served on active duty for at least ninety (90) days during one of the following periods: World War II (12/7/41-12/31/46), Korean Hostilities (6/27/50-1/31/55), Lebanon Conflict (7/1/1958-11/1/1958), Vietnam Era (2/28/61-7/1/75), Operation Desert Storm (8/2/1990-present), or those engaged in combat or a combat support role in four (4) other specific military operations between 1982 and 1990. *Reservists and members of the National Guard who have been activated for 90 days or more can qualify for the tuition waiver.* The waiver applies to tuition (not to fees or for courses offered through the Division of Continuing Education) for credit courses taken in the fall or spring semesters. To be eligible for this waiver, the student must pay all fees and present a copy of his/her DD214 (discharge certificate) to the Bursar's Office in accordance with the College's Payment Policies.

National Guard Waiver: Under CGS section 10a-77, tuition is waived for any active member of the Connecticut Army or Air National Guard who is a Connecticut resident, certified by the Adjutant General or his/her designee as a member in good standing of the Guard and enrolled in a degree or certificate program. If the guard member receives tuition reimbursement from an employer, this waiver will be reduced by the amount of the reimbursement. The waiver applies to tuition (not to fees or for courses offered through the Division of Continuing Education) for credit courses taken in the fall or spring semesters. To be eligible for this waiver, the student must pay all fees and present a copy of the written Waiver from the Adjutant General to the Bursar's Office in accordance with the College's Payment Policies.

Dependent Children of POWs and MIAs: Under CGS section 10a-77, tuition is waived for any dependent children of a person declared by the U.S. Armed Forces as missing in action or a prisoner of war while serving in the Armed Forces after January 1, 1960, who was a resident of Connecticut at his/her time of entry into the Armed Forces or while serving. The waiver applies to tuition (not to fees or for courses offered through the Division of Continuing Education) for credit courses taken in the fall or spring semesters. To be eligible for this waiver, the student must pay all fees and present a proof of eligibility to the Bursar's Office in accordance with the College's Payment Policies.

REFUND POLICIES AND PROCEDURES

General Information: Refunds are automatically paid by check to the student at the end of the official Add/Drop period unless the student directs the Bursars Office otherwise. Checks are processed in Hartford and mailed to the permanent mailing address on file at the Records Office. Please verify your address when reducing your course load.

Courses Cancelled by the College: If the College cancels a course, a full refund of all charges (except application fee) will be issued unless the student selects a replacement course. Students who don't select a replacement course, will be sent a refund check via the mail within 45 days.

Return of Title IV Funds: The College maintains a fair and equitable refund policy as mandated by the U.S. Department of Education regulations. These refund and repayment rules apply only to students who withdraw completely and/or otherwise fail to complete the current period of enrollment. Please refer to the appropriate section in this catalog or speak with a Financial Aid Officer for more details.

Armed Service Enlistment: 100% refund of Tuition and Fees will be granted to any student who enters the Armed Services before earning degree credit in any semester, provided that he/she submits, in writing, a notice of withdrawal and a certified copy of enlistment papers.

Tuition and Fee Refunding Rules and Installment Plan Adjustments:

College Service, Student Activity, Installment Plan, Application, and Transportation other fees not listed below **are nonrefundable.**

Clinical Fees: Are nonrefundable unless a student completely withdraws or is not enrolled in any credit course at the end of the official add/drop period.

Allied Health and Personal Liability Insurance Fees: A curriculum change must be filed prior to the start of the term to be eligible for a refund of Allied Health/Nursing program and Personal Liability Insurance fees.

Tuition, Material and Supplemental Fees: The student must officially withdraw either online or in the Records Office according to the schedule below to be eligible for a refund or a reduction of Installment Plan Charges.

- If the student completely drops from classes prior to the first day of the semester, a 100% refund of Tuition, Materials, and Supplemental Fees will be granted.
- If the student completely drops from classes on the 1st day through the 14th calendar day of the semester, a 50% refund of Tuition, Materials, and Supplemental Fees will be granted.
- If the student completely or partially withdraws from classes after the first fourteen (14) calendar days of the semester, NO refund of Tuition, Materials and Supplemental Fees will be granted.
- If the student partially drops from classes on the 1st day through the 14th calendar day of the semester, a refund will be granted in the amount of 50% of the difference in Tuition, Materials, and Supplemental Fees between the original and revised schedules.
- Please refer to the refunding table printed in the College Schedule for specific withdrawal deadlines applicable to abbreviated courses

Extension Credit Fees: A 100% refund of extension credit fees for courses offered by the Workforce Development and Continuing Education Division will be granted to students who officially drop up to the business day prior to the first day of class meeting. No refund will be granted once the class has met.

Policy Appeal Procedures: Students are required to officially drop/withdraw prior to submitting an appeal. Appeals will only be considered for the following extraordinary circumstances: severe illness documented by a physician's certificate; documented administrative error by the college; or military transfer documented by a copy of transfer orders. The following circumstances will not be considered: changes in employment situation; inability to transfer course; normal illness; transportation issues; poor decision or change of mind by the student regarding course selection; or dissatisfaction with course content or instructor. All appeals must be submitted in writing to the Refund Appeals Coordinator and include Banner I.D., contact information and appropriate documentation. Appeals must be received within 10 days of the official withdrawal date of the course to be considered. Appeals should be directed to the Refund Appeals Coordinator, Gateway Community College Business Office, 20 Church Street, New Haven, CT 06510 or e-mail gw-student payments@gatewayct.edu.

FINANCIAL AID

Telephone (203) 285-2030

Gateway Community College is committed to providing access to higher education by minimizing economic barriers. The College provides several options for financial aid, including state and federal grants, scholarships, student loans, and the federal work-study program. Awards may come from one or any combination of the four preceding sources as determined by federal and local eligibility guidelines. Financial need, academic performance, and resources available to the student are all considered in determining final eligibility.

Students must have a high school diploma or a GED, be enrolled in an approved degree or one-year certificate program, and must maintain “satisfactory academic progress” as described in the Academic Policies and Procedures section.

Policies and regulations instituted by Title IV, Student Financial Aid Programs, and Gateway Community College require that a student’s academic progress be monitored and measured to determine continuing financial aid eligibility. To maintain eligibility for financial aid, students must successfully complete two-thirds (66.66%) of their credits with Satisfactory Academic Progress (for additional information, please see the Student Handbook).

All financial aid awards are predicated upon available funds and subject to revision by the Financial Aid Office upon change in enrollment status, additional resources, scholarships, and/or lack of completion of necessary information to determine eligibility. All awards are based upon a student’s enrollment status at the end of the add/drop period. Financial aid is disbursed twice per academic year: the first disbursement occurs during the fall semester and the second disbursement during the spring semester.

APPLICATION PROCESS

All students must file the Free Application for Federal Student Aid (FAFSA) to establish eligibility. Students may complete this form via the web application at <http://www.fafsa.ed.gov>. Upon receipt, the Financial Aid Office may request additional documentation to verify the authenticity of your application. Additional information may be found via the Gateway Community College homepage, GatewayCT.edu or mycommnet.edu.

Additionally, all males between ages 18 and 25 must register with the Selective Service System to be eligible for Title IV, Student Financial Aid (additional information on this program is located at <http://www.sss.gov>).

TYPES OF FINANCIAL AID

Federal Pell Grant Program

The Federal Pell Grant Program provides need-based grants to low-income undergraduate and certain post-baccalaureate students to promote access to postsecondary education. Grant amounts are dependent on: the student’s expected family contribution (EFC) (see below); the cost of attendance (as determined by the institution); the student’s enrollment status (full-time or part-time); and whether the student attends for a full academic year or less. Students may not receive Federal Pell Grant funds from more than one school at a time.

Financial need is determined by the U.S. Department of Education using a standard formula, established by Congress, to evaluate the financial information reported on the Free Application for Federal Student Aid (FAFSA) and to determine the family EFC. The fundamental elements in this standard formula are the student’s income (and assets if the student is independent), the parents’ income and assets (if the student is dependent), the family’s household size, and the number of family members (excluding parents) attending postsecondary institutions. The EFC is the sum of: (1) a percentage of net income (remaining income after subtracting allowances for basic living expenses and taxes) and (2) a percentage of net assets (assets remaining after subtracting an asset protection allowance). Different assessment rates and allowances are used for dependent students, independent students without dependents, and independent students with dependents. After filing a FAFSA, the student receives a Student Aid Report (SAR) via regular mail or email, which notifies the student if he or she is eligible for a Federal Pell Grant, provides the student’s EFC, and may request changes to be made to the application for accurate processing.

Federal Supplemental Educational Opportunity Grant

The FSEOG Program provides need-based grants to low-income undergraduate students to promote access to post-secondary education. Institutional financial aid administrators at participating institutions have substantial flexibility in determining the amount of FSEOG awards to provide students who are enrolled or accepted for enrollment. Priority is given to those students with “exceptional need” (those with the lowest EFCs at the institution) and those who are also Federal Pell Grant recipients.

Federal Work-Study Program

This program provides jobs for students who receive financial aid. Its purpose is to provide funds to allow employers to hire enrolled students. This part-time employment may either be on the College campus or in a public/private non-profit organization. Students may work a maximum of 15 hours per week while attending classes. If funds are available, eligible students may work a maximum of 25 hours during vacation periods. Students interested in this program should contact the Financial Aid Office.

William D. Ford Federal Direct Loan Program

These fixed-rate loans, guaranteed by the federal government, are available to students who apply for financial aid using the FAFSA. The application process must be initiated through the Financial Aid Office. Payment on the principal is not required until 6 months after the student leaves school, as long as the student remains enrolled at least (six credits) half-time. There are two types:

Subsidized Federal Stafford Loan

Subsidized Stafford Loans are need-based loans. The government will pay the interest on the loan while the student is enrolled at least half-time (6 credits) and during other authorized periods called “deferments”. The interest rate on this type of loan is fixed, for more information on loan rates please visit <https://studentaid.ed.gov/sa/types/loans/interest-rates>

Unsubsidized Federal Stafford Loan

Unsubsidized Stafford Loans are available to students who do not qualify for need-base loans, or who qualify for less than the annual maximum of Subsidized Stafford Loan. The government does not pay the interest to the lender; the student can choose to either pay the interest while in school, or have the interest added to the loan principal to be repaid later. The interest rate on this type of loan is fixed, for more information on loan rates please visit <https://studentaid.ed.gov/sa/types/loans/interest-rates>.

Loan Origination Fees

The Department of Education charge loan origination fees, which will be deducted proportionately from each loan disbursement. Revenue from these fees help reduce the government’s cost of providing these loans.

Community College Grants

These funds are allocated to the College by the State of Connecticut and are awarded based on financial need and available funds.

Roberta B. Willis Scholarship – Need-Based Award

CT resident who attends a CT public or non-profit private college. Recipient must have a federal Expected Family Contribution (EFC) within the allowable range.

TREATMENT OF TITLE IV AID WHEN A STUDENT WITHDRAWS

Gateway Community College offers the following Title IV programs that are referred to when a student withdraws during a semester: Federal Pell Grants, Direct Loans, Direct PLUS Loans, and Federal Supplemental Educational Opportunity Grants (FSEOGs).

Though your aid is posted to your account at the start of each period, you earn the funds as you complete the period. If you withdraw during your payment period or period of enrollment (fall, spring, or summer), the amount of Title IV program assistance that you have earned up to that point is determined by a specific formula. If you received (or Gateway or your parent received on your behalf) less assistance than the amount that you earned, you may be able to receive those additional funds. If you received more assistance than you earned, the excess funds must be returned by the school and/or you.

The amount of assistance that you have earned is determined on a pro rata basis. For example, if you complete 30% of your payment period or period of enrollment, you earned 30% of the assistance you were originally scheduled to receive. Once you have completed more than 60% of the payment period or period of enrollment, you earned all the assistance that you were scheduled to receive for that period.

If you did not receive all of the funds that you earned, you may be due a post-withdrawal disbursement. If your post-withdrawal disbursement includes loan funds, your school must get permission before it can disburse them. You may choose to decline some or all of the loan funds so that you don't incur additional debt. Your school may automatically use all or a portion of your post-withdrawal disbursement of grant funds for tuition, fees, and room and board charges (as contracted with Gateway). Gateway needs your permission to use the post-withdrawal grant disbursement for all other school charges. If you do not give your permission (some schools ask for this when you enroll), you will be offered the funds. However, it may be in your best interest to allow the school to keep the funds to reduce your debt at the school.

There are some Title IV funds that you were scheduled to receive that cannot be disbursed to you once you withdraw because of other eligibility requirements. For example, if you are a first-time, first-year undergraduate student and you have not completed the first 30 days of your program before you withdraw, you will not receive any Direct Loan funds that you would have received had you remained enrolled past the 30th day.

If you receive (or Gateway or your parent receive on your behalf) excess Title IV program funds that must be returned, Gateway must return a portion of the excess equal to the lesser of:

1. Gateway charges multiplied by the unearned percentage of your funds, or
2. the entire amount of excess funds.

Gateway must return this amount even if it didn't keep this amount of your Title IV program funds.

If Gateway is not required to return all of the excess funds, you must return the remaining amount.

Any loan funds that you must return, you (or your parent for a Direct PLUS Loan) repay in accordance with the terms of the promissory note. That is, you make scheduled payments to the holder of the loan over a period of time.

Any amount of unearned grant funds that you must return is called an overpayment. The maximum amount of a grant overpayment that you must repay is half of the grant funds you received or were scheduled to receive. You do not have to repay a grant overpayment if the original amount of the overpayment is \$50 or less. You must make arrangements with your school or the Department of Education to return the unearned grant funds.

The requirements for Title IV program funds when you withdraw are separate from any refund policy that Gateway may have. Therefore, you may still owe funds to the school to cover unpaid institutional charges. Gateway may also charge you for any Title IV program funds that the school was required to return. If you don't already know Gateway's refund policy, you should ask the Financial Aid Office for a copy. Gateway's Registrar Office can also provide you with the requirements and procedures for officially withdrawing from school.

If you have any questions regarding treatment of your financial aid funds after you withdraw, you may call the Gateway Office of Student Financial Aid at (203) 285-2030.

ORDER OF RETURN OF STUDENT FINANCIAL AID PROGRAM FUNDS

Funds credited to outstanding loan balances for the repayment period of enrollment for which a return of funds is required, must be returned in the following order (not to exceed the original enrollment from each source):

1. Direct Unsubsidized Stafford Loans (other than PLUS loans)
2. Direct Subsidized Stafford Loans
3. Federal Pell Grants for the payment period which a return of funds is required
4. Federal Supplemental Educational Opportunity Grants (FSEOG) for the payment period due which a return of funds is required.

SATISFACTORY ACADEMIC PROGRESS POLICY FOR STUDENT FINANCIAL AID RECIPIENTS

A student receiving Federal Title IV financial aid or other financial aid directly administered or certified by the college must maintain satisfactory academic progress towards the completion of a certificate or degree program of study. Satisfactory academic progress for financial aid recipients is measured by using a quantitative and qualitative standard and is an assessment of a student's cumulative academic record at the college.

A student must successfully complete two-thirds (66.66%) of the credits (earned credits/attempted credits) s/he attempts. All attempted credits resulting in either an academic grade or administrative transcript notation will be included in the quantitative calculation. Incomplete courses, course withdrawals, course repetitions, noncredit remedial courses (with appropriate credit equivalency evaluation), and ESL courses will also be included in this assessment. Transfer credits will be counted as both attempted and earned credits in the calculation for determining satisfactory academic progress.

A student must also maintain a cumulative minimum grade point average (qualitative standard) as noted below in order to be making satisfactory academic progress and be eligible to receive financial aid.

Academic Requirements

Certificate Standards

<i>Attempted Credits</i>	<i>Minimum GPA</i>	<i>Minimum % Pace</i>
0 - 11.99	0.0	0.00%
12+	2.0	67.00%

Degree Standards

<i>Attempted Credits</i>	<i>Minimum GPA</i>	<i>Minimum % Pace</i>
0 - 11.99	0.0	0.00%
12 - 30.99	1.7	50.00%
31 - 49.99	2.0	50.00%
50 - 59.99	2.0	60.00%
60+	2.0	67.00%

A student's cumulative academic history will be evaluated at the end of each enrollment period and prior to the subsequent term's financial aid disbursement. This policy will be used to evaluate all students; regardless of their enrollment level.

Maximum Credit Hours

A student may receive financial aid for any attempted credits in his/her program of study that do not exceed 150% of the published length of the student's educational program at the college. For example, a student enrolled in a 60-credit degree program may receive financial aid for a maximum of 90 attempted credit hours. Similarly, a student enrolled in a 30-credit certificate program may receive financial aid for a maximum of 45 attempted credit hours. Any attempted credits at the college must be included in the calculation. The 150% maximum credit hours rule is applicable to students who change majors or who pursue a double major.

Repeated/Audit Coursework

Financial aid recipients are limited to one repetition of a previously passed course in their program of study. A second repetition of a previously passed course will not be eligible for financial aid payment. Audit courses are not financial aid eligible.

Financial Aid Warning

Any student who fails to meet the minimum satisfactory academic progress standard will be placed on Financial Aid Warning. The Warning period will be the student's next semester or period of enrollment at the college. The college will communicate the Warning status to the student and inform the student that s/he must meet the academic progress standard by the end of the subsequent enrollment period in order to maintain eligibility to participate in the financial aid programs at the college.

Termination

Any student who fails to meet the minimum satisfactory academic progress standard at the end of the Warning period will become ineligible from the financial aid programs at the college. The college will communicate the Termination status to the student and inform the student of the available Reinstatement and Appeal Process.

Reinstatement Policy

A student's financial aid eligibility will be automatically reinstated at such time as the student meets the minimum satisfactory academic progress standard. Reinstatement to the financial aid programs may also occur upon a successful appeal by the student (see Appeal Process below).

Financial Aid Probation

Any student who fails to meet the minimum satisfactory academic progress standard at the end of the Warning period will become ineligible from the financial aid programs at the college. Ineligible students have the opportunity to file an appeal regarding their termination from the financial aid programs. Students that have failed the academic progress standard and have been approved with a successful appeal will be considered on Financial Aid Probation.

Appeal Process

A student may request consideration for reinstatement to the financial aid programs through the following Appeal Process:

If the student feels his/her failure to meet the minimum satisfactory academic progress standard was the result of an unusual or extraordinary situation that affected successful progression, the student may appeal to the Financial Aid Office. Some personal mitigating circumstances could include illness or injury of the student or dependent of the student; a death in the family; or other undue hardship as the result of special circumstances. An appeal form is available in the Financial Aid Office.

The student must: 1) explain the extenuating circumstances causing the non-compliance; 2) substantiate it with third party documentation, (i.e. letter from the doctor who treated the student); and 3) give a detailed explanation of specifically what has changed that will allow satisfactory progress to be demonstrated at the next evaluation.

Should an appeal be approved and the student is not mathematically able to return to satisfactory academic progress at the conclusion of subsequent enrollment period, a Financial Aid Administrator will devise and appropriate academic plan for the upcoming semester with the student. For example the terms of an academic plan may be as follows:

Should an appeal be approved and the student is not mathematically able to return to satisfactory academic progress at the conclusion of subsequent enrollment period, a Financial Aid Administrator will devise and appropriate academic plan for the upcoming semester with the student. For example the terms of an academic plan may be as follows:

Register and successfully complete all credits with a minimum term GPA of 2.0 or better.

At the end of the semester, grades will be evaluated. If the student has met the required terms of the academic plan, the student may continue to receive financial aid the following semester. If the student fails to meet the terms of the academic plan in any subsequent semester, the student will become ineligible to participate in the financial aid programs until the student is able to once again meet the minimum requirements for academic progress. The student's progress will continue to be monitored at the end of each semester with the same terms in place until the student is in compliance with Connecticut Community Colleges' satisfactory academic progress policy.

INCOMPLETE GRADES

Financial aid students must complete all grades of Incomplete (I) prior to the beginning of the subsequent semester. Eligibility for continued financial aid will be determined only after the receipt of grades.

WITHDRAWAL FROM SCHOOL

In general, if a recipient of the Student Financial Aid Assistance program withdraws from a school during a payment period or during a period of enrollment in which the recipient began attendance, the school must calculate the amount of federal funds the student did not earn. Those funds must be returned (see Return of Title IV Funds).

If the school determines that a student did not begin the withdrawal process or otherwise notify the school of the intent to withdraw due to illness, accident, grievous personal loss, or other circumstances beyond the student's control, the school may determine the appropriate withdrawal date.

If the student registers for classes but never attends, the student is responsible for all charges incurred.

SCHOLARSHIPS

Foundation Scholarships

Scholarships are available through the Gateway Community College Foundation, Inc., which was formed to assist the College in expanding its services to students and enhancing academic instruction. The Foundation also helps the College to invest in Connecticut's future by providing resources and through advocacy.

The Foundation awards and administers various scholarships in compliance with the policies of its board of directors or at the request of the benefactor. Scholarships are awarded each spring semester to students for use in the following academic year. The GCC Foundation scholarship application is made available online during the spring semester beginning in February. Students can visit gatewayfdn.org to see the list of scholarships available. For more information, call (203) 285-2617.

Scholarships are available for all students including program-specific scholarships in the Engineering Technology programs, health care and sciences.

ACADEMIC POLICIES AND PROCEDURES

REGISTRATION

Fall and spring registration dates are established each semester for new and returning students. While every effort will be made to meet the educational needs of each student, registration is conducted on a seat-available basis. Courses listed in the catalog will not necessarily be offered every semester. The College reserves the right to cancel course offerings for budgetary reasons or because of lack of enrollment. Every attempt will be made to notify students if a selected course has been cancelled.

The College offers credit and credit-free instruction during its winter intersession, which runs from late December through early January, and during summer sessions. The exact dates of the winter intersession and summer sessions may be found in the appropriate course schedules that are mailed to area residents, distributed through the Registrar's Office, and online at: GatewayCT.edu or <http://www.online.commnet.edu>. Courses are open to all Gateway Community College students, students from other colleges, and any interested adults.

CROSS-REGISTRATION

Tuition and fees for students who register for general fund/tuition account courses at multiple colleges within the community college system shall be charged as follows:

- A. **Full-time Students** – Students who have paid full-time student tuition and fees at their “home” institution shall be exempt from further charges. Copies of the student’s tuition and fee receipt from the “home” institution should be accepted by the “host” institution in lieu of payment.
- B. **Part-time Students** – The charges for students who have paid part-time student tuition and fees at their “home” institution and register for additional courses at the “host” institution shall not exceed the amount charged for a full-time student, if the student’s combined registration at the “home” and “host” institutions would classify them as a full-time student. Copies of the student’s tuition and fee receipt from the “home” institution should be accepted by the “host” institution, and the “host” institution should charge the difference between full-time tuition and fees and the amount paid to the “home” institution as indicated on the “home” institution receipt. The “host” institution must notify the “home” institution of the multiple college registration. Any change in student status that would warrant a refund of tuition and fees will be based on the combined registration at the “home” and “host” institutions. Students who register at multiple colleges whose combined student status is less than full-time shall be charged as a part-time student for the semester credits registered at each of the respective colleges.

CHANGE OF ADDRESS, EMAIL ADDRESS, OR NAME

If you change your address, your email or your name, please notify the Registrar's Office immediately. It is of the utmost importance that the college have the most up-to-date contact information on record. Failure to keep your information current is likely to result in delays in receiving grades and other official correspondence from the college. If you are a current student and not employed by the Community College System, name change requests must be submitted in person to the appropriate office at your college accompanied by Official Photo Identification and a Certified Copy of one of the following:

- Probate Court Decree ordering a name change
- Superior Court Order dissolving a marriage and explicitly ordering restoration of the name of a party
- District Court Order associated with an immigrant becoming a U.S. Citizen
- Marriage License

NOTE: “Certified Copy” refers to an original decree, Order, or License with raised gold seal or other stamp providing indicia of authenticity, including contact information for the issuing authority.

CHANGING YOUR CLASS SCHEDULE

You are urged to seek advice from an academic advisor if you have any questions about changing your classes. Making changes to your course load or schedule without consulting an advisor may slow progress toward your educational goals. However, the permission of an advisor is not required to change sections of the same course.

To add or drop a course, or change to another section of the same course, you must complete the Add/Drop procedure. (See "Add/Drop Procedure".)

ADD/DROP PROCEDURE

Add/Drop forms are available in the Registrar's Office and in the Counseling Center. To add or drop a class you must complete and sign the appropriate form during the Add/Drop period, which is published in the current semester schedule. Please note the following procedures:

- Submit the Add/Drop Form to the Registrar's Office during the specified hours, which are posted.
- If there is a seat in the class that you wish to add, you will be entered into the class.
- The signature of an academic advisor or faculty is required for additional courses, but not for time changes.
- You may not register for a closed course without the written permission of the instructor.
- Drop slips must be submitted to the Registrar's Office during the published time frame and do not require an advisor's signature.
- If you drop a course prior to or during the first fourteen (14) calendar days of a semester, you are entitled to removal from the official class roster and the course will not appear on your official transcript.

Please note: Payment is due when a course is added. If no payment is made, the student will be disenrolled from the course. The add/drop dates are strictly enforced; no add/drops are accepted after the deadline published in the course schedule.

CHANGING YOUR DEGREE PROGRAM

If you wish to change enrollment from one degree program to another (e.g., from General Studies to Liberal Arts), you should obtain a Change of Curriculum form from the Counseling & Student Success Center, Room N213.

To change your degree program, you are required to see a counselor who will explain the procedures for changing your program. (A coordinator's signature is required for several programs; please see the Change of Curriculum form for specifics.) Once signed and approved, the completed Change of Curriculum form must go to the Registrar's Office to be processed. The title of your new program will appear on your transcript. Follow the same procedure if you wish to add a second program of study.

To change from non-degree status to a degree program, a student must provide verification of high school completion and immunization.

SEMESTER HONORS

- Full-time students who are matriculated in a certificate or degree program and who successfully complete 12 or more credits of work in a semester with a grade point average of 3.4 or higher shall be recognized by having their names placed on a Dean's List.
- Part-time students who are matriculated in a certificate or degree program are also eligible for such recognition when they have completed 12 or more credits of work with a cumulative grade point average of 3.4 or higher. They may be subsequently recognized at the completion of an additional 12 or more credits of work with a cumulative grade point average of 3.4 or higher, and at successive intervals of 12 credits.

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- A course Withdrawal or Incomplete shall make the student ineligible for Dean's List recognition that semester. Upon completion of the Incomplete, the student may be recognized retroactively.
 - Students who are in a probationary status are not eligible for Dean's List recognition, even if their cumulative grade point average might otherwise make them eligible.

GRADUATION HONORS

Students with exemplary academic performance shall be recognized at graduation with the following designations:

- Highest Honors for students with 3.9 – 4.0 grade point average
- High Honors for students with 3.7 – 3.89 grade point average
- Honors for students with a 3.4 – 3.69 grade point average

Students with an Incomplete may become eligible retroactively for graduation honors upon completion of the course requirements. Recognition shall appear on the transcript, provided that the student has earned the required grade point average.

Phi Theta Kappa International Honor Society

Gateway Community College has an active chapter of the Phi Theta Kappa Honor Society. Phi Theta Kappa is the honor society of two-year colleges. Students are invited to join the Alpha Xi Theta Chapter, as full members if they have completed at least 12 associate degree credits at Gateway and have a Grade Point Average (GPA) of at least 3.5. Qualified students are inducted into the Honor Society during the Phi Theta Kappa Installation Ceremony held each fall and spring. Alpha Xi Theta also accepts provisional members with less than 12 associate degree credits at Gateway or students with 12 associate degree credits at Gateway and have a Grade Point Average (GPA) of at least 3.3.

STATEMENT ON ACADEMIC SATISFACTORY PROGRESS

- The grading system employed by each college should accurately reflect the academic achievement of the student. In order to ensure appropriate use of state resources available for the education of its citizens, each college will develop procedures to monitor satisfactory progress through its warning, probation, and suspension policy.
- This policy shall be applicable to all students enrolled in developmental and/or credit courses, no matter the number of credits for which they are enrolled.
- No course may be repeated for credit more than twice. The highest grade received will be used in calculating the student's academic average. This does not apply to those courses that are designed to be repeated for additional credit.
- Satisfactory completion of fifty percent of the credits attempted (this phrase means actual continued enrollment beyond the add/drop period) will be the minimum standard for good standing.

ACADEMIC WARNING

- Students who have completed 11 or fewer credits whose Cumulative Grade Point Average (CGPA) falls below 1.5 will be given a written warning. Students who have completed between 12 and 30 credits inclusive whose CGPA falls below 1.7, and those who have completed 31 or more credits whose CGPA falls below 2.0, will be given a written notice that they are placed on academic probation.

ACADEMIC PROBATION

- Students placed on academic probation will be required to take a reduced course load for one semester.
- College procedures will be included in appropriate publications and communications.

ACADEMIC SUSPENSION

A suspended student must wait at least one (1) semester before applying for readmission. After academic suspension, readmitted students who wish to enroll again must comply with the following criteria: (a) receive counseling, (b) acquire a “C” average in courses attempted during given semester in order to show academic progress and (c) be limited to a maximum of two (2) courses until a 2.0 accumulative GPA is achieved. The appeals process is initiated through the Counseling and Student Success Center. If not satisfied with that decision, the student may initiate an appeal to the Dean of Academic Affairs.

ACADEMIC INTEGRITY

At Gateway Community College we expect the highest standards of academic honesty. Academic dishonesty is prohibited in accordance with the Board of Regents’ Proscribed Conduct Policy in Section 5.2.1 of the Board of Trustees’ Policy Manual. This policy prohibits cheating on examinations, unauthorized collaboration on assignments, unauthorized access to examinations or course materials, plagiarism, zero tolerance for threatening, intimidating, and violent behavior, and other proscribed activities. Plagiarism is defined as the use of another’s idea(s) or phrase(s) and representing that/those idea(s) as your own, either intentionally or unintentionally. (Excerpted from the Board of Trustees Policy 5.2.1, amended 2/26/90).

In addition, at Gateway Community College, unauthorized use of any electronic device to convey information during examinations and all other forms of assessment is considered academic dishonesty.

ACADEMIC STANDARDS

A student with a GPA of 2.0 or higher is considered in Good Standing. Only students in Good Standing may register as full-time.

To remain eligible for continuation of studies, students must maintain a cumulative grade point average (GPA) equal to or above the minimum stated in the Academic Standards criteria for the number of credits they have completed.

11 or fewer credits with less than 1.5 GPA	Written Warning
12 - 30 credits inclusive with less than 1.7 GPA	Written Notice of Academic Probation – Reduced Course Load
31+ credits with less than 2.0 GPA	Written Notice of Academic Probation – Reduced Course Load
31+ credits with one semester probation earning less than 2.0 PGA	Written Notice of Academic Suspension

COURSE LOAD

A full course load will normally consist of four to five courses, 12 credits or more depending upon the student’s major and degree of academic preparedness. Students wishing to take more than the normal course load for their major during the second or subsequent semester may, provided they have maintained an average of 3.0 or better during the preceding semester, register for one additional course upon the recommendation and approval in the Counseling and Student Success Center. All appeals regarding course load must be made to the Dean of Student Affairs.

COURSE SUBSTITUTION

The substitution of a course requirement with another similar course must receive permission from the appropriate department chairperson, program coordinator or the Dean of Academic Affairs. A Course Substitution Form must be completed with the appropriate department chair or program coordinator’s signature.

GRADES

All colleges will use the same system of values for grades awarded. Values to be used for all calculations of grades, averages, and related matters, are as follows:

A	4.0	C	2.0	Temporary Grade: I - Incomplete
A -	3.7	C-	1.7	Administrative Transcript Notations:
B +	3.3	D+	1.3	AU Audit
B	3.0	D	1.0	P Pass
B -	2.7	D-	0.7	UF Unearned F (did not attend)
C +	2.3	F	0.0	

The Grade Point Average (GPA) shall be calculated to two decimal places, based on quality points and the number of credits attempted.

To determine the number of quality points earned in a course, a student's numerical grade is multiplied by the number of credits associated with the course (semester hours). The total of all quality points earned by a student is then divided by the total number of credits attempted. The result is the student's GPA. Reports of the final grades for the semester may be obtained online through My Commnet at www.mycommnet.edu.

Students enrolled in non-credit courses through Corporate and Continuing Education are awarded Continuing Education Units (CEUs) on a Pass/Fail (P/F) basis.

Temporary Grade

I - Incomplete

1. An Incomplete is a temporary grade assigned by the faculty member when coursework is missing and the student agrees to complete the requirements. Although a student may request an Incomplete, the faculty member is not required to honor the request. The faculty member should assign an Incomplete when there are extenuating circumstances such as illness that prevent a student from completing the assigned work on time and the student has completed most of the course requirements and, in the judgment of the faculty member, the student can complete the remaining work within the time limit established by system policy.
2. A faculty member who assigns an Incomplete shall file a system report form that includes:
 - (a) a brief description of the requirements to be completed;
 - (b) the date by which the coursework must be submitted to the faculty member, which is the end of the tenth week of the next standard semester;
 - (c) a statement that the Incomplete will change to a specified letter grade if the work is not completed by the end of the tenth week of the next standard semester.

The faculty member shall keep the original signed form, with copies to the student, the academic dean, the registrar, and such other appropriate parties as the college may identify.

3. All Incompletes must convert to a letter grade by the end of the following semester. If a student submits the required work on time, the faculty member shall calculate a grade to replace the Incomplete and submit it to the registrar by the end of the semester. If a student fails to complete the required work or fails to submit the work by the specified time, or if the faculty member fails to submit a replacement grade, the registrar shall convert the Incomplete to the letter grade specified in the report form, and that letter grade shall be entered on the student transcript.
4. Students with an Incomplete are temporarily ineligible for semester or graduation honors. Upon conversion of the Incomplete to a letter grade, students may retroactively receive semester or graduation honors, and such recognition shall appear on the transcript, provided that the student has earned the required grade point average.

Students in a Allied Health or Nursing program (Diagnostic Medical Sonography, Fitness Specialist, Nuclear Medicine, Radiation Therapy, Radiography) must complete all required course prerequisites before registering for any program-specific math, science, and/or Allied Health or Nursing courses.

Administrative Transcript Notations:

“AU” - Audit

An administrative transcript notation for students auditing a course.

Students not wishing credit may audit a course. This status will allow them to participate in class activities without being required to meet the examination requirements of the course. Students may ask to have papers critiqued, but faculty members are not required to grade an auditor's course work. Full tuition and fees are charged for courses audited. A student who wishes to change from credit to audit status must request this within the first four weeks of the course, using such forms and procedures as the college may prescribe. Students auditing a course may not change to credit status.

Audited courses may be repeated in a subsequent semester for credit by re-registering and paying the appropriate tuition and fees. The structure of the course should not be altered in consideration of the number of students auditing the given course.

“P” - Pass

An administrative transcript notation for successful completion of courses taken on a pass/fail basis. Students failing will receive a grade of “F”.

With the permission of the instructor, a student may take an elective course on a Pass/Fail basis. Any student who has satisfactorily completed at least 12 credits may take advantage of the Pass/Fail option. The student must notify the Records Office in writing of this intent no later than one week following the Add period. Upon completion of the course, the student will receive a grade of “P” or “F.” No other grade will be reported. The “Pass” grade will entitle the student to an appropriate number of academic credits toward graduation. A “Pass” will not be computed in the student's quality point average (GPA). Only one academic course may be taken under the Pass/Fail option during a semester.

All clinical courses in the Radiologic Technology programs are offered only on a pass/fail basis.

“UF” - Unearned Failure

This notation is awarded to students who were enrolled in a course, did not officially withdraw, but who failed to participate in course activities through the end of the term. It is used when, in the judgment of the instructor, completed assignments and/or course activities were insufficient to make normal evaluation of academic performance possible.

“TR” - Transfer

An administrative transcript notation in lieu of grades for courses accepted for credit from other colleges and universities.

“W” - Withdrawal from a course

An administrative transcript notation used to indicate that a student is withdrawn from a course in accordance with the procedures prescribed by the college.

Students who withdraw officially from semester credit courses through the Records Office within the first fourteen calendar days of the fifteen-week semester will be removed from class rosters. Students withdrawing after the first fourteen calendar days but before the end of the tenth week will receive a grade of “W”. A student with a grade of “W” will be ineligible for academic honors for that semester.

During the Summer/Winter sessions, students who withdraw prior to the first day of the credit course will receive no grade for the course. Generally, if a student withdraws after the first class and prior to the last date of withdrawal for each Summer/Winter session, the student will receive a grade of “W”. Please consult the Records Office. Students are encouraged to carefully read the academic calendars for each Summer/Winter session.

After the above deadlines have passed, withdrawal from a course may be granted and recorded on the student's permanent record as “W” if extenuating circumstances are found to justify the withdrawal.

“W” grades are not computed in the quality point average. If a student stops attending class, however, and fails to officially withdraw from the course, the instructor may issue a grade of “F”.

“F” grades are calculated in the quality point average. To be official, all withdrawals must be received and processed by the Records Office.

“**” - Grades with an asterisk** (before the Fall 2004) or “^” - Grades with a carrot “^” (starting with the Fall 2004)

These administrative transcript notations indicate the Fresh Start Option has been invoked. Those grades will not be calculated into the student's GPA, but any course in which the student received a grade of C- or above can be used to satisfy graduation requirements.

“#” - Grades with a pound sign “#”

This administrative transcript notation indicates the courses are developmental and do not carry any credit for graduation nor are calculated into the student's GPA.

Instructor-Out Hotline: 866-315-2769

To check if your instructor is going to be absent, you may call the hotline prior to class. If a faculty member is going to be late or cannot meet due to an emergency, he or she should make every effort to inform you. Many faculty members will notify you during the first class sessions about how such situations will be handled. In the event that a faculty member is more than 20 minutes late arriving for class, you may:

- Go to the Dean of Academic Affairs (N321), the Evening Administrator (N104) or the office of the department chair for that academic area for guidance.
- Circulate an attendance sheet with the course number and section for each student to sign and submit it to one of the officials above. You are free to leave if you have received no other directions.

FACULTY OFFICE HOURS

Faculty members are willing to meet with you to discuss individual concerns or to provide assistance. At the beginning of the semester, each of your instructors will provide you with his or her office hours, office location and phone number. If you want to consult a faculty member, it is best to make and keep a specific appointment. You can, however, stop by the faculty member's office during his or her listed hours.

FACULTY OUT HOTLINE

Students can determine if an instructor has cancelled class for any reason by calling the Faculty Out Hotline at (866) 315-2769.

ATTENDANCE

By enrolling in classes at Gateway Community College, you accept responsibility to take full advantage of your educational opportunity via regular attendance in your scheduled classes and laboratories. The college, therefore, does not administer a uniform system of monitoring attendance. For purposes of record keeping, all instructors keep their own attendance records.

At the beginning of each semester, each instructor will delineate clearly the expectations necessary for the successful completion of the course. All students are expected to meet the academic obligations outlined in the syllabus, or to assume the risks incurred by failure to do so.

ENROLLMENT STATUS

Degree students are those who have satisfied admission requirements and are enrolled in a planned program of study that will result in a certificate, Associate in Arts, Associate in Science, or Associate in Applied Science degree. Non-degree students take courses but do not wish to be enrolled in a planned program of study leading to a certificate or degree. Any student may apply to a degree program at a later time. For instructions on how to do so, please refer to the regular application procedures.

Full-time students enroll for 12 credits or more. Part-time students enroll for 11 credits or less. Full-time students may take a fifth credit class. Students registering for more than 17 credits must pay a nominal fee of \$100.

FRESH START

1. Colleges shall have a policy called Fresh Start, which will allow students who have not attended college for a period of two or more years and who have a poor academic record to refresh their Grade Point Average (GPA) and develop a more favorable academic record. Students accepted for enrollment under Fresh Start will meet with a designated college official to determine their academic status for re-entry into the college.
2. All grades previously earned will remain on the student's transcript. The semesters for which Fresh Start is invoked will include a transcript symbol indicating that the policy is in effect. The original GPA will not be included in any subsequent computation of the new GPA. If the Fresh Start option is approved, the student will receive credit for courses with a grade of C-minus or above, including "P" (Pass).
3. The Fresh Start option can be used only once.
4. The Fresh Start option does not apply to any completed degree or certificate.
5. A student must complete a minimum of 15 credits after returning to college under the Fresh Start option to be eligible for a degree or certificate, and for graduation honors.
6. Each college is responsible for developing its own procedures for managing Fresh Start, including where and how the student applies, what forms are used, who approves the application, and how the student's progress is monitored.

WITHDRAWAL FROM INDIVIDUAL COURSE(S)

If you wish to withdraw from a course, you should understand the policies outlined below.

- **DO NOT SIMPLY STOP ATTENDING CLASSES.** Students who stop attending classes rather than officially withdrawing from a course may be subject to probation, suspension or dismissal. This has a permanent impact on your official college transcript.
- You are encouraged to speak to an advisor or counselor before withdrawing from a course. To withdraw from a course, obtain a Withdrawal form from the Registrar's Office or the Counseling & Student Success Center. In addition, please note the following policies:
- A student who wishes to withdraw from individual course(s) may do so up to the tenth week of class. After the tenth week, and prior to one week before the last day of classes, withdrawals are permitted only with the signature of the instructor.
- If you withdraw from a course after the ADD/DROP period, you will receive a grade of "W" in each course.

WITHDRAWAL FROM THE COLLEGE

A student who wishes to withdraw from the College may do so by the last day of classes by contacting the Registrar's Office and completing the withdrawal process. (Deadline date are outlined by the Registrar's Office) A grade of "W" will be given for each course not completed at the time of withdrawal. A student must complete a readmit application if he/she desires to return to the College after a two-year time period.

REPEATING A COURSE

Student may not enroll in the same course more than three times. Please note that current Financial Aid policies only allow for payment of the same course for two attempts. If a course is repeated, the highest grade received will be used in calculating the student's academic average. This does not apply to courses that are designed to be repeated for additional credit.

INDIVIDUALIZED INSTRUCTION

Students and instructors may arrange for individualized instruction in a catalog course not offered in a given semester. An Individualized Instruction Permission form shall be completed and signed by the student, the instructor, the Department Chair, and the Dean of Academics. This form, available in the Records Office, may be submitted during registration but no later than the end of the Add/Drop period.

INDEPENDENT STUDY

Independent Study provides special opportunities beyond the course offerings of the catalog. To be eligible, a student's cumulative grade point average must be 3.0 or better.

Interested students must fill out an Independent Study form, describing the objective(s), justification of the study, nature of the learning outcomes, learning methodology, and evaluative criteria. After the form has been completed, it must be signed by the instructor and the student. The student must then submit the form to the Office of Dean of Academic Affairs for final approval. The student must also obtain an Add slip from the Registrar's Office or the Counseling & Student Success Center, in order for the study to appear on the student's record. Upon completion of the independent study, a brief written evaluation will be attached to the student's permanent record. This evaluation will be submitted to the Registrar with the grade report.

Students shall be limited to three (3) Independent Studies at GCC. Only one (1) Independent Study may be taken per semester. No Independent Study may begin in the student's first semester.

TECHNOLOGY STATEMENT

Success in personal, academic, and work environments requires the acquisition and use of information and technological literacy skills. The Connecticut Community College system is committed to providing experiences to help you achieve that success. In many of the courses offered at Gateway Community College students may be required to perform some or all of the following technology-focused activities during and/or outside scheduled class time:

- Access course materials (including assignments, readings, audio or video recordings, or tests) using Blackboard and/or the Internet,
- Perform research using the Internet and online databases,
- Complete class assignments in word-processed or other computer-generated format, or through the use of other technology as designated by the instructor,
- Communicate electronically with the instructor or other students in class.
- See your instructor for specific technology requirements

DISTANCE LEARNING (DL)

Phone#: 203.285.2570

Email: GW-DistanceLearning@gatewayct.edu

Coordinators: Lynn Roller and Don Walker

Associate: Robin DeJesus

Gateway Community College offers numerous courses utilizing the Blackboard Learning Management system available to Connecticut Community College students. Blackboard allows instructors to post materials, messages, tests, assignments, grades, and to communicate with students online. Various courses delivery methods use Blackboard:

- ONLN: instruction and learning conducted fully online
- OLCR: online instruction with orientation and testing conducted on campus
- HYBR: a blend of on campus and online instruction, reducing the amount of "seat time" in the classroom (40% on campus-60% online)
- Web-Enhanced: traditional on campus class that utilizes online material to enhance the course

Online courses/presentation is similar to a traditional on-campus class. All the elements of the course are maintained; instructor, classmates, syllabus, course material/content, textbooks, lectures, discussions, tests, assignments, due dates/times, and grades. Student can expect to spend the same amount of time on the course material as in a traditional course.

For example, a traditional 3-credit would meet for class on campus for 3 hours per week. Instructors generally expect 1 to 2 hours of out-of-class work for each hour spent in class, for a total of 9 to 12 hours per week. The 3 hours of class time is spent online, these courses are not generally self-paced which means student must adhere to the dates/times outlined on the course syllabus.

Characteristic of a successful online student:

- Highly motivated, organized, independent learners
- Possess good time management skills
- Have good reading, writing, and communication skills
- Be able to perform basic computer literacy skills
 - Keyboarding, web browsing, word processing, email, attaching files, etc
- Have regular and reliable access to a computer with internet access

Students automatically receive a system email with helpful introductory information when they register for an ONLN, OLCR, or HYBRID course. Be sure to check your GCC email on a regular basis for important notices.

Please contact the Distance Learning faculty with any comments, questions, or concerns. Student orientations and guidance is available throughout the semester.

PRIOR LEARNING ASSESSMENT (PLA)

In addition to earning traditional credit through completion of college courses, students may earn up to 30 credits for knowledge acquired outside the college classroom from such experiences as paid or volunteer work, on-the-job training, vocational training, hobbies or self-initiated study. In general the college awards credit when a student demonstrates competence in areas that are required in the student's program of study. A student can demonstrate competence through the following methods of assessment.

- **Standardized Tests** such as Advanced Placement Exams, given during high school administered by College Board or College Level Examination Program (CLEP), also administered by College Board, enable students to earn college credit in academic disciplines ranging from mathematics to foreign language by achieving sufficient scores on either exam. Test results must be submitted directly to the Admissions Office for review and acceptance of credit. Information about exams and registration procedures is on the College Board website, www.collegeboard.com/clep. A transcript of each exam must be sent directly to the admissions office for review. Credits earned through this method can be sent directly to other institutions for review upon transfer however, acceptance is at the discretion of the receiving institution.
- **Credit for Previously Evaluated Training** for instance, by the military or professional organizations and associations, can be earned if the program has been previously evaluated. Charter Oak State College and the University of the State of New York have evaluated many training programs offered by public and private non-collegiate organizations in Connecticut and New York. In accordance with Board of Trustees policy, GCC will award credit to students who have successfully completed non-collegiate sponsored instruction and various health training programs including: the Basic Police Training Program conducted by the Municipal Police Training Council; training conducted by the Commission on Fire Prevention and Control and Bureau of the State Fire Marshall; the Pre-service Orientation Program conducted by the Connecticut Department of Corrections; the American Institute of Banking Program of the American Banking Association; and Licensed Practical Nurses are eligible for advanced placement in the Nursing program based on the Connecticut Articulation Model for Nursing Education Mobility. Students should first petition the Admissions Office for direct award of credit. Students can also utilize the PLA Credit for Prior Training program coordinated by Charter Oak State College by visiting www.CharterOak.edu. Credits earned through previously evaluated training can be submitted to other institutions for review upon transfer however, acceptance is at the discretion of the receiving institution.
- **Assessment by Examination** allows students to earn GCC credit for courses that address GCC graduation requirements. A faculty member chosen by a Department Chair/Division Director and approved by the Dean of Academic Affairs develops and administers the exams. Qualified faculty administer individual tests to determine whether a student will be awarded credit without having taken a course. Contact Career Services at (203) 285-2144 to determine whether an examination has been approved for a course, to obtain the Credit by Examination application or for more information about the process. To apply to take an exam in one or more courses, a student must submit a Credit by Examination form for each course to the chairperson of the department or program coordinator in which the course is offered. The student must state on the form how the relevant knowledge was gained. The department chairperson designates a faculty member who, upon approval by the Academic Dean, administers the exam. The Academic Evaluation Fee is \$15 per test. Credit earned through Assessment by Examination is institutional credit, it can be applied to graduation but is not typically transferred out to other institutions.

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- **Assessment by Portfolio** allows students to demonstrate competence in one or more courses in their program of study. The student must compile a portfolio that includes relevant learning experiences, detailed descriptions of skills corresponding to competencies taught in the college courses, and relevant supporting documentation as defined by faculty assigned to oversee the process. The Department Chair and/or Program Coordinator will designate a faculty evaluator approved by the Dean of Academic Affairs. The Portfolio Assessment fee is \$50. Contact the Career Services Office at (203) 285-2144 to obtain more information about the process. Students can also utilize the PLA Portfolio assessment program coordinated by Charter Oak State College by visiting www.CharterOak.edu. Credit earned through portfolio submission is institutional credit, it can be applied to graduation but is not typically transferred out to another institution.

GRADUATION

Graduation is NOT automatic! The final responsibility for meeting program requirements rests with the student. Students are strongly encouraged to see a counselor to verify their eligibility for graduation PRIOR to the start of their last semester.

1. The Counseling and Student Success Center reviews and evaluates student transcripts for graduation. Students enrolled in degree programs should request an initial transcript evaluation after earning thirty (30) credits. Students enrolled in certificate programs should request an initial transcript evaluation after earning nine (9) credits or completing one-half (1/2) of the requirements.
2. Students should complete a preliminary graduation audit online at the Counseling and Student Success Center. An official graduation audit is then conducted by the Records Office. Student MUST submit a graduation application by the posted dates in order to be audited and awarded a degree.
3. A candidate for graduation will be evaluated under the most appropriate catalog, as follows:
 - A. **For DEGREE STUDENTS - the catalog under which the candidate first enrolled shall be used to determine graduation requirements, except in the following cases:**
 1. If the candidate was readmitted to the College after an absence of four or more consecutive semesters, the catalog under which the candidate was readmitted shall be used.
 2. When the candidate changes programs during attendance, the catalog in use at the time of the last change in program shall be used.
 3. If there has been a change in the General Education requirements of the program, the candidate must fulfill the new requirements prior to graduation.
 4. The Registrar's Office determines that either the catalog of readmission or the current catalog should be used for graduation.
 - B. **For CERTIFICATE STUDENTS - the catalog in force at the time of enrollment shall be used, unless the Registrar determines that either the catalog of readmission or the catalog of graduation should be used.**
4. To graduate, a student must: (1) have a cumulative quality point average of at least 2.0; (2) have the minimum semester hours of credit; and (3) successfully completed the required and elective courses as designated by the curriculum, and (4) fulfilled all financial obligations to the College.

AWARDING OF MULTIPLE ASSOCIATE DEGREES

1. A student who already holds an academic degree may earn a second degree in a different curriculum at a community college. Such a student shall be treated similarly to a transfer student with respect to the minimum number of credits he or she must take for the second degree. This will require that a student meet all program requirements and earn at least twenty-five (25) percent of the minimum requirements for the new curriculum at the college through which the second degree is to be conferred.
2. A student may earn two degrees simultaneously at a community college by fulfilling all requirements stated above.
3. Requests for additional degrees beyond the second require approval from the academic dean. Students who receive approval must then complete all program requirements, including earning a least twenty-five (25) percent of the minimum requirements from the new curriculum at the college through which the degree is to be conferred.
4. Completion of the requirements of an additional program option does not automatically constitute completion of an additional degree.

TRANSCRIPTS

Students desiring to have official transcripts of grades mailed to other educational institutions must complete a Request on mycommet or a Request of Transcript form in the Records Office. The form may be downloaded from the www.GatewayCT.edu website. **Official transcripts will be mailed directly to other educational institutions.** One to two weeks are necessary to process such requests. Two weeks before and after a semester begins or ends, it will be a minimum of two weeks to process. No official transcripts may be picked up.

TRANSFER PROGRAMS

Gateway is committed to assisting students in obtaining their educational goals. Should those goals include transferring an associate's degree to a four-year institution, students may transfer to any college or university they choose. Students may have a lot of questions, such as whether their courses will transfer or whether they can change majors. If students have questions or are unsure of where to transfer for their bachelor's degree, they should meet with an Advisor in the GCC Counseling and Student Success Center or a designated Faculty Advisor to develop a transfer plan.

TRANSFER OPPORTUNITIES AT GATEWAY

CONNECTICUT STATE COLLEGE AND UNIVERSITIES (CSCU) TRANSFER TICKET DEGREES

CSCU's Transfer Ticket are new degree programs providing pathway for community college students to complete degree programs that transfer to Connecticut State Universities (Central, Eastern, Southern, and Western) and Charter Oak State College without losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline. You will be able to transfer, apply to competitive admissions majors, and complete your BA/BS degree in the same time and with the same course requirements as students who start at a CSU or COSC.

The Transfer Tickets taking effect in the fall 2017 are:

Accounting	French
Art	History
Biology	Italian
Business	Management
Business Administration	Marketing
Chemistry	Mathematics
Communication	Physics
Computer Science	Political Science
Criminology	Psychology
Early Childhood Teacher Credential	Social Work
English	Sociology
Exercise Science	Spanish
Finance	Theater

Please visit www.ct.edu/transfer for details

***For more information on CSCU Transfer Ticket Degrees
Please contact Dr. Lauren Doninger at ldoninger@gatewayct.edu***

GAP PROGRAM TO UNIVERSITY OF CONNECTICUT (UCONN)

The Guaranteed Admission Program (GAP) is an agreement between the Connecticut Community College System and the University of Connecticut designed for students who plan to earn a bachelor's degree in either Liberal Arts and Sciences or Agriculture and Natural Resources. To be eligible for the GAP program, students must have earned 16 or fewer credits at Gateway and be enrolled in our Liberal Arts and Science degree program. To find out more about GAP or to sign up for the program, see Dr. Lauren Doninger, Room S124C, (203) 285-2601.

COLLEGE OF TECHNOLOGY (COT) ENGINEERING PATHWAY

The Engineering Science Pathway program allows community college students to follow an integrated curriculum at Connecticut's public and private colleges and universities, allowing individuals to begin their studies at Gateway Community College and progress directly into a bachelor's degree program at a 4-year university. The curriculum consists of two distinct pathways: engineering and technology. For more information please contact Professor Susan Spencer, Room S401E, (203) 285-2452. The student may transfer to the following institutions:

- University of Connecticut
- School of Engineering at the University of Hartford
- School of Engineering at the University of New Haven
- School of Engineering at Fairfield University
- School of Technology at Central Connecticut State University
- Charter Oak State College

RN TO BSN/MSN PATHWAY

Students completing their RN program at GCC have many options via system wide articulation agreements. Graduates of the Connecticut Community College Nursing Program (CT-CCNP) have the opportunity to continue their education at a number of baccalaureate and advanced degree programs throughout the state and beyond. For a complete list, visit www.ct.edu/academics/nursing#agreements.

ARTICULATION AGREEMENTS:

Gateway has a variety of general and program to program articulation agreements with area colleges and universities. These agreements allow students to continue their studies at a Baccalaureate level. Students should visit the GCC transfer-on webpage for the most up-to-date list of transfer programs and articulation agreements.

<http://www.gatewayct.edu/Programs-Courses/Transfer-On>

WORKFORCE DEVELOPMENT & CONTINUING EDUCATION The GREAT Center

Telephone (203) 285-2300

The mission of the GREAT Center, Gateway's Resource, Education and Training Center, is to be the educator of choice for a high quality workforce. Our responsive and tiered approach meets the evolving educational and technological needs of students. We provide comprehensive skill development that supports our region's economic advancement.

BUSINESS AND INDUSTRY SERVICES

Skill development and enhancement is the key to growth in new and established businesses in South Central Connecticut. A sample of the training programs available are:

- Professional Development
- Industry Specific Skills
- Computer Training
- Customized On-Site Training

WORKFORCE DEVELOPMENT AND CERTIFICATE PROGRAMS

The GREAT Center offers non-credit certificate programs to dislocated workers, those who need updated or additional industry-recognized credentials, and those seeking entry-level skills that lead to employment or higher-level education. Full certificate programs are approved by the regional Workforce Investment Board and meet the criteria for inclusion on the Connecticut Department of Labor's Eligible Training Program List (ETPL). Many have also been approved by the U.S. Department of Veterans Affairs (VA) and the Connecticut Department of Higher Education for G.I. Bill benefits.

Certificate programs include (See funding descriptions below – *Y-Yes/Approved, N-No/Not Approved, P-Pending Approval*):

Course	Certification	SNAP*	WIOA**	Veteran's Affairs***
AAPC (Medical Coding)	Industry	Y	Y	P
Bookkeeping	National	Y	Y	Y
Business Analyst	Industry	N	P	P
Business Professional (Microsoft 16)	Industry	Y	Y	Y
Church Management		N	N	N
CNA	State	N	Y	P
Community Health Worker	Industry	Y	Y	P
CompTIA A+ & Network+		Y	Y	Y
Customer Service	Industry	Y	Y	P
Distribution, & Logistics, (CLA) Technician Certificate	National	Y	Y	P
EMT	State	Y	Y	Y
Medical Office Assistant	Industry	Y	Y	Y
Patient Navigator	Industry		Y	P
PCT (Patient Care Technician – includes Phlebotomy and EKG)	National	Y	Y	P
Pharmacy Technician	National	Y	Y	Y
Print & Digital Media	Industry	Y	Y	P
Real Estate Principles & Practices	State	N	Y	Y
ServSafe Food, Alcohol and Manager	National	Y	Y	P
Small Engine Repair	Industry	Y	Y	P
Web Design		Y	Y	P
Web Development		N	Y	P

Supplemental Nutrition Assistance Program (SNAP): Federal and state grants administered for employment and training to those eligible. Contact the program coordinator for seat availability, requirements and orientation dates.*

Workforce Investment and Opportunities Act (WIOA): Funded programs approved by the Workforce Investment Board and listed as an approved provider on the Eligible Training Provider List (ETPL).**

Veteran's Affairs: Funded programs approved by the U.S. Department of Veteran's Affairs and the Connecticut Department of Higher Education for G.I. Bill benefits.***

SNAP, WIOA, and VA Assistance programs are subject to change and based on seat availability. Please refer to the GREAT Center's most current catalog or contact the program coordinator for information.

A non-credit certificate program may be taken in its entirety, or as independent, selected courses. Programs are offered in modules, with rolling start dates and held at various times during the day, evening and weekends to accommodate the needs of all students.

CONTINUING EDUCATION & ENRICHMENT

The GREAT Center's continuing education and enrichment division provides affordable learning opportunities for individuals and groups that are designed for personal development and recreational or leisure activities. Popular programs include:

- Connecticut Basic Boating certification
- Motorcycle Rider courses for beginner and experienced riders
- Sidecar and trike education (S/TEP)/3-Wheels Course
- Microsoft Office Basics

STEP FORWARD

Director (203) 285-2505

The Step Forward Programs (SFP) offer young adults with various disabilities a two-tiered, comprehensive, transition program designed to enhance self-advocacy, interpersonal skills, financial literacy, study skills and work readiness. The program began in 2005 and has worked with young adults (18-21) from across the State of Connecticut.

Students work within a cohort model where they receive individualized attention. The components include:

- **Step Forward I** is a 10-month transition program for young adults (18-21) with mild cognitive disabilities. This non-credit certificate program focuses on workplace readiness and college readiness along with self-advocacy skills. In addition to classroom instruction, students participating within this tier are placed in a community or campus-based work experience.
- **Step Forward II and High Functioning Autism Spectrum Disorder Program*** is a two semester program designed for those students who have successfully completed Step Forward I and are academically and socially qualified to move into an academically focused program at Gateway. Students in year II will focus on the career objectives identified through the first year by engaging in related college coursework and work experience. Students may take up to two, 3-credit classes at Gateway and are required to attend additional non-credit seminars to enhance study, time management, and organizational skills.

***High Functioning Autism Spectrum Disorder Program** is designed for students on the autism spectrum who are academically qualified to enroll in classes at Gateway Community College. The program offers an additional level of support, beyond the federally mandated ADA (disability) services. Students must apply for admission to Gateway Community College and take the placement test to determine appropriate classes. Students requiring academic accommodations must register for disability services.

Services include case management to students in order to monitor student progress by providing academic and disability-related counseling, referrals to appropriate college and community-based resources, and assistance with college procedures including admissions, financial aid, academic advising, registration, and accessing disability services. Students are also required to participate in an unpaid work experience.

BOOT CAMPS – MATH AND ENGLISH READINESS

Program Coordinator (203) 285-2203

Gateway offers free prep courses in the subject areas of Math and English. These 'boot camps' are for students wishing to refresh their basic skills and improve their ACCUPLACER scores. Attending a boot camp will provide students with the opportunity to become familiar with the Gateway campus, review their basic Math and English skills, and build confidence. After successfully completing the boot camp, students may retake the ACCUPLACER test and possibly place into a higher level course therefore saving **TIME AND MONEY**. Boot camps are for students who are motivated, hard-working and able to commit to attending all sessions of the program.

LEARNING SUPPORT SERVICES

BOOKSTORE

Telephone (203) 865-5614
Email 0809mgr@fhey.follett.com
Website: www.gctc.bkgtr.com

The bookstore carries all course textbooks, other reading materials, art and science supplies, notebooks and school supplies, sundries, snacks, clothing, gifts, and other items of interest. The operating hours of the college bookstore are flexible, thereby providing services to both day and evening students.

CENTER FOR EDUCATIONAL SERVICES

Telephone (203) 285-2217 or (203) 285-2519

The Center for Educational Services (CES) provides academic support services for the students. The CES provides tutorial assistance and related services to help students become better skilled in selected areas. Tutoring is available in Math, English, ESL (English as Second Language), Sciences and Accounting. Computer assisted tutorial are especially useful for review and practice of basic skills in My MathLab is available for all the students. Tutoring is provided for most courses on a small group basis, as available. All students are welcome in the center and are encouraged to use any of the services. Call to obtain information on office hours. Please keep in mind that budget restrictions limit the resources available each semester and therefore services are most available early in the semester and can quickly become limited.

Tutoring

Students enrolled in classes at Gateway during the Fall and Spring Semesters may receive free tutoring. Tutoring is provided on a small group basis as available for many entry-level courses at the college.

Placement Testing

The college welcomes students with different levels of academic preparation. The college believes that proper course selection is one of the keys to academic success. All first-time, degree or certified students are required to take a Placement Assessment in Reading, Writing, and Mathematics. Placement Assessments are also available for students who have limited English proficiency. (Please refer to the English as a Second Language course description.) Test results are used to advise students into appropriate courses.

Placement Re-Testing Policy

Students wishing to register for courses beyond the Placement Test recommendation (ACCUPLACER) must get faculty approval from the Math and English Department. The department may elect to administer a local placement assessment. Faculty may then recommend a placement course consistent with the local test results. Students who wish to further challenge the placement outcome may request this from the department chairperson or the dean of the Students in the absence of the department chair. Students may authorize re-testing with ACCUPLACER. Retesting will be schedule at a time allotted by the placement coordinator, which will not displace first-time test takers.

Boot Camp students are exempt from the test retaking policy.

Please note that children are not permitted in the CES.

COLLEGE WRITING CENTER

Coordinator (203) 285-2245

Offering non-evaluative feedback, on any reading or writing assignment across the college-level curriculum, Writing Center tutors devote 45 minutes to working with individual students at any stage of their composition process. Tutors can coach students in narrowing a topic, finding a focus, developing content, organizing ideas, and improving style and correctness; they can also clarify APA and MLA guidelines for properly formatting papers as well as for citing and documenting sources. In collaboration with students, tutors identify, prioritize, and address the issues an assignment's draft presents. Their goal is to enhance a student's re-writing and editing skills and support that student in applying those skills independently before he/she submits the final paper to its ultimate audience, the professor who will grade the essay. The Center opens the second week of each semester; find operating hours on the electronic bulletin boards location around campus. For more information, contact the Writing Center at 203.285.2245.

COMPUTER RESOURCES

Computer-equipped classrooms and laboratories for the college curriculum and workshops are located conveniently throughout the campus in both the North and South buildings. All computers are linked by a high-speed network that provides access to printer, internet and other necessary computer services.

The campus has more than 30 computer classrooms. There are general purpose computer classrooms designed for the college's general curriculum, and program-specific computer classrooms for Computer Science, Allied Health, Nursing, Engineering and Graphic Design programs. We utilize more than 100 industry-standard programs for the curriculum, including Microsoft Office, Adobe CS, Autocad, Keyboarding Pro, Visual Studio, SmartCam, and MultiSim. Macintosh computers are also available on a programmatic basis to assist students. The college also has speciality laptop carts that can be brought into lecture classrooms when needed and laptop carts dedicated to the Science labs.

There are four open computer labs on campus located on the second and third floors in both the North and South buildings. At least one open lab is available when the college is open. Hours may vary by lab.

The student service area features more than 50 self-help kiosks that are designed to assist students in retrieving their campus-related information. These kiosks are located throughout the Student Services corridor and enable students to access their information using the myCommNet portal and their NetID.

The Library features more than 35 computer stations in the Learning Commons area where students can perform their library research. There is also a Library instruction classroom with 32 computers where students can learn how to properly utilize all library-related resources. The Library also houses the student laptop loaner program which has 30 laptops that can be loaned out for on campus student use.

The wireless network is available throughout the campus and allows a student to connect and access the internet using their personal wireless device (laptop, tablet, or smartphone). Just use your NetID and password for connection.

EDUCATIONAL TECHNOLOGIES

Telephone (203) 285-2268

The Office of Educational Technologies provides support to motivate and enable the College to enrich the learning process through technology. The office serves as a campus resource for information on emerging and evolving educational technologies, coordinates comprehensive media services, and assists in the electronic dissemination of information.

The office coordinates and/or provides support for the following:

- Videoconference Center
- College Website
- Audio-Visual Equipment
- Assistance in Multimedia and Video Production
- One-on-one or group instruction on presentation technology and other computer applications
- Campus-wide Electronic Message System
- Faculty/Staff Training
- Student Computer Laboratories

FIRST NIAGARA LIBRARY AND LEARNING COMMONS

Telephone (203) 285-2057

Gateway Community College maintains a full service library which provides a variety of print and electronic resources that support and supplement the curriculum of the college. In addition to the main collection, the library houses special collections, including the African American History Collection, the Early Childhood Education Model Collection and the Small Business Resource Center. The complete listing of the library's collections is available through the online public access catalog. The library also offers group and individual study rooms, collaborative pods (C-pods), laptops for use in the library, graphing calculators, headphones, and wireless Internet access. In addition, the library houses computers with internet access and Office Suite. Professional librarians are always on hand to assist users with their academic needs. Research appointments with a librarian can be made for in-depth assistance lasting up to one hour.

ELECTRONIC RESOURCES

The library homepage provides links to research tools, the online catalog, library information, and more. Research databases containing full-text articles from journals, newspapers and reference books provide academic support in all disciplines. These and other electronic resources may be accessed by Gateway students, faculty or staff on-campus via the library's homepage or off campus 24/7 using your NetID and password. The college library website address is: <http://www.gatewayct.edu/library>

INFORMATION LITERACY

Information literacy is defined as the set of skills needed to find, retrieve, analyze, and use information. Library staff members provide information literacy instruction in every academic discipline. Specialized introductions to specific resources and/or searching techniques for individuals, small groups, or classes may be arranged. Links to library instruction reservation forms may be found under Information for Faculty on the library website.

BORROWING PRIVILEGES

Borrowing privileges are granted to full and part-time faculty, full and part-time staff, alumni, and all students currently enrolled. Public borrowing privileges are granted on request, with certain restrictions. Gateway Community College identification (I.D.) is also your library card. The normal circulation period for books is three weeks. Renewals can be arranged in person, by phone, or online. If a borrower does not return items on time he/she will be billed for the cost of replacement plus a processing fee. If a student fails to comply, this may result in a loss of borrowing privileges, withholding of diploma, denial of transcript requests to other institutions, and refusal of re-registration.

SERVICE DESK

The Service Desk on the main floor is a central point for many library services, including:

- Self-check-out and Return of all Materials
- Reference and Research Help
- Computer Help
- Reserve Materials
- Interlibrary Loan Services
- Request for Information Literacy Instruction class

Staff will be happy to assist all users with information needs. Questions can be submitted in-person, by phone, email, text, or instant messaging. Come in and browse!

STUDENT SUPPORT SERVICES

STUDENT ENGAGEMENT AND CAREER DEVELOPMENT:

ATHLETICS AND INTRAMURAL SPORTS

Telephone (203) 285-2213

Gateway Community College is a member of the National Junior College Athletic Association, Region XXI (NJCAA), and abides by its eligibility rules and code of ethics. Inter-collegiate team sports include men's and women's basketball. All intercollegiate student athletes must maintain a minimum of a 2.0 grade point average and carry at least twelve (12) credits per semester as well as abide by all policies stated in the Student Athlete Guidelines. Contact the Director of Athletics by calling (203) 285-2213.

CAREER SERVICES

Telephone (203) 285-2144

The mission: Career Services exists to educate and empower students and alumni throughout their lifelong career development journey. We provide personalized and innovative services, resources and technology that ultimately prepares students to make optimal use of their knowledge, skills and abilities in order to compete globally for the career they deserve.

We offer individual instruction and consultation on a variety of topics including: career planning, job search strategies, resume writing, interviewing and workplace success. Career Services staff provide classroom instruction along with a variety of workshops and seminars throughout the year. Whether you are an experienced professional or new graduate entering the workforce for the first time, Career Services can assist you in reaching your career goals.

The online job board: MyGateway Job Search <http://gcc-csm.symplicity.com/>.

Career Counseling

Career counseling is available to prospective or current students, including those in the General Studies curriculum, who have not decided on a college program or career direction. Career counseling helps students to identify career possibilities and move toward a decision.

Interest Testing

A student may take, free of charge, written interest inventories and other career tests. The results usually help to identify specific career areas of interest for the student to explore.

Occupational Information

Career Services maintains information on career fields to help students develop their career plans. Information on occupations, colleges across the country, and sources of financial aid can be obtained from the *Choices* computer system.

Employment Services

An online service, *MyGateway Job Search csm*, is available on the Career Services page of the College website. This service enables students and graduates to seek employment by searching for job listings and registering their resumes. Job postings also are maintained in notebooks in both Career Services offices. Employers can list full-time, part-time, seasonal job openings, and volunteer opportunities with the Career Services office, visit the College individually, and attend Job Fairs.

Job Search Skills

Career Services offers personal assistance and group workshops related to job search skills including resume writing, interviewing, networking, and job-seeking strategies. A series of over 75 *JobShop* handouts is available. Students may use computers in the Career Services offices on both campuses to write resumes and letters.

GENDER EQUITY CENTER

Telephone (203) 285-2412

The Gender Equity Centers offers a safe and welcoming space that indorses a non judgmental and supportive atmosphere. The Gender Equity Center Coordinator is available to talk one on one with students seeking support, assistance, and victim centered counseling for a range of personal issues. We offer support services and referrals related to gender based violence, survivors of sexual violence, intimate partner violence, stalking, acts of bias based on sexual orientation, women's health, sexual orientation and identity.

STUDENT ACTIVITIES

Telephone (203) 285-2208

As the center of student activity, the Office of Student Activities and Leadership Programs is an integral part of the educational mission of Gateway Community College. By offering a variety of programs and services that meet the needs of the Gateway Community, we create an environment for individuals to interact and learn from one another. We provide opportunities for student, faculty, and staff involvement in campus life and community service.

The Office of Student Activities and Leadership Programs, a student-centered organization, values participatory decision making, self-directed activity, and the open exchange of ideas. Through service to the campus community in student governance and leadership, we foster interactive and developmental experiences in leadership and social responsibility. Furthermore, we enhance the academic experience through an extensive array of cultural, educational, recreational, social, and leadership programs. Student activity fees fund the student activities program within the framework of a yearly budget approved by the Student Government Association.

Student Government Association

Gateway Community College has a Student Government Association (SGA) whose members are elected annually by the student body. The SGA serves to promote good citizenship and harmonious relationships throughout the college and the community. It serves to provide a forum for student representation and to provide orderly direction of college activities. The Student Government Association is responsible for the allocation and distribution of the Student Activity Fund. Any student who meets the necessary academic requirements and pays the student activity fee is eligible for election to the Student Government Association. For more information about the Student Government Association, contact (203) 285-2242 or e-mail gw-sga@gwcc.commnet.edu.

The Campus Activities Board

The Campus Activities Board (CAB) is a sub-committee of the Student Government Association. CAB's purpose is to successfully coordinate, implement, and execute a comprehensive calendar of social, recreational, educational, film, performing arts, service, philanthropic, concert, and cultural events for activity fee paying students at Gateway Community College. For further information call (203) 285-2249 or e-mail the CAB Chair at gw-cab@gwcc.commnet.edu.

Student Organizations

The Student Government Association recognizes numerous student organizations that are formed by special interest groups and advised by a member of the College staff. New student organizations may be formally recognized by the Student Government Association throughout the year. Some of the clubs and organizations that have been formally recognized by the Student Government Association are: Art Club, Armed Forces and Veteran's Club, Black Student Association, Christian Fellowship Club, Computer and Gaming Club, Early Childhood Association, Engineering Club, Financial & Economics Club, Gay Straight Alliance, Gospel Choir, International Student Association, Organization of Latin American Students (OLAS), Meditation Club, Muslim Student Association, Poetry and Music Club, Recreation Club, Science Club, Student Nursing Association, Theater Goers Club and Turkish Student Association.

Honor Societies

Students are selected on the basis of outstanding academic scholarship for membership in Phi Theta Kappa Honor Society, the honor society for the two-year colleges.

STUDENT DEVELOPMENT

Telephone **(203) 285-2033**

Student Development supports the education and preparation of students for full participation in civic, cultural, and professional life. Our department strives to create, direct and sustain programs that support the broad educational and developmental needs of our diverse college community to achieve success.

VETERANS' AFFAIRS

Telephone **(203) 285-2146**

Veterans Administration Benefits

Veterans, members of the Reserves and dependents of veterans who believe that they are eligible for educational benefits from the Veterans Administration may obtain an application for benefits from the Director of Career Services, who is the Veterans Certifying Official for the college. Students who are receiving VA benefits *must* notify the Certifying Official of their course schedule *each semester* and of any changes in their course load. Courses must meet requirements of the degree or certificate in which the student is enrolled.

Some non-credit programs are certified for VA benefits; veterans may ask the Certifying Official whether they can receive benefits while attending a specific non-credit program.

To be eligible to receive educational benefits from the Veterans Administration, a student must maintain satisfactory academic progress, as defined by college policies. The Veterans Certifying Official at the college will not certify a student for VA educational benefits who has been suspended because of a failure to maintain satisfactory progress. Eligibility to receive benefits will be reinstated upon readmission.

Connecticut Tuition Waiver

Veterans who meet the requirements listed under "Tuition and Fee Waivers" (page 29), including service on active duty for at least 90 days during the periods defined as war-time by state statute, are eligible for a waiver of tuition for general fund courses. The student must present a copy of DD Form 214 to the Payments Office to obtain the waiver. The waiver applies only to credit courses offered in the fall and spring semesters, and eligible veterans must pay all fees.

STUDENT SUCCESS CENTER:

Telephone **(203) 285-2090:**

The Student Success Center provides comprehensive services in an environment conducive to learning by providing the support students need to reach their full potential. The Success Center includes the following departments, programs and services: Academic Advising, New Student Advising and Registration (NSAR) Program, Counseling, and Retention and Basic Needs Services.

ACADEMIC ADVISING:

Telephone **(203) 285-2090:**

Academic advising, based in the teaching and learning mission of higher education, is a series of intentional interactions with a curriculum, a pedagogy, and a set of student learning outcomes. Academic advising synthesizes and contextualizes students' educational experiences within the frameworks of their aspirations, abilities and lives to extend learning beyond campus boundaries and timeframes (NACADA, 2006).

Academic Advising is a key component of your success at Gateway Community College. Seeking academic advising each semester will reduce the likelihood of improper course selection and delays in graduation. Students should seek advisement at the midpoint of each semester for the upcoming semester. When mid-term exams begin seek out advising. The advising session includes an interactive dialogue between advisor and advisee the covers a range of topics such as; educational goals, career goals, academic progress and school-work-family balance. At the conclusion of the session the advisor should recommend a set of courses based on this discussion and create or update your academic plan.

New Students

All new students first time freshman must attend a New Student Advising & Registration (NSAR) session. NSAR is Gateway's program to assist new students in understanding the academic world, and to register for their first semester of courses at the college. Students attending the program will:

- Register for their first semester of courses
- Receive advising to begin their college career
- Understand the nature of college instruction
- Learn how to navigate student services and enrollment
- Learn the electronic self-service tools for advising and registration

Transfer and Re-Admit Students

Students should seek their first semester advising from the Counseling & Student Success Center in N213. To schedule an appointment contact (203) 285-2090. At the advising session students will;

- Meet with a professional staff member to review previous credits taken at Gateway or other institutions (please be sure to bring unofficial transcripts from any other college besides Gateway to receive accurate advising); and,
- Receive academic advising to understand program requirements, develop an academic plan and select classes for the upcoming semester.

Continuing Students

Continuing students have different options for obtaining academic advising, however, the most common places to seek advising are; academic program coordinators, chairs and directors or generalist counselors/advisors. Students who have selected a program major should seek advising from the academic program coordinator or his/her designee. Students who are undecided or exploring several options should seek advising from a professional staff member in the Counseling and Student Success Center in Room N213. To schedule an appointment visit the continuing student advising homepage at: <http://www.gatewayct.edu/continuingadvising>

COUNSELING

Telephone (203) 285-2090:

Professional Counselors are available to help students obtain the most from their college experience. GCC offers students comprehensive counseling services including: assistance with referrals to community resources, interventions for students in crisis, guidance on managing personal concerns that interfere with educational goals, vocational guidance, assistance with transfer to four-year institutions, and academic counseling. Counselors are available most hours the College is in session by appointment. The Counseling office provides information and activities about transferring and workshops to support academic achievement. To speak to a counselor, please contact us in room N213 or by calling (203) 285-2090.

RETENTION AND SUPPORT SERVICES:

Telephone (203) 285-2090:

Succeeding in college requires that students address areas both inside and outside the classroom that may impact their learning. The Student Success Center offers the following comprehensive services to promote success Achievement Coaching, Basic Needs (Center for Students and Families) and Early and Academic Alert Counseling.

Achievement Coaching: Individual meetings and workshops assist students in managing college work through the identification of goals and the development of appropriate strategies. The following areas are commonly addressed through the coaching program; goal setting, learning styles, organization, note taking, time management, test taking strategies and test anxiety.

Basic Needs (Center for Student and Families): Students can access support for a variety of services aimed at addressing basic needs. The center provides the following services to students, Mobile Food Pantry, application for public benefits, heating assistance, community referrals and additional services as needed.

Early and Academic Alerts: Professional staff members respond to reports submitted by faculty specific to the student's performance in particular course. Individual meetings and workshops allow the student to explore the areas of concern and establish a plan for success including referrals to programs and services both on and off-campus.

STUDENT ACCESSIBILITY SERVICES

Telephone (203) 285-2231

**Student Disability Specialist: Ronald Chomicz / email: rchomicz@gatewayct.edu
Samantha Kusiak / email: skusiak@gatewayct.edu**

Gateway Community College is committed to ensuring that all qualified individuals with disabilities have the opportunity to participate in our educational and employment programs and services on an equal basis. College employment and admission policies prohibit discrimination against qualified persons with disabilities.

The Student Accessibility Services office (SAS) facilitates the planning and provision of services for students with disabilities. If a student has sensory, learning, physical, medical or a mental health disability, he/she may be eligible for disability services. Students requesting services are required to provide relevant medical, psycho-educational, or mental health documentation prior to receiving services.

Due to the individualized nature of planning for and providing academic adjustments, it is essential that each eligible student meet with the Disability Specialist to discuss his/her specific needs prior to receiving academic adjustments. A student is required to request academic adjustments through the SAS office for each semester that he/she plans on receiving academic adjustments.

If you are a student who requires the use of the elevator due to a documented disability (i.e. mobility), the SAS Office encourages you to identify yourself to our office even if you do not use any other academic adjustments. By registering with the SAS office we can better assist you in the event of an elevator malfunction.

GENERAL EDUCATION REQUIREMENTS

Effective Fall 2016, General Education requirements include offerings that focus on the subject matter (the arts and humanities, the sciences, including mathematics, and the social sciences) and methodologies, as well as their relationships to one another.

General education is the hallmark of American higher education and the key to a broadly-educated citizenry. Therefore, in addition to improving the transferability of general education, we should also focus on the quality of general education. Therefore, our goal is not simply transferability but an excellent preparation for all students in their first sixty hours, including their essential general education foundation.

The general education curriculum is based on students' ability to demonstrate competence in the following areas:

- written communication in English,
- social phenomena,
- quantitative reasoning,
- scientific knowledge/understanding,
- critical analysis and logical thinking,
- aesthetic dimensions,
- historical knowledge/understanding,
- oral communication in English,
- scientific reasoning,
- ethical dimensions.

GENERAL EDUCATION OUTCOMES

Written Communication in English (WC)

Goal: Students will be prepared to develop written texts of varying lengths and styles that communicate effectively and appropriately across a variety of settings.

Social Phenomena Knowledge/Understanding (SP)

Goal: Students will develop an increased understanding of the influences that shape a persons or groups attitudes, beliefs, emotions, symbols, and actions, and how these systems of influence are created, maintained, and altered by individual, familial, group, situational, or cultural means.

Quantitative Reasoning (QR)

Goal: Students will learn to recognize, understand, and use the quantitative elements they encounter in various aspects of their lives. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions.

Scientific Knowledge/Understanding (SK)

Goal: Students will gain a broad base of scientific knowledge and methodologies in the natural sciences. This will enable them to develop scientific literacy, the knowledge and understanding of scientific concepts and processes essential for personal decision making and understanding scientific issues.

Critical Analysis & Logical Thinking (CALT)

Goal: Students will be able to organize, interpret, and evaluate evidence and ideas within and across disciplines; draw reasoned inferences and defensible conclusions; and solve problems and make decisions based on analytical processes.

Aesthetic Dimensions (AD)

Goal: Students will understand the diverse nature, meanings, and functions of creative endeavors through the study and practice of literature, music, the theatrical and visual arts, and related forms of expression.

Historical Knowledge/Understanding (HK)

Goal: Students will study the interrelatedness of various realms of human experience from multiple historical perspectives.

Oral Communication in English (OC)

Goal: Students will be prepared to develop oral messages of varying lengths and styles that communicate effectively and appropriately across a variety of settings.

Scientific Reasoning (SR)

Goal: Students become familiar with science as a method of inquiry. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions.

EMBEDDED COMPETENCIES

Continued Learning & Information Literacy (CLIL)

Goal: Students will be able to use traditional and digital technology to access, evaluate, and apply information to the needs or questions confronting them throughout their academic, professional, and personal lives.

Ethical Dimensions (ED)

Goal: Students will identify ethical principles that guide individual and collective actions and apply those principles to the analysis of contemporary social and political problems.-

COMMON CORE OF GENERAL EDUCATION

The General Education Core requirements are listed below--(please refer to program for specific General Education requirements).

Competency Area	Code	How Many Credits Required
Written Communication I	WC	3
Written Communication II	WC	3
Social Phenomena/Knowledge and Understanding	SP	3
Quantitative Reasoning	QR	3
Scientific Knowledge and Understanding	SK	3 - 4
Critical Analysis/Logical Thinking	CALT	3 - 4
One Additional Competency from the following four areas: (refer to program-specific designations)		
Aesthetic Dimension of Humankind	AD	3
Historical Knowledge and Understanding	HK	3
Oral Communication	OC	3
Scientific Reasoning	SR	4
Total General Education Core Credits		21 - 24

GENERAL EDUCATION COMPETENCY COURSES

Code	Competency & Courses	Code	Competency & Courses
WC I	Written Communication I	SR	Scientific Reasoning (all 4 credits)
	ENG* 101 - Composition		BIO* 105 Introduction to Biology
WC II	Written Communication II		BIO* 115 Human Biology
	ENG* 102 Literature & Composition		BIO* 121 General Biology I
	ENG* 200 Advanced Composition		BIO* 122 General Biology II
SP	Social Phenomena/Knowledge/ Understanding		BIO* 211 Anatomy & Physiology I
	ANT* 105 Anthropology		BIO* 212 Anatomy & Physiology II
	ECN* 101 Macroeconomics		BIO* 213 Human Cadaver Anatomy
	ECN* 102 Microeconomics		BIO* 235 Microbiology
	PSY* 111 General Psychology I		CHE* 111 Concepts of Chemistry
	SOC* 101 Principles of Sociology		CHE* 121 General Chemistry I
			CHE* 122 General Chemistry II
QR	Quantitative Reasoning		CHE* 220 Biochemistry
	MAT* 109 Quantitative Literacy or any higher level Math		CHE* 231 Quant. Chemical Analysis w/ Environmental Applications
SK	Scientific Knowledge & Understanding		EAS* 110 The Earth Sciences
	Any course in BIO*, CHE*, EAS*, EVS*, or PHY*		EVS* 114 Environmental Science
CALT	Critical Analysis/Logical Thinking		PHY* 109 Fundamentals of Applied Sciences
	BES* 218 Entrepreneurship		PHY* 111 Physics for the Life Sciences
	BFN* 110 Personal Finance		PHY* 121 General Physics I
	BME* 212 Biomedical Equipment Design		PHY* 122 General Physics II
*	DMS* 223 Clinical Practicum III		PHY* 221 Calculus-Based Physics I
	ENG* 221 American Literature I		PHY* 222 Calculus-Based Physics II
	ENG* 222 American Literature II	HK	Historical Knowledge/Understanding
	ENG* 231 British Literature I		HIS* 101 Western Civilization I
	ENG* 232 British Literature II		HIS* 102 Western Civilization II
	ENG* 245 Early Western Literature		HIS* 201 U.S. History I
	ENG* 246 Modern Western Literature		HIS* 202 U.S. History II
	ENG* 254 Modern Arabic Literature	AD	Aesthetic Dimensions
	EXS* 227 Exercise Testing & Program Des.		ART* 101 Art History & Appreciation I
	HUM* 125 Intro to Peace & Conflict Stud.		ART* 102 Art History & Appreciation II
	IDS 106 Critical Thinking - Business		ENG* 271 Film & Literature
	IDS 112 Career Seminar & Internship		MUS* 101 Music History & Appreciation
*	NMT* 223 Nuclear Medicine Seminar		MUS* 141 Guitar
*	NTR* 214 Nutrition Internship III		MUS* 150 Piano I
*	NUR* 201 Nursing Care of Individuals/Families I	OC	Oral Communications
	PHL* 101 Introduction to Philosophy		BBG* 210 Business Communications
	PHL* 111 Ethics		COM* 171 Fundamentals of Human Comm.
*	RAD* 206 Quality Assurance		COM* 173 Public Speaking
*	RDT* 126 Clinical Internship II		COM* 174 Advanced Public Speaking
			HSE* 212 Mediation

Students seeking CSCU Pathway Transfer Degrees should visit the Transfer Ticket webpage for the most current list of approved TAP Transfer courses: <http://www.ct.edu/transfer/tickets#major>

ELECTIVES

These are courses selected by the student according to program requirements. When selecting electives, especially for transferability to another institution, students should consult their academic advisor.

Business

Accounting (ACC), Business (BBG, BMG, BMK, BFN, BES) Computer Science (CSC, CSA, CST), Economics (ECN), Business Office Technology (BOT), and Hospitality Management (HSP)

Computer Literacy

Keyboarding for Information Processing I (BOT* 111), Keyboarding for Information Processing II (BOT* 112). Accounting Computer Application I (ACC* 125), Business Software Applications (BBG* 115), Introduction to Software Applications (CSA* 105); Introduction to Computers (CSC* 101); Computer Logic and Programming; C, C++; Windows/DOS/Microcomputers (CSC* 120); Word Processing Applications (BOT* 137); Computers for ECE (ECE* 110); Computerized Communication (BOT* 220); Database Applications (CSA* 140); Spreadsheet Applications (CSA* 135); and Desktop Publishing (BOT* 217). For technical programs: Computer Applications for Technology (CET 116)

Engineering Technologies

Biomedical Engineering Technology (BME), Electrical Engineering Technology (EET), Computer Engineering Technology (CET), Manufacturing Engineering Technology (MFG), Mechanical Engineering Technology (MEC)

Fine Arts

Art and Music (ART & MUS)

Humanities

Art (ART), Communications (COM), English (ENG college-level), Foreign Languages (ITA, FRE, SPA) Graphics (GRA), Literature (ENG), Music (MUS), Philosophy (PHL), or Sign Language (SGN)

Mathematics

Mathematics (MAT college-level)

Natural Sciences

Biology (BIO), Chemistry (CHE), Earth Science (EAS), Physics (PHY), or Environmental Science (EVS)

Social Sciences

Anthropology (ANT), Criminal Justice (CJS), Drug and Alcohol Recovery Counselor (DARC), Economics (ECN), Education (EDU), Geography (GEO), History (HIS), Political Science (POL), Human Services (HSE), Psychology (PSY), or Sociology (SOC)

Technical

Automotive Technology (AUT), Clean Water Management (CWM), Computer Aided Drafting (CAD), Environmental Science and Toxicology (ENV), Fire Technology and Administration (FTA), Railroad Engineering Technology (RET), Solar Technology (ENV), Water Management, Wastewater Management (WMT) and all courses from the Engineering Technologies courses above.

Liberal Arts & Sciences

Any college-level course in the following disciplines: Anthropology (ANT), Art (ART), Biology (BIO), Chemistry (CHE), Communications (COM), Earth Science (EAS), Economics (ECN), English (ENG), Environmental Science (EVS), French (FRE), Geography (GEO), History (HIS), Humanities (HUM), Italian (ITA), Mathematics (MAT), Music (MUS) (non-performance), Philosophy (PHL), Physics (PHY), Political Science (POL), Psychology (PSY), Sign Language (SGN), Sociology (SOC), Spanish (SPA), Theater (THR).

ACADEMIC DEFINITIONS

The following definitions are helpful to know when selecting your program and courses:

Credit Hours (cr.) — 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 (S.H.).

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.

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.

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.

Corequisite — A course that must be taken during the same or earlier semester as the course in which one is enrolling.

Common Core — A term which refers to courses as listed under the College's Common Core of General Education which the faculty of the College considers essential to its degree programs.

Electives — Courses which may be chosen.

General Electives — All credit courses listed in the catalog. Students should consider transferability of courses when choosing general electives.

Directed/Restricted Electives — Credit courses that satisfy specific program requirements. These courses are listed with each program area.

Non-Credit — A course of study that does not apply towards the college degree; typically designed as short courses, workshops and customized programs. Non-credit programs focus on knowledge and skills that can be applied directly to the job, or personal and professional growth.

Continuing Education Unit (CEU) Certificates — Awarded for successful achievement of a non-credit program's learning objectives; typically CEU's are awarded on a 1:10 ratio (i.e., one CEU for every ten hours of qualified instruction).

Syllabus — An outline or summary of the main points in a course of study.

Matriculate — To be admitted to a program of study.

DEGREE & CERTIFICATE PROGRAMS

AA - Associate in Arts
AAS - Associate in Applied Science

AS - Associate in Science
C - Certificate

TITLE	TYPE OF PROGRAM	PAGE
CSCU PATHWAY AND OTHER TRANSFER OPPORTUNITIES	AA	37
ALLIED HEALTH		
Health Career Pathways	C	57
Pre-Dental Hygiene Transfer Compact	AS	58
Exercise Science and Wellness	AS	60
Fitness Specialist	C	62
Nutrition and Dietetics	AS	63
Diagnostic Imaging and Therapy Programs		66
Diagnostic Medical Sonography	AS	68
Nuclear Medicine Technology	AS	71
Nuclear Medicine Technology	C	74
Radiation Therapy	AS	76
Radiography	AS	79
ART		
Studio Art	AS	83
Studio Art: Graphic Design Option	AS	85
Studio Art: Web Design	C	87
AUTOMOTIVE		
Comprehensive Automotive Repair and Service (CARS)	AAS	88
Comprehensive Automotive Repair and Service (CARS)	C	90
Automotive Technology: General Motors ASEP	AAS	91
Automotive Technology: Honda PACT	AAS	94
Automotive Technology: Honda PACT	C	96
AVIATION		
Aviation Maintenance Technology	AS	
BUSINESS		
Business Administration	AS	97
Business Administration	C	99
Business Administration: Accounting Option	AS	100
Accountant's Assistant	C	102
Bookkeeping	C	102
Business Administration: Management Option	AS	103
Management	C	105
Business Administration: Marketing Option	AS	106
Public Utility Management	AS	108

BUSINESS OFFICE TECHNOLOGY		
BOT: Administrative Assistant Option	AS	111
BOT: Administrative Assistant	C	112
BOT: Office Applications Skills Update	C	112
BOT: Customer Service Technology	C	113
BOT: Electronic Health Records and Coding	AS	114
BOT: Legal Administrative Assistant Option	AS	116
BOT: Medical Administrative Assistant Option	AS	118
BOT: Medical Administrative Assistant	C	120
CONNECTICUT COLLEGE OF TECHNOLOGY		
Engineering Science (UCONN, UNH, University of Hartford, Fairfield Univ.)	AS	121
Technological Studies (CCSU, Charter Oak State College)	AS	123
COMPUTER SCIENCE		
Computer Science	AS	125
Computer Science	C	127
Computer Science: Data Security Specialist	AS	128
Computer Science: Mobile Application Development	AS	130
Computer Science: Networking Option	AS	132
Computer Science: Networking	C	134
Computer Science: Networking Administrator	C	134
DRUG AND ALCOHOL RECOVERY		
Drug and Alcohol Recovery Counselor	AS	135
Drug and Alcohol Recovery Counselor	C	138
EARLY CHILDHOOD EDUCATION		
Early Childhood Education: Career	AS	139
Early Childhood Education: Transfer	AS	144
Administration and Leadership	C	146
Child Development Associate Credential	C	147
Teacher Assistant	C	148
EARLY CHILDHOOD SPECIAL EDUCATION		
Early Childhood Special Education	AS	149
Early Childhood Special Education	C	152
Family Support and Respite Care	C	152
Infant and Toddler Development	C	153
ENGINEERING TECHNOLOGY		
Biomedical Engineering Technology	AS	154
Computer Engineering Technology	AS	156
Computer Servicing	C	158
Electrical Engineering Technology	AS	159
Electronics Technician	C	161
Manufacturing Engineering Technology	AS	162
Quality Control	C	164
Mechanical Engineering Technology	AS	165
Computer Assisted Drafting (CAD)	C	167
Railroad Engineering Technology	AS	168
Railroad Engineering Technology - Signaling and Communications Option	AS	171

ENTREPRENEURIAL STUDIES		
Entrepreneurial Studies	AS	173
Entrepreneurial Studies	C	175
FIREFIGHTER 1 & 2		
Firefighter 1 & 2	C	176
GENERAL STUDIES		
General Studies	AS	177
HOSPITALITY MANAGEMENT		
Restaurant and Food Service Management	AS	179
Culinary Arts	C	182
Professional Baker	C	183
Hotel Management	AS	184
Meetings, Conventions, and Special Events Management	C	187
HUMAN SERVICES		
Human Services Career	AS	188
Human Services Transfer	AS	190
Human Services	C	192
Human Services: Gerontology Option	AS	193
Gerontology	C	195
Therapeutic Recreation	C	195
Youth Worker	C	196
INTERDISCIPLINARY PEACE, COLLABORATION & CONFLICT		
Interdisciplinary Peace, Collaboration & Conflict	C	197
LIBERAL ARTS & SCIENCES		
Liberal Arts & Sciences	AA	198
NURSING		
Nursing	AS	201
RETAIL MANAGEMENT		
Retail Management/Fashion Merchandising	AS	203
Retail Management/Fashion Merchandising	C	205
SCIENCE		
Environmental Science and Toxicology	AS	206
Environmental Science and Toxicology	C	208
Natural Sciences And Mathematics	AS	209
TECHNOLOGY		
Clean Water Management	C	211
Solar Technology	C	212
Water Management	C	212
Fire Technology and Administration	AS	213

ALLIED HEALTH

HEALTH CAREER PATHWAYS

Certificate

The Health Career Pathways Certificate program is designed to assist students in achieving success in health care programs. Students will be provided with the foundation necessary for health care professions. Credits from this program may be applied toward health care program requirements within Connecticut's Community College system. However, completion of this program does not guarantee an automatic acceptance into any health care program. Students are responsible for verifying specific requirements for their program of interest.

For more information on the Health Career Pathways program, please contact Mary Beth Banks, Enrollment Services Assistant at 203.285.2388 or e-mail mbanks@gatewayct.edu.

Upon successful completion of all program requirements, the student should be able to:

- Identify a variety of career opportunities and roles available in health care professions
- Meet most requirements for entrance into health care programs
- Demonstrate an understanding of the impact of psychological principles and how they relate to the health care field
- Effectively utilize and interpret medical terminology
- Demonstrate critical thinking, logical reasoning and problem solving skills
- Demonstrate competence in written and oral communication
- Use and apply scientific methods

Course #	Title	Credits
HLT* 103	Investigations in Health Careers	3
ENG* 101	Composition	3
MAT* 137	Intermediate Algebra	3
BIO* 105 or BIO* 121	Introduction to Biology or General Biology I	4
BIO* 211	Anatomy & Physiology I	4
BIO* 212	Anatomy & Physiology II	4
CHE* 111	Concepts in Chemistry	4
PSY* 111	General Psychology I	3
	Total Credit Hours	28

PRE-DENTAL HYGIENE TRANSFER COMPACT

Associate of Science – General Studies

The Gateway Community College Pre-Dental Hygiene Transfer Compact is designed to provide academic opportunities for students who are seeking an Associate of Science or a Bachelor of Science Degree in Dental Hygiene. Students may complete pre-requisite and general education courses at Gateway Community College that will transfer to the University of New Haven's Dental Hygiene Program. Gateway students who complete the Associate of Science Degree in General Studies and have followed the Pre-Dental Hygiene track are eligible to apply for admission to the University of New Haven's Dental Hygiene Program.

After completing the Associate of Science or the Bachelor of Science Degree in Dental Hygiene from the University of New Haven, graduates will be eligible to take both the Dental Hygiene National Board Examination and the Northeast Regional Board Examination in order to apply for the Registered Dental Hygienist (RDH) License. The Program in Dental Hygiene at the University of New Haven is accredited by the Commission on Dental Accreditation of the American Dental Association.

For more information on the Pre-Dental Hygiene Transfer Compact, please contact Mary Beth Banks, Enrollment Services Assistant at 203.285.2388 or e-mail mbanks@gatewayct.edu.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra (or higher)	3
Scientific Knowledge & Understanding	SK	BIO* 121	General Biology	4
Critical Analysis/Logical Thinking	CALT	HUM* 125	Intro. to Peace & Conflict Studies	3
Historical Knowledge	HK	HIS* 101 or HIS* 102	Western Civilization I or Western Civilization II	3
Total General Education				22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - SK	BIO* 121 General Biology	4
Gen Ed - HK	HIS* 101 Western Civilization I or HIS* 102 Western Civilization II	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 137 Intermediate Algebra (or higher)	3
Elective	Restricted (ART* 101, 102, or MUS* 101)	3
	Total Semester Credit Hours	16

Second Semester

Course #	Title	Credits
CHE* 111	Concepts of Chemistry	4
COM* 171	Fundamentals of Human Communication	3
ENG* 251	African American Literature	3
SOC* 101	Principles of Sociology	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	16

Third Semester

Course #	Title	Credits
BIO* 211	Anatomy & Physiology I	4
DNT* 105	Introduction to Dental Hygiene	1
HUM* 125	Introduction to Peace & Conflict Studies	3
Elective	Restricted (see below)	3
Elective	Open	3
	Total Semester Credit Hours	14

Fourth Semester

Course #	Title	Credits
BIO* 212	Anatomy & Physiology II	4
DNT* 106	Introduction to Dental Hygiene II	1
NTR* 102	Nutrition I: Principles of Nutrition	3
Gen Ed - SP	PSY* 111 General Psychology I	3
Elective	Restricted (see below)	3
	Total Semester Credit Hours	14
	Total Credit Hours	60

Restricted Electives: ECN* 102, ENG* 281, PHL* 131, THR* 110

EXERCISE SCIENCE AND WELLNESS

Associate in Science

PROGRAM MISSION

To prepare students with the knowledge, attitudes and skills necessary for competent practice in exercise and for employment in the health and fitness industry while providing a basis for professional advancement.

PROGRAM OBJECTIVES

Upon completion of all program requirements, graduates should be able to:

- Recognize which muscles are used in body movement patterns and then identify solutions to improve their performances
- Conduct appropriate business and administrative practices, including marketing and promotion, in order to successfully operate in the field
- Conduct individualized client consultations and fitness assessments
- Design appropriate exercise programs for various populations (aged, youth, overweight/obese, chronic disease, etc.) based on assessments
- Implement effective wellness programming specific for the needs of target populations
- Exemplify the Code of Ethics of the American College of Sports Medicine and National Strength and Conditioning Association
- Sit for national certification board exams

Admissions Requirements

Students must present current First Aid and CPR certification that has a practical skill examination component (such as the American Heart Association or the American Red Cross) and physical examination before beginning EXS* 210 and EXS* 212. Students should consult with the coordinator of the Exercise Science and Wellness program for advice about course selection and information about additional costs, including liability insurance for EXS* 210 and EXS* 212. For more information, contact the Program Coordinator, Todd Degree at (203) 285-2446 or e-mail at (tdegree@gatewayct.edu)

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 167	Principles of Statistics	3
Scientific Knowledge & Understanding	SK	BIO* 105	Introduction to Biology	4
Critical Analysis/Logical Thinking	CALT	EXS* 227	Exercise Testing & Program Design	3
Scientific Reasoning	SR	BIO* 211	Anatomy & Physiology I	4
Total General Education				23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
EXS* 101	Introduction to Exercise Science & Wellness	3
NTR* 102	Nutrition I: Principles of Nutrition	3
Gen Ed - SK	BIO* 105 Introduction to Biology	4
Gen Ed - WC	ENG* 101 Composition	3
Gen Ed - QR	MAT* 167 Principles of Statistics	3
	Total Semester Credit Hours	16

Second Semester

Course #	Title	Credits
EXS* 115	Fitness Management	3
EXS* 210	Exercise Science & Wellness Internship I	2
NTR* 103	Nutrition Therapy I	3
Gen Ed - WC	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - SR	BIO* 211 Anatomy & Physiology I	4
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
BIO* 212	Anatomy & Physiology II	4
EXS* 225	Essentials of Strength and Conditioning	3
EXS* 229	Human Biomechanics	4
Gen Ed - CALT	EXS* 227 Exercise Testing & Program Design	4
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
EXS* 212	Exercise Science & Wellness Internship II	2
EXS* 230	Exercise Programming - Special Populations	3
EXS* 235	Exercise Physiology	4
PHY* 101	Physics for Today	3
Gen Ed - SP	PSY* 111 General Psychology I	3
	Total Semester Credit Hours	15
	Total Program Credit Hours	61

FITNESS SPECIALIST

Certificate

FITNESS SPECIALIST STUDIES MISSION STATEMENT

The mission of the Fitness Specialist Studies certificate program is to prepare graduates with entry level skills, and flexibility to compete successfully in a dynamic employment market wherever nutrition and fitness are emphasized.

The Fitness Specialist certificate prepares students for immediate employment in the fitness industry in such settings as health clubs, gyms, YMCAs, and corporate wellness programs. Graduates may also consider such self-employment careers as personal trainer or sales and marketing of health and nutrition programs and fitness equipment. Upon completion of the certificate program, students may take national exams for certification from a variety of fitness associations.

Admission Requirements

Students must present current First Aid and CPR certification that has a practical skill examination component (such as the American Heart Association or the American Red Cross) and physical examination before beginning EXS* 212. Students should consult with the coordinator of the Exercise Science and Wellness program for advice about course selection and information about additional costs, including liability insurance for EXS* 212. For more information, contact the Program Coordinator, Todd Degree at (203) 285-2446 or e-mail at (tdegree@gatewayct.edu).

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
BIO* 211	Anatomy and Physiology I	4
NTR* 102	Nutrition I	3
Elective	Restricted (see below)	3-4
	Total Semester Credit Hours	10-11

Second Semester

Course #	Title	Credits
BIO* 212	Anatomy and Physiology II	4
NTR* 103	Nutrition Therapy I	3
	Total Semester Credit Hours	7

Third Semester

Course #	Title	Credits
EXS* 225	Essentials of Strength & Conditioning	3
	Total Semester Credit Hours	3

Fourth Semester

Course #	Title	Credits
EXS* 115	Fitness Management	3
EXS* 212	Exercise Science & Wellness Internship II	2
EXS* 235	Exercise Physiology	4
	Total Semester Credit Hours	9
	Total Credit Hours	29-30

Restricted electives: ACC* 113, BBG* 210, BIO* 113, BES* 218, BMK* 201, 220, CHE* 111, COM* 171, CSC* 101, 110, EXS* 101, 102, 227, HSE* 151, PSY* 109, 111

NUTRITION AND DIETETICS

Program Mission:

To prepare graduates with entry-level skills, competence, and flexibility to compete successfully in a dynamic employment market wherever food, nutrition, and wellness are emphasized.

Program Goals:

1. The program will prepare graduates to be competent entry-level dietetic technicians.
2. To provide a Nutrition and Dietetics program that maintains a high level of student retention.
3. The program will offer quality instruction and comprehensive services to a diverse student population.

NUTRITION AND DIETETICS

Associate in Science

There is a growing demand for qualified personnel in the field of nutrition and dietetics throughout the United States. The registered dietetic technician works under the supervision of a registered dietitian nutritionist in health care, community nutrition, and food service management. Registered dietetic technicians function as active members of the nutrition team by assessing, planning, implementing, and evaluating the nutritional care of individuals or by supervising food service operations. The Nutrition and Dietetics program is currently granted accreditation by Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics (A.N.D.), 120 South Riverside Plaza, Suite 2000, Chicago, Illinois 60606-6995; (312) 899-0040 ext. 5400 or (800) 877-1600; www.eatright.org. Graduates of the program are encouraged to take the Commission on Dietetic Registration's registration examination to become registered dietetic technicians (DTR). Graduates are also eligible for membership in the A.N.D. and the Association of Nutrition and Foodservice Professionals (ANFP). Graduates may take the ANFP exam to become a Certified Dietary Manager, Certified Food Protection Professional (CDM, CFPP). The program reflects the coordination of theory and practice that is required for students to acquire the knowledge, attitudes, and skills necessary for competent practice in nutrition and dietetics. A minimum of 450 hours of supervised internship provides opportunities to practice these skills. Students who wish to transfer to an A.N.D.-approved four-year program in nutrition and dietetics should consult the program director regarding the transferability of courses.

NUTRITION AND DIETETICS OUTCOMES

Upon successful completion of all program requirements:

- Graduates will achieve a pass rate of at least 70% on the DTR exam over a five year period.
- Within twelve months of graduating at least 60% of the graduates will have attained employment related to the field of dietetics and/or enrolled in an accredited continuing education program.
- Students will achieve a satisfactory rating for the entry-level competencies of a dietetic technician.
- Employers will rate program graduates in their employ as satisfactory knowledge base on surveys.
- An attrition rate of 35% or less will be maintained for students completing NTR* 103 – Nutrition Therapy I.
- Eighty percent of students will evaluate each nutrition course with an overall minimum rating of good or better.
- Program faculty will maintain their Registered Dietitian status and professional portfolio/continuing education credits while employed by Gateway Community College.
- Students will attend a minimum of 8 hours at professional meetings offering continuing education units.

Admissions Procedure

All students must first apply to and be accepted by the College. Unless waived, all applicants must take placement tests in reading, English, and mathematics. Students in this program are responsible for expenses for uniforms, physical examinations, CPR, travel to field sites, parking, and meals. Specific information about these costs and coverage for accident and liability insurance is available from the Program Coordinator, Marcia Doran. A complete physical examination is required before internship begins.

Graduation Requirements

In addition to the College's general requirements, this program requires a minimum grade of "C" in each and all science, math and program-specific courses. The student must also successfully complete all of the program competencies and must pass the National Restaurant Association Sanitation exam. The program coordinator reserves the right to recommend to the College the withdrawal of a student from the Nutrition and Dietetics program whose health, clinical performance, attendance, or conduct does not meet the program standards. For more information, contact the Program Coordinator, Marcia Doran, at (203) 285-2390 or e-mail mdoran@gatewayct.edu.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 115 or higher	Math for Science & Technology	3
Scientific Knowledge & Understanding	SK	CHE* 111	Concepts of Chemistry	4
Critical Analysis/Logical Thinking	CALT	NTR* 214	Nutrition Internship III	3
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - WC I	ENG* 101 Composition	3
HSP* 109	Food Safety Certification	1
Gen Ed - QR	MAT* 115 Math for Science & Technology (or higher)	3
NTR* 101	Introduction to Dietetics	3
NTR* 102	Nutrition I	3
NTR* 120	Foods	3
	Total Semester Credit Hours	16

Second Semester

Course #	Title	Credits
BIO* 115	Human Biology	4
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
NTR* 103	Nutrition Therapy I	3
NTR* 105	Food Management Systems	3
	Total Semester Credit Hours	16

Summer Session

Course #	Title	Credits
NTR* 210	Nutrition Internship I	3
	Total Semester Credit Hours	3

Third Semester

Course #	Title	Credits
Gen Ed - SR	CHE* 111 Concepts of Chemistry	4
NTR* 104	Life Cycle Nutrition	3
NTR* 201	Community Nutrition Education	3
NTR* 212	Nutrition Internship II	3
	Total Semester Credit Hours	13

Fourth Semester

Course #	Title	Credits
NTR* 202	Nutrition Therapy II	3
NTR* 205	Management in Dietetics	3
Gen Ed - CALT	NTR* 214 Nutrition Internship III	3
Gen Ed - SP	Choose one course in Social Phenomena	3
	Total Semester Credit Hours	12
	Total Credit Hours	60

DIAGNOSTIC IMAGING AND THERAPY PROGRAMS

The field of Diagnostic Imaging and Therapy includes some of the most rapidly advancing careers in modern medicine. Gateway Community College responds to this by offering programs in four areas of diagnostic imaging and therapy. The Radiography and Radiation Therapy Programs are accredited by the Board of Governors for Higher Education and the Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182, (312) 704-5300, (www.mail@jrcert.org). The Nuclear Medicine Technology Program is accredited by the Board of Governors for Higher Education and the Joint Review Committee on Educational Programs in Nuclear Medicine Technology, 2000 W. Danforth Road, Suite 130, #203, Edmond, OK 73003; (405) 285-0546.

Diagnostic Imaging and Therapy refers to four disciplines:

Diagnostic Medical Sonography: Diagnostic Medical Sonographers use highly sophisticated equipment that uses high frequency sound waves to produce images necessary to assist the physician in the diagnosis and treatment of diseases.

Nuclear Medicine: Nuclear Medicine technologists administer radiopharmaceuticals, acquire and process images using a gamma or PET camera and computer system to assist physicians in the diagnosis and treatment of disease.

Radiation Therapy: Radiation Therapists use highly sophisticated equipment to administer therapeutic doses of ionizing radiation, as prescribed by the physician, for the treatment of disease, primarily cancer.

Radiography: Radiographers are primarily responsible for administering ionizing radiation to the patient and producing images necessary to assist the physician in the diagnosis and treatment of disease or injury.

The courses in the Diagnostic Imaging and Therapy curricula are designed to build sequentially upon the knowledge learned in previous courses. Therefore, all required courses must be taken in sequence, and all prerequisites must be met prior to registration. Each program consists of a didactic component taught at the College and clinical laboratory experiences at one or more of the affiliated hospitals. To be eligible for graduation, students must successfully complete both components.

Admission Requirements

Refer to the Diagnostic Imaging and Therapy Program Information Packet that can be found on the Gateway Community College website, www.gatewayct.edu.

Transfer Credits

Program specific transfer credits from outside institutions will not be accepted.

Graduation Requirements

In addition to the College's general requirements, the programs require a minimum grade of "C" in each and all mathematics, science, pre-requisite, and program-specific courses. In addition, students are required to pass all clinical practicums and internships with a grade of "P." Students must also successfully complete all of the program's published clinical competencies. Graduates are eligible to apply for admission to the National certification examination in Radiologic Technology, Nuclear Medicine Technology or Sonography administered by the American Registry of Radiologic Technology, Nuclear Medicine Technology Certification Board and/or the American Registry for Diagnostic Medical Sonography.

For more information on the Diagnostic Imaging and Therapy programs, contact the Enrollment Services Assistant, Mary Beth Banks at (203) 285-2388 or e-mail at (mbanks@gatewayct.edu).

Note: Non-traditional students who did not complete high school but earned a GED may be evaluated based on GED math and science scores and/or prior college credits.

Miscellaneous Information

BASIC LIFE SUPPORT (BLS) CERTIFICATION

Students are required to provide documentation of current professional level certification in Basic Life Support for adult, child, and infant. Certification can only be earned through the American Heart Association or the American Red Cross and must remain current throughout the Program. Courses meeting this requirement are: The American Heart Association Basic Life Support (BLS) for Healthcare Providers **OR** The American Red Cross CPR/AED for the Professional Rescuer. Failure to comply will result in exclusion from the clinical learning experience.

CLINICAL SITES

Clinical learning experiences are planned as an integral part of the Diagnostic Imaging and Therapy courses and are held at a variety of healthcare settings. Students are responsible for arranging their own transportation and parking fees at the clinical sites. Clinical experiences may be assigned during daytime and evening hours. Assignment of clinical sites is at the discretion of the faculty. Clinical sites may require a mandatory parking fee.

CRIMINAL BACKGROUND CHECKS

Many clinical sites are now requiring that criminal background checks, and/or toxicology screening (for drugs and alcohol) be completed on any students who will be attending a clinical rotation at those facilities. Students must follow instructions for obtaining a background and/or toxicology screening at college of attendance. Students who are found guilty of having committed a felony/misdemeanor and/or are found to have a positive toxicology screen may be prevented from participating in clinical experiences. Results of student background checks and toxicology screening do not become a part of the student's educational records, as defined by the Family Educational Rights and Privacy Act (FERPA). If you cannot participate in a clinical rotation at an assigned facility, you will not be able to complete the objectives of the course and of the program. Specific situations are reviewed by college personnel.

FELONY CONVICTION

The ARRT, NMTCB, and ARDMS investigate all potential violations to determine eligibility for certification. For further information, please visit the websites--www.arrt.org, www.nmtcb.org, or www.ardms.org.

HEALTH REQUIREMENTS

1. Accepted Diagnostic Imaging and Therapy students must be seen by their primary care physician and cleared to participate in Diagnostic Imaging and Therapy courses with no restrictions.
2. Health Assessment Form and Immunization records must be submitted electronically by the student to the Health Form Tracking Services system.

Immunization Requirements - students will receive a packet of information describing current college policies.

Diagnostic Imaging and Therapy Health Assessment Form - completed forms (which document specific requirements for the Diagnostic Imaging and Therapy programs) must be on file in accordance with college policy.

TECHNICAL STANDARDS

The Diagnostic Imaging and Therapy students must be able to apply the knowledge and skills necessary to function in a broad variety of clinical situations. Technical standards reflect reasonable performance expectations of the Diagnostic Imaging and Therapy students for the performance of common functions of the registered technologist. These requirements address capabilities in the areas of motor, sensory, communication, behavior and critical thinking abilities. **The technical standards** can be found at www.gatewayct.edu.

ARRTS PROGRAM

This program results in an Associate of Science Degree for hospital-based graduates in the areas of Diagnostic Medical Sonography, Nuclear Medicine Technology, Radiation Therapy, and Radiography. Gateway Community College offers an innovative program for hospital-trained Radiologic Technologist professionals who wish to acquire their Associate of Science Degree. Gateway will grant credit to those applicants who are graduates of a two-year accredited hospital-based (certificate) program and hold certification by the American Registry of Radiologic Technology. Certification areas include: Diagnostic Medical Sonography, Nuclear Medicine, Radiation Therapy, and Radiography, ARDMS, ARRT (N), (T), (R), (D), (S), NMTCB.

Upon verification of transcripts and current documentation of ARRT certification, applicants will be awarded up to 34 credits for courses in Diagnostic Medical Sonography, Nuclear Medicine, Radiation Therapy, or Radiography. Individuals accepted into this program need only complete program pre-requisite courses and any general education courses required for the associate degree. Degree credit will also be granted for credit courses completed at other accredited collegiate institutions.

DIAGNOSTIC MEDICAL SONOGRAPHY

Associate in Science

The Associate Degree program in Diagnostic Medical Sonography prepares students for employment as an entry-level sonographer in hospitals, clinics, private offices and other facilities where Diagnostic Medical Sonography Imaging is available. The program requires approximately twenty-four months of full-time study. The program is sequential and includes didactic and supervised clinical education for all students. Students are assigned to a variety of clinical practicums while in the program. Students are required to attend all orientation sessions and classes scheduled in the summer .

A description of admissions requirements are available from the Allied Health Division and online at GatewayCT.edu. The associate degree program in Diagnostic Medical Sonography (DMS) provides individuals with the academic and technical skills to perform abdominal, obstetrical, small parts, gynecological, and vascular sonography procedures. Upon completion of the program students will be eligible to apply to take the national registry examination from the American Registry of Radiologic Technologists, and/ or the American Registry of Diagnostic Medical Sonographers (ARDMS). For more information, contact Mary Beth Banks at (203) 285-2388 or e-mail mbanks@gatewayct.edu or the Program Coordinator, Cara Case at (203) 285-2383 or e-mail at ccase@gatewayct.edu

The following pre-requisites must be completed with a grade of C or higher before applying to the Program: BIO *211, BIO* 212 (within five years prior of application date), PHY* 111, MAT*175, and ENG*101.

DIAGNOSTIC MEDICAL SONOGRAPHY MISSION STATEMENT

The Diagnostic Medical Sonography program at Gateway Community College is committed to educating and preparing competent entry level sonographers who can provide high quality imaging and patient care to members of the community. Furthermore, the program is dedicated to providing tools to support lifelong learning.

The minimum expectations of the DMS program, as defined by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), are "To prepare competent entry-level general sonographers and vascular technologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains." ([https://www.caahep.org/documents/file/For-Program-Directors/DMSStandards\(1\).pdf](https://www.caahep.org/documents/file/For-Program-Directors/DMSStandards(1).pdf))

DIAGNOSTIC MEDICAL SONOGRAPHY ACCREDITATION EXPECTATIONS

The minimum expectations of the DMS program, as defined by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), are "To prepare competent entry-level general sonographers and vascular technologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains." ([https://www.caahep.org/documents/file/For-Program-Directors/DMSStandards\(1\).pdf](https://www.caahep.org/documents/file/For-Program-Directors/DMSStandards(1).pdf))

DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM GOALS AND OUTCOMES

1. Students will demonstrate skills in effective oral and written communication
 - a. Students will apply effective verbal communication skills with classmates, instructors, patients, sonographers, and physicians.
 - b. Students will utilize effective written communication skills with instructors, sonographers, and physicians.
 - c. Students will demonstrate professional and respectful behavior in all interactions.
2. Students will demonstrate skills in critical thinking and problem solving principles and practices of sonography
 - a. Students will evaluate and assess patient requisition in order to perform proper sonographic procedures.
 - b. Students will examine the sonographic and Doppler appearances of iatrogenic, degenerative, inflammatory, traumatic, neoplastic, infectious, obstructive, congenital, metabolic, and immunologic disease practices
 - c. Students will analyze the relationships between various disease processes and hemodynamic states
 - d. Students will explore the various imaging and testing modalities
 - e. Students will examine the effects of pharmacology on disease processes and on sonographic findings
3. Students will demonstrate clinical competence in the practice of sonography
 - a. Student will demonstrate exceptional patient care skills.
 - b. Students will provide a safe environment for patients.
 - c. Students will detect normal anatomy and pathology on sonographic images.
 - d. Students will adhere to the ALARA principle.
4. The program will prepare competent entry-level sonographers.
 - a. Students will maintain high values congruent with the Professional Code of Conduct and the Scope of Practice while adhering to national, institutional and/or departmental standards, and procedures regarding imaging and patient care.
5. Students will achieve personal and professional growth.
 - a. Students will analyze professional publications
 - b. Students will utilize professional web sites.

DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates will be able to:

- Competently perform entry level sonography exams and tasks
- Evaluate patients and perform quality patient care
- Competently perform entry level sonography exams and tasks
- Evaluate patients and perform quality patient care
- Maintain professional ethics and behaviors as described by the SDMS scope of practice and clinical standards for the Diagnostic Medical Sonographer
- Meet the criteria to apply for certification with the American Registry of Radiologic Technologist (ARRT) and/or the American Registry of Diagnostic Medical Sonographer (ARDMS)
- Be didactically prepared to apply to the American Registry of Diagnostic Medical Sonographers for candidacy to the physics, abdomen/small parts OB/GYN, and vascular examinations.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 175	College Algebra and Trigonometry	3
Scientific Knowledge & Understanding	SK	PHY* 111	Physics for the Life Sciences	4
Critical Analysis/Logical Thinking	CALT	DMS* 223	Clinical Practicum III	3
Scientific Reasoning	SR	BIO* 211	Anatomy & Physiology I	4
Total General Education				23

PRE-REQUISITES PRIOR TO ADMISSION INTO THE PROGRAM:

(All must be completed with a grade of C or better)

Course #	Title	Credits
BIO* 211	Anatomy & Physiology I	4
BIO* 212	Anatomy & Physiology II	4
ENG* 101	Composition	3
MAT* 175	College Algebra & Trigonometry	3
PHY* 111	Physics for the Life Sciences	4

PROGRAM REQUIREMENTS

Summer Session I

Course #	Title	Credits
DMS* 100	Principles of Sonography	4
	Total Semester Credit Hours	4

First Semester - (Practicum at affiliates Tuesday and Thursday)

Course #	Title	Credits
DMS* 120	Abdomen/Small Parts Sonography I	3
DMS* 121	Obstetrics and Gynecology Sonography I	3
DMS* 122	Clinical Practicum I	2
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	11

Second Semester - (Practicum at affiliates Tuesday and Thursday)

Course #	Title	Credits
DMS* 123	Vascular Sonography I	3
DMS* 124	Sonographic Physics & Instrumentation	4
DMS* 125	Clinical Practicum II	2
Gen Ed - SP	PSY* 111 General Psychology I	3
	Total Semester Credit Hours	12

Summer Session II Clinical Internship I - (40 hrs./week at affiliates)

Course #	Title	Credits
DMS* 220	Clinical Internship I	4
	Total Semester Credit Hours	4

Third Semester - (Practicum at affiliates Monday, Wednesday, Friday)

Course #	Title	Credits
DMS* 221	Abdomen/Small Parts Sonography II	3
DMS* 222	Vascular Sonography II	3
DMS* 223	Clinical Practicum III	3
	Total Semester Credit Hours	9

Winter Intersession - Clinical Internship I - (40 hrs./week at affiliates)

Course #	Title	Credits
DMS* 224	Clinical Internship II	1
	Total Semester Credit Hours	1

Fourth Semester - (Practicum at affiliates Monday, Wednesday, Friday)

Course #	Title	Credits
DMS* 225	Obstetrics & Gynecology Sonography II	3
DMS* 226	Advanced Sonography Seminar	3
DMS* 227	Clinical Practicum IV	3
	Total Semester Credit Hours	9
	Total Credit Hours	68

NUCLEAR MEDICINE TECHNOLOGY

Associate in Science

The Associate in Science degree and certificate programs in Nuclear Medicine Technology prepare students for employment as nuclear medicine technologists in hospitals, medical offices, or ambulatory clinics. Upon completion of the program, the student may apply to take the certifying board examinations administered by the American Registry of Radiologic Technology (Nuclear Medicine) and the Nuclear Medicine Technology Certification Board (NMTCB).

The program requires approximately twenty-two (22) months of clinical and academic course work. The curriculum includes appropriate didactic content and ample supervised clinical education to assure sufficient opportunity to achieve all didactic and clinical requirements. Students are assigned to a clinical practicum at Yale-New Haven Hospital, Yale New Haven Hospital St. Raphael Campus, the Veterans Affairs Connecticut Health Care System (West Haven), Middlesex Hospital (Middletown), Griffin Hospital (Derby), Cardinal Health Nuclear Pharmacy Services (East Hartford), Midstate Medical Center (Meriden), Waterbury Hospital, Milford Hospital, William W. Backus Hospital (Norwich), Lawrence & Memorial Hospital (New London), Saint Francis Hospital and Medical Center (Hartford), and UCONN Medical Center (Farmington). Simulated labs are held in the Nuclear Medicine lab at the Gateway campus and are scheduled on lecture days. Students are required to attend all orientation sessions scheduled in the summer in order to begin the program in the fall semester. For more information, call the Enrollment Services Assistant, Mary Beth Banks at (203) 285-2388 or e-mail at (MBanks@gatewayct.edu) or the Program Coordinator, AnnMarie Alcala at (203) 285-2381 or e-mail at aalcala@gatewayct.edu. Please see the Radiologic Technology Programs webpage for more information about the admissions process.

NUCLEAR MEDICINE TECHNOLOGY MISSION STATEMENT

The mission of the Gateway Community College Nuclear Medicine Technology program is to achieve and exceed established educational and healthcare standards by continually providing students and the professional community with educational opportunities that reflect the current practice of nuclear medicine technology and results in high quality patient care.

NUCLEAR MEDICINE TECHNOLOGY PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates will:

- Be eligible to take the Nuclear Medicine Technology Exams offered by the American Registry of Radiologic Technologists (ARRT-N) and/or the Nuclear Medicine Technology Certification Board
- Possess the skills necessary to fulfill the responsibilities of an entry-level staff technologist.

The major categories of the nuclear medicine technologist's scope of practice include, but are not limited to, the following areas (as defined in the "Scope of Practice for the Nuclear Medicine Technologist 2012", SNMMI Technologist Section: www.snmmi.org):

Patient Care: Requires the exercise of judgment to assess and respond to the patient's needs prior to, during, and after procedures in the nuclear medicine department, and in patient medication reconciliation. This includes record-keeping in accordance with the HIPAA.

Quality Control: Requires the evaluation and maintenance of a quality control program for all instrumentation to ensure its proper performance and stability.

Diagnostic Procedures: Requires the utilization of appropriate techniques, and administration of non-radiopharmaceutical agents when part of standard procedures, to ensure quality diagnostic images and/or laboratory results.

Radiopharmaceuticals: Involves the procurement, preparation, quality control, dispensing, dose calculation, identification, documentation, administration, disposal, storage, and safe handling of radioactive materials.

Adjunctive Medications: Involves the identification, preparation, calculation, documentation, administration and monitoring of adjunctive medication(s) used during an in-vitro, diagnostic imaging, or therapeutic procedure. Also included are the preparation and administration of oral and IV contrast used in the performance of imaging studies.

In-Vitro Diagnostic Testing: Involves the acquisition of biological specimens with or without oral, intramuscular, intravenous, inhaled or other administration or radiopharmaceuticals and adjunctive medications for the assessment of physiologic function.

Operation of Instrumentation: Involves the operation of imaging instrumentation:

Gamma camera and PET imaging systems with or without sealed sources or radioactive materials or x-ray tubes for attenuation correction, transmission imaging, diagnostic CT (when appropriately educated, trained and/or credentialed); PET imaging systems with or without sealed sources of radioactive materials or x-ray tubes for attenuation correction, transmission imaging, diagnostic CT or MR imaging (when appropriately trained and/or credentialed); Bone density imaging systems with x-ray tubes; and Non-imaging instrumentation.

Transmission Imaging: Involves, but is not limited to, the operation of gamma cameras with sealed sources of radioactive material for transmission imaging with single photon emission computed tomography (SPECT) or positron emission tomography (PET) and operation of cameras with x-ray tubes for transmission imaging when performed as part of SPECT/CT or PET/CT. Additionally includes diagnostic CT when performed on SPECT/CT or PET/CT cameras, including the administration of oral and intravenous contrast (requires education in CT) and the operation of scanners with x-ray tubes for the measurement of bone density.

Radionuclide Therapy: Involves patient management, preparation and administration of therapeutic radiopharmaceuticals, under the personal supervision of the Authorized User.

Radiation Safety: Involves, but is not limited to, educating the public while practicing techniques that will minimize radiation exposure to the patient, general public, and health care personnel, through consistent use of protective devices, shields, monitors, and other devices consistent with ALARA (as low as reasonably achievable), as well as decontaminating spills and unplanned releases of radiation.”

SUGGESTED COURSE SEQUENCE

Freshman Year - (NOTE: **Required** orientation sessions will be scheduled during the summer before entry into the program.)

First Semester - (Practicum at affiliates Tuesday and Thursday)

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 172	College Algebra	3
Scientific Knowledge & Understanding	SK	PHY* 111	Physics for the Life Sciences	4
Critical Analysis/Logical Thinking	CALT	NMT* 223	Nuclear Medicine Seminar	3
Scientific Reasoning	SR	CHE* 111	Concepts of Chemistry	4
Total General Education				23

First Semester - (Practicum at affiliates Tuesday and Thursday)

Course #	Title	Credits
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 172 College Algebra	3
Gen Ed - SK	PHY* 111 Physics for Life Sciences	4
NMT* 101	Introduction to Nuclear Medicine	3
NMT* 102	Nuclear Medicine Procedures I	3
NMT* 111	Clinical Practicum I	1
	Total Semester Credit Hours	17

Winter Intersession – (Practicum at affiliates Monday through Friday, 40 hrs./week)

Course #	Title	Credits
NMT* 113	Clinical Internship I	.5
	Total Semester Credit Hours	.5

Second Semester - (Practicum at affiliates Tuesday and Thursday)

Course #	Title	Credits
Gen Ed - SR	CHE* 111 Concepts of Chemistry	4
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
NMT* 112	Clinical Practicum II	1
NMT* 121	Physics in Nuclear Medicine	3
NMT* 201	Nuclear Medicine Procedures II	3
	Total Semester Credit Hours	14

Summer Session - (Practicum at affiliates Monday through Friday, May through August)
(40 hrs./week at clinical affiliates)

Course #	Title	Credits
NMT* 126	Clinical Internship II	3
	Total Semester Credit Hours	3

Third Semester - (Practicum at affiliates Monday, Wednesday, and Friday)

Course #	Title	Credits
Gen Ed - SP	PSY* 111 General Psychology I	3
NMT* 202	Nuclear Medicine Instrumentation	3
NMT* 203	Radiopharmacy	3
NMT* 211	Clinical Practicum III	2
RST* 200	Cross Sectional Anatomy	3
	Total Semester Credit Hours	14

Winter Intersession - (Practicum at affiliates Monday through Friday 40 hrs./week)

Course #	Title	Credits
NMT* 216	Clinical Internship III	.5
	Total Semester Credit Hours	.5

Fourth Semester - (Practicum at affiliates Monday, Wednesday, and Friday)

Course #	Title	Credits
NMT* 212	Clinical Practicum IV	2
NMT* 221	Nuclear Medicine Procedures III	3
NMT* 222	Intro. to Computers and Nuclear Medicine Appls.	3
Gen Ed - CALT	NMT* 223 Nuclear Medicine Seminar	3
	Total Semester Credit Hours	11
	Total Credit Hours	60

Total Clinical Practicum at the affiliates, (includes Clinical Internships I, II and III), is approximately 1,800 hours

NUCLEAR MEDICINE TECHNOLOGY

Certificate

The certificate program in Nuclear Medicine Technology is designed to prepare students for employment as nuclear medicine technologists in hospitals, medical offices, or ambulatory clinics. Upon completion of the program, the student may apply to take the certifying board examinations administered by the American Registry of Radiologic Technology (Nuclear Medicine) and the Nuclear Medicine Technology Certification Board (NMTCB). The program requires approximately twenty-two (22) months of clinical and academic coursework. The structure of the curriculum includes appropriate didactic content and ample supervised clinical education to assure sufficient opportunity to achieve all didactic and clinical requirements.

Students are assigned to a clinical practicum at Yale-New Haven Hospital, Yale New Haven Hospital St. Raphael Campus, the Veterans Affairs Connecticut Health Care System (West Haven), Middlesex Hospital (Middletown), Griffin Hospital (Derby), Cardinal Health Nuclear Pharmacy Services (East Hartford), Midstate Medical Center (Meriden), Waterbury Hospital, Milford Hospital, William W. Backus Hospital (Norwich), Lawrence & Memorial Hospital (New London), Saint Francis Hospital and Medical Center (Hartford), and UCONN Medical Center (Farmington). Simulated labs are held in the Nuclear Medicine lab at the Gateway campus and are scheduled on lecture days. Students are required to attend all orientation sessions scheduled in the summer in order to begin the program in the fall semester.

For more information, call the Enrollment Services Assistant, Mary Beth Banks at (203) 285-2388 or e-mail at (MBanks@gatewayct.edu) or the Program Coordinator, Beata Gebuza, at (203) 285-2381 or e-mail at (bgebuza@gatewayct.edu).

Prerequisites

Certificate program applicants must possess all of the following prerequisites:

- A. An associate degree in one of the following modalities:

- Radiography
- Radiation Therapy
- Diagnostic Medical Sonography

The following policy may apply to applicants who do not possess an associate degree:

Gateway Community College will grant credit to those applicants who are graduates of a two-year accredited hospital (certificate) based program and hold certification by the American Registry of Radiologic Technologists. Certification areas include: Radiography, Nuclear Medicine, Diagnostic Medical Sonography, and Radiation Therapy. (see ARRTS program)

- B. Current and active credentials by one of the following certifying boards:

- American Registry of Radiologic Technologists-Radiography (RTR)
- American Registry of Radiologic Technologists-Radiation Therapy (RTT)
- American Registry of Diagnostic Medical Sonographers (RDMS)

- C. The applicant must have completed the following courses with a “C” or better in their A.S. Degree program to be eligible for the NMT Certificate Program: Concepts of Chemistry (CHE* 111); College Algebra (MAT* 172); Physics for the Life Sciences (PHY* 111); human anatomy and physiology with lab; medical terminology content; two courses in written communication and social science elective.

Please see the Diagnostic Imaging and Therapy programs’ webpage for more information about the admissions process.

PROGRAM OUTCOMES

Program outcomes for Nuclear Medicine Technology Certificate Program are the same as for Nuclear Medicine Technology Associate in Science Degree (see degree outcomes).

PROGRAM REQUIREMENTS

Program requirements will be changing for the year 2017. For more information, please contact Mary Beth Banks, Allied Health & Nursing Enrollment Services Assistant, at (203) 285-2388 or mbanks@gatewayct.edu.

First Semester - (Practicum at affiliates Tuesday and Thursday)

Course #	Title	Credits
NMT* 102	Nuclear Medicine Procedures I	3
NMT* 111	Clinical Practicum I	1
	Total Semester Credit Hours	4

Second Semester – (Practicum at affiliates Tuesday and Thursday)

Course #	Title	Credits
NMT* 112	Clinical Practicum II	1
NMT* 121	Physics in Nuclear Medicine	3
NMT* 201	Nuclear Medicine Procedures II	3
	Total Semester Credit Hours	7

Summer Session (Practicum at affiliates Monday through Friday, May through July")
(40 hrs./week at clinical affiliates)

Course #	Title	Credits
NMT* 126	Clinical Internship II	3
	Total Semester Credit Hours	3

Third Semester - (Practicum at affiliates Monday, Wednesday, and Friday)

Course #	Title	Credits
NMT* 202	Nuclear Medicine Instrumentation	3
NMT* 203	Radiopharmacy	3
NMT* 211	Clinical Practicum III	2
RST* 200	Cross Sectional Anatomy	3
	Total Semester Credit Hours	11

Winter Intersession (Practicum at affiliates Monday through Friday, 40 hrs./week)

Course #	Title	Credits
NMT* 216	Clinical Internship III	.5
	Total Semester Credit Hours	.5

Fourth Semester - (Practicum at affiliates Monday, Wednesday, and Friday)

Course #	Title	Credits
NMT* 212	Clinical Practicum IV	2
NMT* 221	Nuclear Medicine Procedures III	3
NMT* 222	Intro. to Computers and Nuclear Medicine Appls.	3
NMT* 223	Nuclear Medicine Seminar	3
	Total Semester Credit Hours	11
	Total Credit Hours	36.5

RADIATION THERAPY

Associate in Science

A Radiation Therapist delivers radiation treatment as prescribed by a physician for the treatment of disease, primarily cancer. The Radiation Therapist will monitor patients' physical condition and response to treatment. The associate degree program in radiation therapy is based on twenty-two (22) months of full time study. The curriculum prepared students for employment as entry-level Radiation Therapist in hospitals and cancer centers. Upon successful completion of the program, students are eligible to take the American Registry of Radiologic Technologists (ARRT) board examination (Radiation Therapy). For more information, call the Program Director Gina Finn, at (203) 285-2392 or e-mail at (gfinn@gatewayct.edu).

Program Curriculum:

The structure of the curriculum is such that courses are offered in sequence and progress in complexity. It offers appropriate didactic content and ample supervised clinical education to assure sufficient opportunity to achieve all didactic and clinical requirements established by the ARRT. Clinical education takes place in hospitals and cancer centers. Students will rotate through all clinical settings during the length of the Program. The following clinical sites are: Yale-New Haven Hospital Smilow Cancer Hospital, McGivney Cancer Care at Yale-New Haven Hospital Hamden Campus, Yale-New Haven Hospital Shoreline Medical Center Guilford, Danbury Hospital, Norma F. Pfriem Cancer Institute, Park Avenue Bridgeport Hospital, and Lawrence and Memorial Hospital. Transportation and parking are the student's responsibility. The following pre-requisites must be completed with a grade of C or higher before applying to the Program:

- * BIO*211, Anatomy & Physiology I
- * BIO*212, Anatomy & Physiology II
- * PHY* 111, Physics for the Life Sciences

The Program is accredited by the Board of Governors for Higher Education and the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182, (312)704-5300, www.jrcert.org.

RADIATION THERAPY PROGRAM MISSION STATEMENT:

The Radiation Therapy Program at Gateway Community College is committed to educating and preparing competent, entry-level therapists who provide high quality patient care to members of the community. Furthermore, the Program is dedicated to providing tools to support life-long learning.

RADIATION THERAPY PROGRAM GOALS

1. Graduates in the Gateway Community College Radiation Therapy Program will demonstrate skills in effective written and oral communication.
2. Graduates in the Gateway Community College Radiation Therapy Program will demonstrate skills in effective critical thinking and problem solving in the principles and practices of Radiation Therapy.
3. Graduates in the Gateway Community College Radiation Therapy Program will achieve personal and professional growth.
4. Graduates in the Gateway Community College Radiation Therapy Program will be clinically competent in the practice of Radiation Therapy.
5. The Program will prepare graduates to be entry-level Radiation Therapists.

RADIATION THERAPY PROGRAM OUTCOMES

Upon successful completion of all Program requirements, the graduate should be able to:

- Evaluate and assess treatment delivery components.
- Provide radiation therapy treatment delivery services to cure or improve the quality of life of patients by accurately delivering a prescribed course of treatment.
- Evaluate and assess daily the physiological and psychological responsiveness of each patient to treatment delivery.
- Maintain values congruent with the professional code of ethics and scope of practice while adhering to national, institutional and/or departmental standards, policies and procedures regarding treatment delivery and patient care.
- Meet the criteria to apply for the American Registry of Radiologic Technologists (ARRT) certification exam

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 200	Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 175 or MAT* 186	College Algebra & Trigonometry or Precalculus	3 or 4
Scientific Knowledge & Understanding	SK	BIO* 211	Anatomy & Physiology I	4
Critical Analysis/Logical Thinking	CALT	RDT* 126	Clinical Internship II	3
Scientific Reasoning	SR	PHY* 111	Physics for Life Sciences	4
Total General Education				23

First Semester - (NOTE: **Required** orientation sessions will be scheduled during the summer before entry into the program.) (Practicum at affiliates Tuesday and Thursday)

Course #	Title	Credits
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 175 College Algebra & Trigonometry or MAT* 186 Precalculus	3 - 4
RDT* 101	Introduction to Radiation Therapy I	3
RDT* 111	Clinical Practicum I	1
RST* 200	Cross Sectional Anatomy	3
	Total Semester Credit Hours	13 - 14

Winter Intersession - (40 hrs./week at clinical affiliates)

Course #	Title	Credits
RDT* 113	Clinical Internship I	1
	Total Semester Credit Hours	1

Second Semester - (Clinical Practicum at hospital Tuesday and Thursday)

Course #	Title	Credits
Gen Ed - WC II	ENG* 200 Advanced Composition	3
Gen Ed - SP	PSY* 111 General Psychology I	3
RDT* 102	Radiation Therapy II	3
RDT* 112	Clinical Practicum II	1
RST* 213	Radiation Physics	3
	Total Semester Credit Hours	13

Summer Session - (40 hrs./week at clinical affiliates Monday through Friday, May through August)

Course #	Title	Credits
Gen Ed - CALT	RDT* 126 Clinical Internship II	3
	Total Semester Credit Hours	3

Third Semester - (Practicum at affiliates Monday, Wednesday, and Friday)

Course #	Title	Credits
RDT* 201	Radiation Oncology I	3
RDT* 202	Radiation Therapy III	3
RDT* 205	Dosimetry and Computer Asst. Treatment Planning	3
RDT* 211	Clinical Practicum III	2
	Total Semester Credit Hours	11

Winter Intersession: (40 hrs./week at affiliates Monday through Friday)

Course #	Title	Credits
RDT* 218	Clinical Internship III	1
	Total Semester Credit Hours	1

Fourth Semester - (Practicum at affiliates Monday, Wednesday, and Friday)

Course #	Title	Credits
RDT* 203	Radiation Oncology II	3
RDT* 204	Radiation Therapy IV	3
RDT* 212	Clinical Practicum IV	2
RDT* 222	Radiobiology and Protection	3
RDT* 223	Radiation Physics II	3
RDT* 224	Radiation Therapy Senior Seminar	2
	Total Semester Credit Hours	16
	Total Credit Hours (including pre-requisites)	58-59

Total practicum at the clinical affiliates, including Clinical Internships I, II, and III, is approximately 2,000 hours.

RADIOGRAPHY

Associate in Science

The Associate Degree program in Radiography prepares students for employment as entry-level radiographers in hospitals, outpatient facilities, medical offices, community health agencies, or industrial concerns where radiation is used for quality control. Upon completion of the program, the student may apply to take the certifying board examination administered by the American Registry of Radiologic Technology (Radiography).

The program requires approximately twenty (20) months of full-time study. The structure of the curriculum is sequential and includes appropriate didactic content and ample supervised clinical education to assure sufficient opportunity to achieve all didactic and clinical requirements. Students are assigned to a clinical practicum at the following education sites:

Griffin Hospital	Division Street	Derby
Griffin Imaging & Diagnostics Center	Ivy Brook Road	Shelton
Yale New Haven Health System		
Bridgeport Hospital	Grant Street	Bridgeport
New Haven-Pediatric Specialty Center	Long Wharf Drive	New Haven
Yale New Haven Health Outpatient Radiology	Main Street	Stratford
Yale New Haven Health Park Avenue Medical Center	Park Avenue	Trumbull
Yale New Haven Hospital	York Street	New Haven
Yale New Haven Hospital Spine Center	Long Wharf Drive	New Haven
Yale New Haven Hospital - St. Raphael's Campus	Chapel Street	New Haven
Yale Orthopaedics of Guilford	Boston Post Road	Guilford
Yale Orthopaedics of Milford	Wellington Road	Milford
VA New England Health Care System West Haven Campus	Campbell Avenue	West Haven

Students are required to attend all orientation sessions scheduled in the summer in order to begin the program in the fall semester. For more information, call the Enrollment Services Assistant, Mary Beth Banks at (203) 285-2388 or e-mail at mbanks@gatewayct.edu) or the Program Coordinator, Julie Austin, at (203) 285-2382 or e-mail at (jaustin@gatewayct.edu). Please see the Diagnostic Imaging and Therapy Programs webpage for more information about the admissions process.

The following pre-requisites must be completed with a grade of C or higher before applying to the Program:

- BIO* 211 Anatomy & Physiology I
- BIO* 212 Anatomy & Physiology II (within five years prior of application date)

The program is accredited by the Board of Governors for Higher Education and the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182, (312) 704-5300, www.jrcert.org.

RADIOGRAPHY PROGRAM MISSION STATEMENT

The Radiography program at Gateway Community College is committed to educating and preparing competent, entry-level technologists who can provide high quality imaging and patient care to members of the community. Furthermore, the program is dedicated to providing tools to support life-long learning.

RADIOGRAPHY PROGRAM GOALS

1. Students will demonstrate skills in effective oral and written communication
2. Students will demonstrate skills in critical thinking and problem solving in the principles and practices of Radiography
3. Students will demonstrate clinical competence in the practice of Radiography
4. The Program will prepare competent entry-level technologists
5. Students will achieve personal and professional growth

RADIOGRAPHY PROGRAM OUTCOMES

Upon successful completion of all program requirements, the graduate should be able to:

- Competently perform procedures and tasks necessary to fulfill the responsibilities of an entry-level staff technologist
- Consistently apply the principles of radiation safety and protection for patient, self and others
- Evaluate and assess patients to ensure quality patient care and accurate performance of exams
- Maintain values congruent with the professional code of ethics and scope of practice while adhering to national, institutional and/or departmental standards, policies and procedures regarding imaging and patient care
- Meet the criteria to apply for the American Registry of Radiologic Technologists (ARRT) certification exam. Participate in professional organizations

PROGRAM FEES

Students are responsible for all fees associated with the following Program requirements:

Textbooks	\$800
Uniforms	\$200
Clinical Markers	\$30
Toxicology Screening	\$65
Background check	\$65
Trajecsys online clinical documentation system	\$150
Castle Branch online health management system	\$35
Pin for pinning ceremony	\$30
Transportation and associated costs	Variable
Health care immunizations and titers	Variable
BLS or CPR/AED	Variable

These fees are approximate and subject to change. If a student takes a leave of absence from the program, they will need to cover additional program fees as needed.

PROGRAM REQUIREMENTS

Freshman Year (*NOTE: **Required** orientation sessions will be scheduled during the summer before entry into the program.*)

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 172	College Algebra	3
Scientific Knowledge & Understanding	SK	BIO* 211	Anatomy & Physiology I	4
Critical Analysis/Logical Thinking	CALT	RAD* 206	Quality Assurance	3
Scientific Reasoning	SR	BIO* 212	Anatomy & Physiology II	4
Total General Education				23

First Semester (Clinical practicum held at clinical affiliates Tuesdays and Thursdays from 8:00 am - 3:00 pm or 3:00 pm - 10:00 pm as assigned)

Course #	Title	Credits
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 172 College Algebra	3
RAD* 104	Introduction to Radiography	3
RAD* 105	Radiographic Anatomy and Procedures I	3
RAD* 193	Clinical Practicum I	2
	Total Semester Credit Hours	14

Winter Intersession (40 hrs./week at clinical affiliates from 8:00 am - 3:00 pm or 3:00 pm to 10:00 pm as assigned)

Course #	Title	Credits
RAD* 187	Clinical Internship I	.5
	Total Semester Credit Hours	.5

(Clinical practicum held at clinical affiliates Tuesdays and Thursdays from 8:00 am - 3:00 pm or 3:00 pm - 10:00 pm as assigned)

Course #	Title	Credits
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
RAD* 116	Physics in Radiography	3
RAD* 194	Clinical Practicum II	2
RAD* 204	Radiographic Anatomy and Procedures II	3
	Total Semester Credit Hours	11

Summer Session (40 hrs./week at clinical affiliates from 8:00 am - 3:00 pm or 3:00 pm to 10:00 pm as assigned)

Course #	Title	Credits
RAD* 188	Clinical Internship II	4
	Total Semester Credit Hours	4

Third Semester (Clinical practicum held at clinical affiliates Mondays, Wednesdays and Fridays from 8:00 am - 3:00 pm or 3:00 pm - 10:00 pm as assigned)

Course #	Title	Credits
RAD* 196	Radiographic Anatomy and Procedures III	3
RAD* 203	Principles of Radiographic Exposure	3
RAD* 215	Radiographic Pathology	3
RAD* 222	Radiobiology and Protection	3
RAD* 291	Clinical Practicum III	3
	Total Semester Credit Hours	15

Winter Intersession (40 hrs./week at clinical affiliates from 8:00 am - 3:00 pm or 3:00 pm - 10:00 pm as assigned)

Course #	Title	Credits
RAD* 286	Clinical Internship III	.5
	Total Semester Credit Hours	.5

Fourth Semester (Clinical practicum held at assigned clinical affiliates Mondays, Wednesdays and Fridays from 8:00 am - 3:00 pm or 3:00 pm - 10:00 pm as assigned)

Course #	Title	Credits
RAD* 205	Computers in Medical Imaging: Adv. Practice	3
RAD* 206	Quality Assurance	3
RAD* 218	Senior Seminar	3
RAD* 292	Clinical Practicum IV	3
Gen Ed - SP	PSY* 111 General Psychology I	3
	Total Semester Credit Hours	15
	Total Credit Hours (including pre-requisites)	60

ART

STUDIO ART

Associate in Science

The Studio Art program provides a strong basic foundation in the visual arts along with a background in general education. Furthermore, it prepares students for continued study or for employment by enabling them to build a portfolio of artwork that exhibits their proficiency in Studio Art. For students seeking greater personal and creative fulfillment, this program also promotes art as an avocation. For more information, call Nicholas Halko at (203) 285-2241 or e-mail at (nhalko@gatewayct.edu).

STUDIO ART PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Demonstrate skills, techniques, and manipulation of tools and equipment necessary for studio or graphic arts as described in the course syllabi
- Demonstrate an understanding of art and design concepts and problem solving as described in the course syllabi
- Compile a portfolio of work reflecting knowledge, techniques, and creativity gained during a student's course of study
- Demonstrate an understanding of the process of creating a finished work of art or design concept
- Communicate and critique using specific art vocabulary

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in CALT	3
Aesthetic Dimension	AD	ART* 101	Art History I	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
ART* 109	Color Theory	3
ART* 111	Drawing I	3
ART* 121	Two-Dimensional Design	3
ART* 151	Painting I	3
Gen Ed - WC I	ENG* 101 Composition	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
ART* 112	Drawing II	3
ART* 152	Painting II	3
GRA* 149	Introduction to Adobe Creative Suite	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Ged Ed - SP	Choose one course in Social Phenomena	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
Gen Ed - AD	ART* 101 Art History I	3
ART* 131	Sculpture I	3
ART* 141	Photography I	3
Gen Ed - QR	MAT* 109 Quantitative Reasoning (or higher)	3
Elective	Restricted: Studio Art (see below)	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
ART* 102	Art History II	3
ART* 122	Three-Dimensional Design	3
Gen Ed - SK	Choose one course in Scientific Knowledge	3-4
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
Elective	Restricted: Studio Art (see below)	3
	Total Semester Credit Hours	15-16
	Total Credit Hours	60-61

Studio Art Restricted Electives: ART* 142, ART* 176, ART* 299

STUDIO ART: GRAPHIC DESIGN OPTION

Associate in Science

The Studio Art: Graphic Design Option program provides a strong basic foundation in the visual arts along with a background in general education. Furthermore, it prepares students for continued studies or employment by enabling them to build a portfolio of artwork that exhibits a degree of proficiency in graphic design. For students seeking greater personal and creative fulfillment, this program will also promote art as an avocation. For more information, call Nicholas Halko at (203) 285-2241 or e-mail at (nhalko@gatewayct.edu).

STUDIO ART: GRAPHIC DESIGN OPTION PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Demonstrate skills, techniques, and manipulation of tools and equipment necessary for studio or graphic arts as described in the course syllabi
- Demonstrate an understanding of art and design concepts and problem solving as stated in the course syllabi
- Compile a portfolio of work reflecting knowledge, techniques, and creativity gained during a student's course of study
- Demonstrate an understanding of the process of creating a finished work of art or design concept
- Communicate and critique using specific art vocabulary

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in CALT	3
Aesthetic Dimension	AD	ART* 101 or ART* 102	Art History I or Art History II	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
GRA* 149	Introduction to Adobe Creative Suite	3
GRA* 151	Graphic Design I	3
ART* 111	Drawing I	3
ART* 121	Two-Dimensional Design	3
Gen Ed - WC I	Composition	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
GRA* 252	Graphic Design II	3
ART* 151	Painting I	3
Elective	Graphic Design (Restricted)	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - SP	Choose one course in Social Phenomena	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
ART* 261	Web Design I	3
ART* 109	Color Theory	3
ART* 122	Three-Dimensional Design	3
ART* 141	Photography I	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
Elective	Graphic Design (Restricted)	3
ART* 131	Sculpture I	3
Gen Ed - AD	ART* 101 Art History I or ART* 102 Art History II	3
Ged Ed - SK	Choose one course in Scientific Knowledge	3-4
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
	Total Semester Credit Hours	15-16
	Total Credit Hours	60-61

Restricted Electives Graphic Design: ART* 112, 142, ART* 176, GRA* 231, GRA* 237, GRA* 241

WEB DESIGN

Certificate

The Web Design certificate can be used as a stepping stone to the Studio Art/Graphic Design Option degree program. It will prepare the student for transfer onto a Baccalaureate Degree Program at a four year institution. It can also be helpful in gaining employment or to further enhance current skills for those who are already employed. Web Design is becoming more and more necessary in small business and corporate settings and a skilled web designer must be in place to accommodate this need. For more information, call Nicholas Halko at (203) 285-2241 or e-mail at (nhalko@gatewayct.edu).

WEB DESIGN LEARNING OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Create industry-standard web publication
- Recognize typography standards for web publication
- Discern color functions optimized for web publication
- Analyze and structure XHTML code and CSS for web publication
- Recognize current standards for optimizing graphics for electronic distribution
- Utilize Adobe Illustrator and Photoshop to process graphics for web use

PROGRAM REQUIREMENTS

Course #	Title	Credits
GRA* 149	Introduction to Adobe Creative Suite	3
GRA* 151	Graphic Design I	3
GRA* 231	Digital Imaging (Photoshop)	3
GRA* 237	Computer Graphics (Adobe Illustrator)	3
GRA* 252	Graphic Design II	3
GRA* 261	Web Design I	3
	Total Credit Hours	18

AUTOMOTIVE

AUTOMOTIVE TECHNOLOGY

The Automotive Technology Department offers programs in the following areas:

- Comprehensive Automotive Repair and Service Degree (CARS)
- Comprehensive Automotive Repair and Service Certificate (CARS)
- General Motors ASEP Degree
- Honda PACT Degree
- Honda PACT Certificate

COMPREHENSIVE AUTOMOTIVE REPAIR AND SERVICE (CARS)

Associate in Applied Science Degree

The objective of the Comprehensive Automotive Repair and Service (CARS) Degree Program is to educate those seeking employment in the field of automotive technology. It will prepare students for entry-level employment as Automotive Technicians. The Automotive Technician field has been in very high demand in the State, and it is growing! The intent of the program is to meet the growing need for technicians in the college service area. This program furthers the college's mission to "respond to the changing academic, occupational, technological needs" by offering "a broad range of credit (technical, career, and academic) programs and courses leading to transfer, employment and lifelong learning." The automotive curriculum is designed to meet all NATEF requirements for national accreditation. For more information, contact Scott McFarland, Program Coordinator at (203) 285-2405 or e-mail at (smcfarland@gatewayct.edu).

CARS DEGREE PROGRAM OUTCOMES

Upon successful completion of all program requirements, the graduates should be able to:

- Meet all NATEF required outcomes for MAST certification
- Demonstrate workplace skills related to the occupation, including but not limited to resume preparation, seeking employment, maintaining a safe and healthy workplace environment, demonstrating workplace ethics, and teamwork
- Apply knowledge of theory and safety to accomplish certain tasks related to the occupation
- Identify and use appropriate tools, testing, and measurement equipment to accomplish certain tasks related to the occupation
- Use current reference and training materials from accepted industry publications and standards to accomplish specific tasks
- Demonstrate knowledge and understanding of all fundamental automotive concepts as outlined by NATEF

GENERAL EDUCATION REQUIREMENTS

TAP Competency	Code	Course #	Course(s) Required	Credits
Written Communication (1)	WC	ENG* 101	Composition	3
Written Communication (2)	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in CALT	3
Aesthetic Dimensions Historical Knowledge/Understanding Oral Communication Scientific Reasoning	AD HK OC SR		Choose one course in one of these areas: AD, HK, OC, SR	3
Total General Education				21-22

First Semester

Course #	Title	Credits
AUT* 132	Automotive Systems and Shop Practices	3
AUT* 136	Steering and Suspension Systems	3
AUT* 138	Braking Systems	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
AUT* 130	Power Plant	3
AUT* 134	Electrical Systems	3
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
Gen Ed	Choose one course in AD, HK, OC, SR	3
	Total Semester Credit Hours	12

Summer Semester

Course #	Title	Credits
AUT* 170	Practicum I	4

Third Semester

Course #	Title	Credits
AUT* 231	Engine Management Systems	3
AUT* 233	Manual Drivetrain Systems	3
AUT* 270	Practicum II	2
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - SP	Choose one course in Social Phenomena	3
	Total Semester Credit Hours	14

Fourth Semester

Course #	Title	Credits
AUT* 235	Automatic Drivetrain Systems	3
AUT* 237	Climate Control and Restraint Systems	3
AUT* 238	Advanced Electrical Diagnosis and Performance Tuning	3
AUT* 272	Practicum III	3
Gen Ed - SK	Choose one course in Scientific Knowledge	3-4
	Total Semester Credit Hours	15-16
	Total Credit Hours	60 - 61

COMPREHENSIVE AUTOMOTIVE REPAIR AND SERVICE (CARS)

Certificate

The objective of the Comprehensive Automotive Repair and Service (CARS) Certificate is to educate those seeking employment in the field of automotive technology. It will prepare students for entry-level employment as Automotive Technicians. The Automotive Technician field has been in very high demand in the State, and it is growing. The intent of the program is to meet the need for technicians in the college service area. This program furthers the college's mission to "respond to the changing academic, occupational, technological needs" by offering "a broad range of credit (technical and career) programs and courses leading to transfer, employment and lifelong learning." The automotive curriculum is designed to meet all NATEF requirements for national accreditation.

CARS CERTIFICATE PROGRAM OUTCOMES

Upon successful completion of all program requirements, the graduates should be able to:

- Meet all NATEF required outcomes for MAST certification
- Demonstrate workplace skills related to the occupation, including but not limited to resume preparation, seeking employment, maintaining a safe and healthy workplace environment, demonstrating workplace ethics, and teamwork
- Apply knowledge of theory and safety to accomplish certain tasks related to the occupation
- Identify and use appropriate tools, testing, and measurement equipment to accomplish certain tasks related to the occupation
- Use current reference and training materials from accepted industry publications and standards to accomplish specific tasks
- Demonstrate knowledge and understanding of all fundamental automotive concepts as outlined by NATEF

Each student accepted into the program must purchase or possess the tools required for the program, have a valid driver's license, and wear an automotive uniform while attending classes. For more information, call Scott McFarland at (203) 285-2405 or e-mail at (smcfarland@gatewayct.edu).

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
AUT* 132	Automotive Systems and Shop Practices	3
AUT* 136	Steering and Suspension Systems	3
AUT* 138	Braking Systems	3
AUT* 231	Engine Management Systems	3
AUT* 233	Manual Drivetrain Systems	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
AUT* 130	Power Plant	3
AUT* 134	Electrical Systems	3
AUT* 235	Automatic Drivetrain Systems	3
AUT* 237	Climate Control and Restraint Systems	3
AUT* 238	Advanced Electrical Diagnosis and Performance Tuning	3
AUT* 270 or AUT* 272	Practicum II or Practicum III	2 - 3
	Total Semester Credit Hours	17 - 18

Summer Semester

Course #	Title	Credits
AUT* 170	Practicum I	4
	Total Credit Hours	36-37

AUTOMOTIVE TECHNOLOGY - GENERAL MOTORS (GM)

GENERAL MOTORS - AUTOMOTIVE SERVICE EDUCATION PROGRAM (ASEP)

Associate in Applied Science

The Automotive Service Education Program (ASEP) was designed by General Motors and Gateway Community College. This unique, cooperative program educates students for a challenging career in a General Motors and AC Delco sponsored automotive repair facilities. Through a special arrangement, students attend classes and labs at the North Haven Campus and then work full-time at a sponsoring GM or AC Delco facility. Students in the ASEP program receive state-of-the-art instruction on General Motors' products. Vehicles, parts, engines, specialized tools, service information, and materials are provided by General Motors Corporation. The automotive curriculum is designed to meet all NATEF requirements for national accreditation. For more information, contact Daniel Fuller, Program Coordinator at (203) 285-2370 or e-mail at (dfuller@gatewayct.edu).

GENERAL MOTORS – ASEP PROGRAM OUTCOMES

Upon successful completion of all program requirements, the graduate will:

- Meet all NATEF required outcomes for MAST certification
- Demonstrate workplace skills related to the occupation, including but not limited to resume preparation, seeking employment, maintaining a safe and healthy workplace environment, demonstrating workplace ethics, and teamwork
- Apply knowledge of theory and safety to accomplish certain tasks related to the occupation
- Identify and use appropriate tools, testing, and measurement equipment to accomplish certain tasks related to the occupation
- Use current reference and training materials from accepted industry publications and standards to accomplish specific tasks
- Receive corporate credit for web based and embedded classroom / laboratory training in the GM Common Training Web Site
- Demonstrate knowledge and understanding of all fundamental automotive concepts as outlined by NATEF

Students seeking acceptance into the Automotive Technology (GM-ASEP) A.A.S. degree program will have to apply to the program by April 20 prior to their enrollment in the program. Requirements to apply are:

1. Complete the program application form
2. Complete all developmental mathematics courses (if necessary) or be eligible for MAT* 115
3. Complete all developmental English courses (if necessary) or be eligible for ENG* 101
4. Complete AUT* 112, AUT* 132, or test out of an automotive specification course in accordance to college policy
5. Complete the Automotive Programs' placement exam
6. Interview with the Program Coordinator for the program that the student is applying to
7. Have a valid driver's license issued by one of the 50 states in United States that does not have any restrictions that would prohibit the student from operating an automotive on public roads

Selection of students will be completed by June 1 and students will be notified shortly after. Once students are selected for enrollment into the program, they will have until August 20 to find a sponsor for their internships at a GM automotive dealership or AC Delco repair facility to remain in the degree program. Sponsorship of students is a requirement throughout the program to include at the time of graduation from Gateway Community College. Upon completion of the ASEP program, students will receive an Associate in Applied Science degree in Automotive Technology from Gateway Community College. The program offers opportunities for future specialization and advancement to management. This program has been evaluated by the National Automotive Technicians Education Foundation Inc. (NATEF) and certified by the National Institute for Automotive Service Excellence (ASE). Students are encouraged to take the National Institute for Automotive Service Excellence (ASE) exams for each of the eight automotive subject areas for national certification.

GENERAL EDUCATION REQUIREMENTS

TAP Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in CALT	3
Aesthetic Dimensions Historical Knowledge/Understanding Oral Communication Scientific Reasoning	AD HK OC SR		Choose one course in one of these areas: AD, HK, OC, SR	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
AUT* 112	GM Specifications	2
AUT* 116	GM Suspension and Steering	3
AUT* 118	GM Braking Systems	3
AUT* 161	GM Internship 1A	1
Gen Ed - WC I	ENG* 101 Composition	3
	Total Semester Credit Hours	12

Winter Intersession Session

Course #	Title	Credits
AUT* 162	GM Internship 1B	1

Second Semester

Course #	Title	Credits
AUT* 110	GM Engine Repair	3
AUT* 114	GM Electrical Systems	3
AUT* 163	GM Internship 1C	1
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
	Total Semester Credit Hours	13

Summer Session

Course #	Title	Credits
AUT* 171	GM Internship 2	4

Third Semester

Course #	Title	Credits
AUT* 201	GM Engine Performance	3
AUT* 203	GM Manual Drivetrain	3
AUT* 261	GM Internship 3A	1
Ged Ed - SP	Choose one course in Social Phenomena	3
Gen Ed	Choose one course in AD, HK, OC, or SR	3
	Total Semester Credit Hours	13

Winter Intersession Session

Course #	Title	Credits
AUT* 262	GM Internship 3B	1

Fourth Semester

Course #	Title	Credits
AUT* 205	GM Automatic Drivetrain	3
AUT* 207	GM Climate Control and Safety Systems	3
AUT* 263	GM Internship 3C	1
Gen Ed - SK	Choose one course in Scientific Knowledge	3-4
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
	Total Semester Credit Hours	13-14

Summer Session

Course #	Title	Credits
AUT* 271	GM Internship 4	3
	Total Credit Hours	60-61

AUTOMOTIVE TECHNOLOGY - HONDA PACT

Associate in Applied Science

The mission of the Honda PACT Degree Program is to educate those seeking employment in the field of automotive technology. It will prepare students for entry-level employment as Honda/Acura Automotive Technicians. The Automotive Technician field has been in very high demand in the State, and it is growing. The intent of the program is to meet the growing need for technicians in the college service area. This program furthers the college's mission to "respond to the changing academic, occupational, technological needs" by offering "a broad range of credit (technical, career, academic) programs and courses leading to transfer, employment and lifelong learning." The automotive curriculum is designed to meet all NATEF requirements for national accreditation. For more information, contact Scott McFarland, Program Coordinator at (203) 285-2405 or e-mail at smcfarland@gatewayct.edu.

* Students must be sponsored by a Honda or Acura dealership.

AUTOMOTIVE TECHNOLOGY - HONDA PACT PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Meet all NATEF required outcomes for MAST certification
- Demonstrate workplace skills related to the occupation, including but not limited to resume preparation, seeking employment, maintaining a safe and healthy workplace environment, demonstrating workplace ethics, and teamwork
- Apply knowledge of theory and safety to accomplish certain tasks related to the occupation
- Identify and use appropriate tools, testing, and measurement equipment to accomplish certain tasks related to the occupation
- Use current reference and training materials from accepted industry publications and standards to accomplish specific tasks
- Receive corporate credit for web based and embedded classroom / laboratory training in the "inTraining" Honda system
- Demonstrate knowledge and understanding of all fundamental automotive concepts as outlined by NATEF

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication (1)	WC	ENG* 101	Composition	3
Written Communication (2)	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in: BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in CALT	3
Aesthetic Dimension Historical Knowledge Oral Communication Scientific Reasoning	AD HK OC SR		Choose one course in any of the four areas	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
AUT* 144	Honda Electrical Systems	4
AUT* 148	Honda Brake Systems	4
AUT* 181	Honda Practicum I	1
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
AUT* 140	Honda Engines	4
AUT* 146	Honda Steering & Suspension Systems	4
AUT* 281	Honda Practicum II	1
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
Gen Ed	Choose one course in AD, HK, OC, SR	3
	Total Semester Credit Hours	15

Summer

Course #	Title	Credits
AUT* 159	ASE Prep and Shop Practices	1
AUT* 283	Honda Practicum III	2
	Total Semester Credit Hours	3

Third Semester

Course #	Title	Credits
AUT* 243	Honda Transmission and Drivetrain	4
AUT* 247	Honda Air Conditioning & Restraints	4
AUT* 284	Honda Practicum IV	1
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - SP	Choose one course in Social Phenomena	3
		15

Fourth Semester

Course #	Title	Credits
AUT* 241	Honda Fuel and Emissions Systems	4
AUT* 244	Honda Advanced Electrical Systems	4
AUT* 285	Honda Practicum V	1
Gen Ed - SR	Choose one course in Scientific Reasoning	3 - 4
	Total Semester Credit Hours	12-13
	Total Credit Hours	60 - 61

AUTOMOTIVE TECHNOLOGY - HONDA PACT

Certificate

The mission of the Honda PACT Certificate Program is to educate those seeking employment in the field of automotive technology. It will prepare students for entry-level employment as Honda/Acura Automotive Technicians. The Automotive Technician field has been in very high demand in the State, and it is growing! The intent of the program is to meet the growing need for technicians in the college service area. This program furthers the college's mission to "respond to the changing academic, occupational, technological needs" by offering "a broad range of credit (technical and career) programs and courses leading to transfer, employment and lifelong learning." The automotive curriculum is designed to meet all NATEF requirements for national accreditation. For more information, contact Scott McFarland, Program Coordinator at (203) 285-2405 or e-mail at (smcfarland@gatewayct.edu).

AUTOMOTIVE TECHNOLOGY - HONDA PACT CERTIFICATE OUTCOMES

- Meet all NATEF required outcomes for MAST certification
- Demonstrate workplace skills related to the occupation, including but not limited to resume preparation, seeking employment, maintaining a safe and healthy workplace environment, demonstrating workplace ethics, and teamwork
- Apply knowledge of theory and safety to accomplish certain tasks related to the occupation
- Identify and use appropriate tools, testing, and measurement equipment to accomplish certain tasks related to the occupation
- Use current reference and training materials from accepted industry publications and standards to accomplish specific tasks
- Receive corporate credit for web based and embedded classroom / laboratory training in the "inTraining" Honda system
- Demonstrate knowledge and understanding of all fundamental automotive concepts as outlined by NATEF

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
AUT* 144	Honda Electrical Systems	4
AUT* 148	Honda Brake Systems	4
AUT* 181	Honda Practicum I	1
AUT* 243	Honda Transmission and Drivetrain	4
AUT* 247	Honda Air Conditioning & Restraint Systems	4
	Total Semester Credits	17

Second Semester

Course #	Title	Credits
AUT* 140	Honda Engines	4
AUT* 146	Honda Steering & Suspension Systems	4
AUT* 241	Honda Fuel and Emissions Systems	4
AUT* 244	Honda Advanced Electrical Systems	4
AUT* 281	Honda Practicum II	1
	Total Semester Credits	17

Summer

Course #	Title	Credits
AUT* 159	ASE Prep and Shop Practices	1
AUT* 283	Honda Practicum III	2
AUT* 284	Honda Practicum IV	1
AUT* 285	Honda Practicum V	1
	Total Semester Credits	5
	Total Credits	390

BUSINESS

BUSINESS ADMINISTRATION

Associate in Science

The complexity of business demands a constant supply of trained managers and administrators. This career program prepares students for managerial and administrative responsibilities. This program includes both the basic concepts of business management and the fundamental tools of management that are common to both the private and public sectors of the economy. For more information, call the Business Department Chairperson, Richard Rees at (203) 285-2178 or e-mail at (rrees@gatewayct.edu).

BUSINESS ADMINISTRATION PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Demonstrate reasoning and analytic skills
- Display the traits and attitudes that promote ongoing success and a strong work ethic
- Work with others, including culturally and intellectually diverse people
- Identify the leadership and motivational traits and qualities necessary to accomplish organizational goals
- Understand the global, economic, ethical, and legal environments of contemporary business.

GENERAL EDUCATION REQUIREMENTS

TAP Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 101	Macroeconomics	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218 or BFN* 110 or IDS 106	Entrepreneurship or Personal Finance or Critical Thinking - Business	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
ACC* 113	Financial Accounting	3
BBG* 231	Business Law I	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - WC I	Composition	3
Gen Ed - QR	MAT* 137 Intermediate Algebra (or higher)	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
ACC* 117	Principles of Managerial Accounting	3
Gen Ed - OC	BBG* 210 Business Communication	3
BMG* 202	Principles of Management	3
Gen Ed - SP	ECN* 101 Macroeconomics	3
Gen Ed - CALT	BES* 218 Entrepreneurship or BFN* 110 Personal Finance or IDS 106 Critical Thinking - Business	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
MAT* 166	Principles of Business Statistics	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
ECN* 102	Microeconomics	3
Elective	Business	3
	Total Semester Credit Hours	15-16

Fourth Semester

Course #	Title	Credits
BFN* 201	Principles of Finance	3
BMG* 220	Human Resources Management	3
BMK* 201	Principles of Marketing	3
Elective	Business	6
	Total Semester Credit Hours	15
	Total Credit Hours	60-61

BUSINESS ADMINISTRATION

Certificate

This certificate program upgrades students' business and management skills and/or allows them to obtain credits as prerequisites for higher education programs.

PROGRAM REQUIREMENTS

Course #	Title	Credits
ACC* 113	Principles of Financial Accounting	3
BBG* 231	Business Law I	3
BMK* 202	Principles of Management	3
CSA* 135	Spreadsheet Applications	3
	Total Credit Hours	12

Course #	Title	Credits
BBG* 210	Business Communications	3
BMG* 201	Principles of Marketing	3
ECN* 101 or ECN* 102	Macroeconomics or Microeconomics	3
Elective	Business	3
	Total Credit Hours	12
	Total Certificate Credits	24

BUSINESS ADMINISTRATION: ACCOUNTING OPTION

Associate in Science

The complexity of society requires trained personnel to interpret and manage the fiscal aspects of business and industry. The curriculum of the Business Administration: Accounting Option is designed to be either a career program. Career-oriented students are prepared for entry-level positions in public and private accounting.

BUSINESS ADMINISTRATION ACCOUNTING OPTION PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Apply generally accepted accounting principles in the recording and reporting of financial information
- Describe accounting system procedures and techniques
- Analyze and use financial reports for decision-making
- Explain the use of financial information in controlling and evaluating performance
- Communicate effectively using the vocabulary of financial and managerial accounting and economics
- Explain how budgeting, activity-based costing, and strategic cost management foster the effective use of resources and help an organization accomplish its goals
- Use computerized spreadsheets and accounting software
- Apply basic knowledge from history, social sciences, behavioral sciences, arts, literature, and natural sciences to solve unfamiliar problems
- Demonstrate reasoning and analytic skills
- Work with others, including culturally and intellectually diverse people
- Demonstrate the ability to acquire, organize, and present information effectively, regardless of medium – written, spoken, or electronic
- Show how organizational dynamics and sociopolitical and economic environments influence the creation of solutions
- Display the traits and attitudes that promote ongoing success and a strong work ethic

GENERAL EDUCATION REQUIREMENTS

TAP Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 101	Macroeconomics	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218 or BFN* 110 or IDS 106	Entrepreneurship or Personal Finance or Critical Thinking - Business	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
ACC* 113	Financial Accounting	3
BBG* 231	Business Law I	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - WC I	Composition	3
Gen Ed - QR	MAT* 137 Intermediate Algebra (or higher)	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
ACC* 117	Principles of Managerial Accounting	3
Gen Ed - OC	BBG* 210 Business Communication	3
BMG* 202	Principles of Management	3
Gen Ed - SP	ECN* 101 Macroeconomics or ECN* 102 Microeconomics	3
Gen Ed - CALT	BES* 218 Entrepreneurship or BFN* 110 Personal Finance IDS 106 Critical Thinking - Business	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
ACC* 125	Accounting Computer Applications	3
MAT* 166	Business Statistics	3
ECN* 102	Microeconomics	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
ACC* 241	Federal Taxes I	3
BBG* 232	Business Law II	3
BFN* 201	Principles of Finance	3
BMK* 201	Principles of Marketing	3
Elective	Business	3
	Total Semester Credit Hours	15
	Total Credit Hours	60-61

ACCOUNTANT'S ASSISTANT

Certificate

This program is for the mature individual who has previous office experience and is seeking additional skills. Upon completion of this program, the Accountant's Assistant can assume "full charge" of a set of books for accounts of small or medium businesses and nonprofit organizations. The Accountant's Assistant performs duties under the supervision and direction of internal and/or public accountants. For more information, call the Business Department Chairperson, Richard Rees, at (203) 285-2178 or e-mail at (rrees@gatewayct.edu).

PROGRAM REQUIREMENTS

Course #	Title	Credits
ACC* 113	Principles of Financial Accounting	3
ACC* 125	Accounting Computer Application I	3
ACC* 117	Principles of Managerial Accounting	3
ACC* 241	Federal Taxes I	3
CSA* 135	Spreadsheet Applications	3
	Total Semester Credit Hours	15

BOOKKEEPING

Certificate

This 30 hour certificate program trains students in a wide variety of office skills and prepares them for immediate entry into the job market. For more information, call the Business Department Chairperson, Richard Rees, at (203) 285-2178 or e-mail at (rrees@gatewayct.edu).

PROGRAM REQUIREMENTS

Course #	Title	Credits
ACC* 100 or ACC* 113	Basic Accounting or Principles of Financial Accounting	3
ACC* 125	Accounting Computer Application I	3
BOT* 111	Keyboarding I	3
BOT* 137	Word Processing Applications (Word)	3
BOT* 210	Computerized Communication	3
BOT* 251	Administrative Procedures	3
CSA* 135	Spreadsheet Applications	3
CSA* 140	Database Applications	3
	Total Credit Hours	24

BUSINESS ADMINISTRATION: MANAGEMENT OPTION

Associate in Science

The Business Administration Management Option helps meet the growing need for qualified supervisory and entry-level managers in the Greater New Haven area.

BUSINESS ADMINISTRATION MANAGEMENT OPTION PROGRAM OUTCOMES

Upon successful completion of all program requirements, the graduate should be able to:

- Review the historical development of management theories and relate them to current managerial thought
- Use the planning process to accomplish both personal and professional goals
- Explain the importance of and the procedure for organizing the workplace and defining tasks, responsibilities, and relationships
- Describe the staffing processes of recruitment, placement, training, and development for maintaining an effective work force
- Identify the leadership and motivational traits and qualities necessary to accomplish organizational goals
- Analyze the decision-making and problem-solving methods that managers use
- Demonstrate reasoning and analytic skills
- Work with others, including culturally and intellectually diverse people
- Display the traits and attitudes that promote ongoing success and a strong work ethic
- Understand the global, economic, ethical, and legal environments of contemporary business.

GENERAL EDUCATION REQUIREMENTS

TAP Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 101	Macroeconomics	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218 or BFN* 110 or IDS 106	Entrepreneurship or Personal Finance or Critical Thinking - Business	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

First Semester

Course #	Title	Credits
BBG* 231	Business Law I	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 137 Intermediate Algebra (or higher)	3
Gen Ed - CALT	BES* 218 Entrepreneurship or BFN* 110 Personal Finance or IDS 106 Critical Thinking - Business	3
	Total Semester Credit Hours	15-16

Second Semester

Course #	Title	Credits
ACC* 113	Principles of Financial Accounting	3
Gen Ed - OC	BBG* 210 Business Communication	3
Gen Ed - SP	ECN* 101 Macroeconomics	3
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS* PHY*	3-4
	Total Semester Credit Hours	15-16

Third Semester

Course #	Title	Credits
ACC* 117	Principles of Managerial Accounting	3
BMG* 202	Principles of Management	3
BMK* 201	Principles of Marketing	3
ECN* 102	Microeconomics	3
Gen Ed - QR	MAT 137 Intermediate Algebra (or higher)	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
BMG* 200	Organizational Behavior	3
BMG* 220	Human Resource Management	3
BFN* 201	Principles of Finance	3
Elective	Business	6
	Total Semester Credit Hours	15
	Total Credit Hours	60-61

MANAGEMENT

Certificate

The Management Certificate allows the student to focus on the specific skills needed for success in today's workplace. It is designed for those who do not have the time to pursue a degree program but want to improve their managerial skills. Those students interested in continuing their studies will be able to use all credits earned in this program toward a degree in the Business Administration Management Option.

MANAGEMENT CERTIFICATE PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Use effective planning processes to accomplish both personal and professional goals
- Use appropriate management skills for workplace decision-making
- Describe the various ways firms are organized and the roles of personnel and organizational systems
- Discuss tools and techniques used in the management control process
- Discuss the role of computers and technology in society and state ways in which businesses use information systems in decision-making

PROGRAM REQUIREMENTS

Freshman Year – Fall Semester

Course #	Title	Credits
BMG* 202	Principles of Management	3
BBG* 231	Business Law I	3
CSA* 135	Spreadsheet Applications	3
ENG* 101	Composition	3
	Total Semester Credit Hours	12

Freshman Year – Spring Semester

Course #	Title	Credits
BBG* 210	Business Communication	3
BBG* 220	Human Resource Management	3
BMG* 210	Organizational Behavior	3
Elective	Business	3
	Total Semester Credit Hours	12
	Total Credit Hours	24

Business/Computer Electives: All BOT courses

BUSINESS ADMINISTRATION: MARKETING OPTION

Associate in Science

In today's global, digitized, and interactive business world, marketing offers a viable opportunity for business students. Marketing is dynamic, challenging, and the driving force in most businesses because it focuses on satisfying needs and wants of consumers. It includes activities that influence the flow of goods through the supply chain including product development and management, packaging, distribution, pricing, advertising, selling, and customer service. Marketing classes integrate theory and practical applications while applying related business knowledge. The program courses may be transferred to bachelor's degree programs.

BUSINESS ADMINISTRATION MARKETING OPTION PROGRAM OUTCOMES

Upon successful completion of all program requirements, the graduate should be able to:

- Identify core concepts of marketing and the role of marketing in organization, society and the global economy.
- Describe the legal and ethical environments in which marketing is conducted.
- Demonstrate information literacy through research skills and the use of technology.
- Demonstrate analytical, problem-solving, and decision-making skills applicable to business administration and marketing.
- Apply effective written and oral communication skills to business situations.

GENERAL EDUCATION REQUIREMENTS

Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 101 or ECN* 102	Macroeconomics or Microeconomics	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra or higher	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218	Entrepreneurship	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
BBG* 231	Business Law I	3
BMK* 201	Principles of Marketing	3
Gen Ed - OC	BBG* 210 Business Communication	3
Gen Ed - QR	MAT* 137 Intermediate Algebra or higher	3
Gen Ed - WC I	ENG* 101 Composition	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
ACC* 113	Principles of Financial Accounting	3
BMG* 220	Human Resources Management	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
Gen Ed - CALT	BES* 218 Entrepreneurship	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
BMK* 241	Principles of Advertising	3
MAT* 166	Principles of Business Statistics	3
Gen Ed - SP	ECN* 101 Macroeconomics or ECN* 102 Microeconomics	3
Elective	Restricted - (Any BMK* course or HSP* 244)	3
Elective	Business	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
BBG* 294	Business Internship	3
BMK* 285	Current Marketing Topics	3
Gen Ed - SK	Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Elective	Restricted - Business (Any Business course)	3
Elective	Restricted - (Any BMK* course or HSP* 244)	3
	Total Semester Credit Hours	15-16
	Total Credit Hours	60-61

PUBLIC UTILITY MANAGEMENT

Associate in Science

The Public Utility Management program will provide graduates with a wide variety of career options in the field. The industry offers an array of career tracks for those with a strong technical background as well as graduates with an aptitude in business, marketing, accounting, information technology, data analysis, and office administration. This degree allows the opportunity for a seamless transfer to Southern Connecticut State University (SCSU) where students can earn a Bachelor's Degree in Business Administration with a specialization in Public Utility Management.

PUBLIC UTILITY MANAGEMENT PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Describe and apply the operations of public utility management
- Apply effective written and oral communication skills to articulate opportunities, ideas, and problems identified, as well as appropriate strategic responses across the economic social, environmental, public and political spheres
- Formulate team dynamics and working in groups, particularly in relation to the functioning of critical incident response teams
- Devise and translate ideas into logical steps that utilize resources and establish best practices with colleagues for customers and suppliers/vendors
- Employ and make use of written documents such as Environmental Protection Agency methods of analysis, internal standard operating procedures, safety rules, policy manuals, and professional journals
- Analyze and interpret the legal and/or regulatory implications of business and utility management
- Perform laboratory testing and analyses required for operational control and regulatory compliance

GENERAL EDUCATION REQUIREMENTS

Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 102	Microeconomics	3
Quantitative Reasoning	QR	MAT* 167	Principles of Statistics	3
Scientific Knowledge & Understanding	SK	EVS* 114	Environmental Science	4
Critical Analysis/Logical Thinking	CALT	IDS 106	Critical Thinking - Business	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Course Name	Credits
ACC* 113	Principles of Financial Accounting	3
BMG* 110	Public Utility Management	3
ECN* 101	Macroeconomics	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 167 Principles of Statistics	3
	Total Semester Credits	15

Second Semester

Course #	Course Name	Credits
ACC* 117	Principles of Managerial Accounting	3
BBG* 115 or CSA* 135	Business Software Applications or Spreadsheet Applications	3
Gen Ed - SP	ECN* 102 Microeconomics	3
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
ENV* 110	Environmental Regulations	3
	Total Semester Credits	15

Third Semester

Course #	Course Name	Credits
BMG* 202	Principles of Management	3
BMG* 216	Rates and Revenues	3
BMG* 219	Asset and Infrastructure Management	3
Gen Ed - SK	EVS* 114 Environmental Science	4
Gen Ed - CALT	IDS 106 Critical Thinking - Business	3
	Total Semester Credits	16

Fourth Semester

Course #	Course Name	Credits
Gen Ed - OC	BBG* 210 Business Communication	3
BMG* 221	Customer Relations	3
BMG* 231	Business Law	3
BBG* 240	Business Ethics	3
Elective	Restricted	3
	Total Semester Credits	15
	Total Program Credits	61

Restricted Electives: BBG* 294, BMG* 201, or QUA* 114

BUSINESS OFFICE TECHNOLOGY

BUSINESS OFFICE TECHNOLOGY PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Demonstrate technical proficiency in office applications software including: word processing, operating system, electronic spreadsheet, database management, integrated office applications and presentation graphics.
- Exhibit verbal, non-verbal and written communication skills.
- Key and format business documents and demonstrate proofreading skills.
- Demonstrate effective use of soft skills including: professionalism, adaptability to change, initiative, confidentiality, positive attitude and human-relations and creativity.
- Practice ethical behavior and incorporate the principles of honesty and integrity.
- Apply critical-thinking strategies and effective decision-making techniques to solve problems.
- Demonstrate self-management skills, including time management and organization.
- Contribute as a productive team member in a culturally and intellectually diverse global environment.

These programs provide high quality instruction using state-of-the-art computer technology and current software programs to prepare competent, skilled, and professional office workers who are able to meet the demands of business.

Administrative assistants play vital roles in American business, government, and industry. To prepare for these roles, students may choose from any of the three associate degrees or five certificate options described below. There is always a great demand for administrative assistants. Because college-trained administrative assistants possess a high level of skills, maturity, and a sophisticated attitude, they enter an organization with three advantages: 1) they command a better starting salary, 2) they may work for higher level executives, and 3) they will receive promotions more rapidly than those without a college degree.

Students enrolling in this program who have previous keyboarding instruction should contact a member of the Business Office Technology faculty at (203) 285-2177. Students with no previous keyboarding instruction are advised to take Keyboarding for Information Processing I (BOT* 111) in the summer session in order to follow the fall-spring sequence of courses. Students interested in receiving credit for life experience should contact one of the faculty members in the Business Office Technology Department. For more information, call Sheri Valentin, Program Coordinator at (203) 285-2169 or email svalentin@gatewayct.edu.

GENERAL EDUCATION REQUIREMENTS

Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218 or IDS 106	Entrepreneurship or Critical Thinking - Business	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

BOT: ADMINISTRATIVE ASSISTANT OPTION**SUGGESTED COURSE SEQUENCE****First Semester**

Course #	Title	Credits
BOT* 111	Keyboarding for Information Processing I	3
BOT* 220	Computerized Communication	3
BMG* 202	Principles of Management	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - WC I	ENG* 101 Composition	3
	Total Credit Hours	15

Second Semester

Course #	Title	Credits
BOT* 137	Word Processing Applications	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
Gen Ed - CALT	BES* 218 Entrepreneurship or IDS 106 Critical Thinking - Business	3
Elective	Business	3
	Total Credit Hours	15

Third Semester

Course #	Title	Credits
ACC* 100	Basic Accounting	3
BOT* 112	Keyboarding II	3
BOT* 251	Administrative Procedures	3
Gen Ed - SP	PSY* 111 General Psychology I	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3
	Total Credit Hours	15

Fourth Semester

Course #	Title	Credits
BOT* 219	Integrated Office	3
BOT* 279	BOT Administrative Practicum	3
BBG* 231	Business Law I	3
CSA* 140	Database Applications	3
Gen Ed - OC	BBG* 210 Business Communication	3
	Total Credit Hours	15
	Total Program Credit Hours	60

BOT: ADMINISTRATIVE ASSISTANT

Certificate

This is a skills-oriented sequence for students who do not wish to pursue an associate degree option. However, credits earned as part of this certificate program may be applied to the associate degree options in Business Office Technology. This program is tailored to meet individual needs. Students with excellent keyboarding skills may substitute electives for keyboarding courses. Emphasis is placed on the basic administrative and soft skills necessary to be successful in today's global business environment. For more information, call Sheri Valentin, Program Coordinator at (203) 285-2169 or email svalentin@gatewayct.edu.

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
ACC* 100	Basic Accounting	3
BOT* 111 + or BOT* 219	Keyboarding for Information Processing I or Integrated Office	3
BOT* 112	Keyboarding for Information Processing II	3
BMG* 202	Principles of Management	3
CSA* 135	Spreadsheet Applications	3
	Total Semester Hours	15

Second Semester

Course #	Title	Credits
BOT* 137	Word Processing Applications I	3
BOT* 251	Administrative Procedures	3
BOT* 279	BOT Administrative Practicum	4
BBG* 210	Business Communication	3
Elective	Business	3
	Total Semester Hours	16
	Total Credit Hours	31

BOT: OFFICE APPLICATIONS SKILLS UPDATE

Certificate

Designed for practicing office professionals as well as those returning to the workforce. It provides students with the opportunity to update their computer skills, increase their employability and advance in their careers. Students utilize state of the art software applications in word processing, spreadsheet, database management and presentation software. For more information, call Sheri Valentin, Program Coordinator at (203) 285-2169 or email svalentin@gatewayct.edu.

COURSE REQUIREMENTS

Course #	Title	Credits
BOT* 137	Word Processing Applications	3
CSA* 135	Spreadsheet Applications	3
CSA* 140	Database Applications	3
BOT* 220	Computerized Communication	3
	Total Credit Hours	12

BOT: CUSTOMER SERVICE TECHNOLOGY**Certificate**

This program prepares students for entry-level customer service representative positions. It provides training in technological and soft skills required for excellence in customer service satisfaction. For more information, call Sheri Valentin, Program Coordinator at (203) 285-2169 or email svalentin@gatewayct.edu.

COURSE REQUIREMENTS**First Semester**

Course #	Title	Credits
BOT* 111	Keyboarding for Information Processing I	3
BOT* 137	Word Processing Applications	3
BBG* 210	Business Communication	3
BMK* 201	Principles of Marketing	3
COM* 171	Fundamentals of Human Communication	3
	Total Credit Hours	15

Second Semester

Course #	Title	Credits
BMK* 220	Sales	3
BMK* 285	Current Marketing Topics/Quality Customer Service	3
BOT* 251	Administrative Procedures	3
CSA* 135	Spreadsheet Applications	3
COM* 172	Interpersonal Communications	3
	Total Credit Hours	15
	Total Credit Hours	30

BOT: ELECTRONIC HEALTH RECORDS AND CODING

Associate in Science

This program prepares students for entry-level positions in medical coding and billing. Duties include creating electronic health records and coding accurately. Students will be able to analyze and revise patient data while maintaining the integrity and protecting the privacy of health information. Responsibilities also include performing computer tasks in electronic health records systems and other software applications. This medical office professional will be able to work in a variety of medical environments such as physician practices, hospitals, clinics, and insurance companies. Upon successful completion of this program, individuals will be eligible to take a national exam to become Certified Professional Coders through the American Academy of Professional Coders. For more information, call Sheri Valentin, Program Coordinator at (203) 285-2169 or email svalentin@gatewayct.edu.

ELECTRONIC HEALTH RECORDS AND CODING PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Apply coding knowledge using coding guidelines from ICD-10, CPT-4, and HCPCS
- Utilize and apply medical terminology in relation to the human body
- Communicate effectively both verbally and in writing with medical professionals and office personnel
- Understand the HIPAA regulations and guidelines that apply to health records and the release of protected health information and patient confidentiality and privacy
- Recognize the importance of healthcare documentation in meeting the legal and ethical requirements as it relates to patient care
- Create and process medical claims, along with the understanding of billing and collection procedures
- Perform computer tasks in Electronic Health Records system and other software applications.

GENERAL EDUCATION REQUIREMENTS

Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra	3
Scientific Knowledge & Understanding	SK	BIO* 110 or BIO* 115	Principles of the Human Body or Human Biology	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218 or IDS 106	Entrepreneurship or Critical Thinking - Business	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
BOT* 111	Keyboarding for Information Processing I	3
BOT* 220	Computerized Communication	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - WC I	ENG* 101 Composition	3
HIM* 101	Medical Terminology	3
	Total Credit Hours	15

Second Semester

Course #	Title	Credits
BOT* 137	Word Processing Applications	3
BOT* 181	Medical Coding I	3
BOT* 282	Medical Administrative Procedures	3
Gen Ed - SK	BIO* 110 Principles of the Human Body or BIO* 115 Human Biology	3-4
Gen Ed - CALT	BES* 218 Entrepreneurship or IDS 106 Critical Thinking - Business	3
	Total Credit Hours	15-16

Third Semester

Course #	Title	Credits
BOT* 182	Medical Coding II	3
BOT* 291	Electronic Health Records (Fall only)	3
BMG* 202	Principles of Management	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - QR	MAT* 137 Intermediate Algebra (or higher)	3
	Total Credit Hours	15

Fourth Semester

Course #	Title	Credits
BOT* 279	BOT Administrative Practicum	4
BMG* 287	Founds/Mgmt. of Medical Insurance (Spring only)	3
CSA* 140	Database Applications	3
Gen Ed - SP	PSY* 111 General Psychology I	3
Gen Ed - OC	BBG* 210 Business Communication	3
	Total Credit Hours	16
	Total Program Credit Hours	61-62

BOT: LEGAL ADMINISTRATIVE ASSISTANT OPTION**Associate in Science**

The duties of a legal administrative assistant vary considerably depending on the specialty of the law office. However, all legal administrative assistants should be able to: prepare time sheets indicating the hours an attorney spends on behalf of various clients; prepare clients' fee and disbursement statements; and prepare appropriate documents for real estate, probate, corporate, tax, civil or criminal litigation, and domestic matters. Knowledge of legal terminology is essential for anyone seeking a career as a legal administrative assistant. For more information, call Sheri Valentin, Program Coordinator at (203) 285-2169 or email svalentin@gatewayct.edu.

BOT: LEGAL ADMINISTRATIVE ASSISTANT OPTION PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Differentiate between the various kinds of law offices, courts, corporate legal departments, law schools, and a wide range of other office settings.
- Exhibit effective verbal and written legal communication skills.
- Demonstrate skills in law office procedures and legal document processing.
- Employ the use of technology appropriate for use in the legal environment.
- Proofread and edit documents accurately.

GENERAL EDUCATION REQUIREMENTS

Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose any course in CALT	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
ACC* 100	Basic Accounting	3
BBG* 231	Business Law I	3
BOT* 111	Keyboarding for Information Processing I	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - CALT	Choose any course in CALT	3
	Total Credit Hours	15

Second Semester

Course #	Title	Credits
BBG* 232	Business Law II	3
BMG* 210	Organizational Behavior	3
BOT* 137	Word Processing Applications	3
Gen Ed - WC	ENG* 101 Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
	Total Credit Hours	15

Third Semester

Course #	Title	Credits
BOT* 112	Keyboarding for Information Processing II	3
BOT* 271	Legal Document Production (Fall semester only)	3
CSA* 140	Database Applications	3
ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Gen Ed - SK	Choose any course in SK	3-4
	Total Credit Hours	15-16

Fourth Semester

Course #	Title	Credits
BOT* 219	Integrated Office	3
BOT* 251 or BOT* 272	Administrative Procedures (fall semester only) or Legal Administrative Procedures (spring semester only)	3
BOT* 279	BOT Administrative Practicum	4
Gen Ed - SP	PSY* 111 General Psychology	3
Gen Ed - OC	BBG* 210 Business Communication	3
	Total Credit Hours	16
	Total Program Credit Hours	61-62

Notes:

Students who satisfy the Keyboarding for Information Processing I (BOT* 111) requirement may substitute Computerized Communication (BOT* 220).

BOT* 271 and BOT* 272 are offered in odd years only.

BOT: MEDICAL ADMINISTRATIVE ASSISTANT OPTION**Associate in Science**

The duties of a medical administrative assistant will vary among medical office environments such as hospitals, outpatient facilities, urgent or walk-in medical clinics and physician practices. In addition to regular office duties, a medical administrative assistant performs specialized tasks. These tasks include: appointment scheduling, medical record management (paper or electronic health information), billing and accounts payable services/procedures, transcribing medical procedures/treatments, medical coding and completing/processing of insurance claims. Students utilize state of the art medical office software/databases to maintain and to archive accurate patient health and financial documentation in accordance with state and federal regulations. For more information, call Sheri Valentin, Program Coordinator at (203) 285-2169 or email svalentin@gatewayct.edu.

GENERAL EDUCATION REQUIREMENTS

Competency	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK	BIO* 110 or BIO* 115	Principles of the Human Body or Human Biology	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218 or IDS 106	Entrepreneurship or Critical Thinking - Business	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
BOT* 111	Keyboarding for Information Processing I	3
CSA* 135	Spreadsheet Applications	3
HIM* 101	Medical Terminology	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 109 Quatitative Literacy (or higher)	3
	Total Credit Hours	15

Second Semester

Course #	Title	Credits
ACC* 100	Basic Accounting	3
BOT* 137	Word Processing Applications	3
BOT* 181	Medical Coding I	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - CALT	BES* 218 Entrepreneurship or IDS 106 - Critical Thinking - Business	3
	Total Credit Hours	15

Third Semester

Course #	Title	Credits
BOT* 182	Medical Coding II	3
BOT* 282	Medical Administrative Procedures	3
CSA* 140	Database Applications	3
Gen Ed - OC	BBG* 210 Business Communication	3
Gen Ed - SK	BIO* 110 Principles of the Human Body or BIO* 115 Human Biology	3-4
	Total Credit Hours	15-16

Fourth Semester

Course #	Title	Credits
BOT* 112	Keyboarding for Information Processing II	3
BOT* 219	Integrated Office	3
BOT* 220	Computerized Communication	3
BOT* 279	BOT Administrative Practicum	4
Gen Ed - SP	PSY* 111 General Psychology I	3
	Total Credit Hours	16
	Total Program Credit Hours	61-62

BOT: MEDICAL ADMINISTRATIVE ASSISTANT

Certificate

The Medical Administrative Assistant Certificate prepares students to work in a medical office or hospital. In addition to regular office duties, a medical administrative assistant performs specialized tasks. Emphasis is placed on medical coding and medical transcription skills. Training is provided using state-of-the-art medical office software. For more information, call Sheri Valentin, Program Coordinator at (203) 285-2169 or email svalentin@gatewayct.edu.

COURSE REQUIREMENTS

First Semester

Course #	Title	Credits
BOT* 111	Keyboarding for Information Processing	3
BOT* 137	Word Processing Applications	3
BOT* 181	Medical Coding I	3
ENG* 101	Composition	3
HIM* 101	Medical Terminology	3
	Total Credit Hours	15

Second Semester

Course #	Title	Credits
BIO* 110 or BIO* 115	Principles of the Human Body or Human Biology	3-4
BOT* 182	Medical Coding II	3
CSA* 135 #	Spreadsheet Applications	3
BOT* 279	BOT Administrative Practicum	4
BOT* 282	Medical Administrative Procedures	3
	Total Credit Hours	31-32

CONNECTICUT COLLEGE OF TECHNOLOGY

Connecticut's College of Technology is an innovative course of study for men and women considering a career in the challenging and rewarding fields of engineering and technology. It is an integrated curriculum at Connecticut's public and private colleges and universities, allowing individuals to begin their studies at Gateway Community College and progress directly into a bachelor's degree program at a four-year university. The curriculum consists of two distinct pathways: engineering and technology.

CONNECTICUT COLLEGE OF TECHNOLOGY STUDIES PATHWAYS PROGRAM OUTCOMES

Upon successful completion of all program requirements, the graduate will:

- Demonstrate competence in written and oral communication
- Demonstrate scientific and qualitative reasoning skills
- Be able to apply appropriate mathematical and scientific principles to problem solving
- Have completed the two-year course of study as outlined in the Gateway Community College catalog
- Be eligible for transfer to the UCONN School of Engineering or CCSU School of Technology, depending upon the chosen pathway
- Follow a curriculum containing at least the minimum general education requirements with a core of college of technology requirements

The **Engineering Science A.S. degree** leads to transfer to one of the following institutions: School of Engineering at the University of Connecticut, School of Engineering at the University of Hartford, School of Engineering at the University of New Haven, School of Engineering at Fairfield University.

The **Technology Studies A.S. degree** leads to transfer to the School of Technology at Central Connecticut State University or Charter Oak State College, Connecticut's external degree program. The Technology Pathway to the School of Technology at Central Connecticut State University enables transfer into one of three programs: Engineering Technology, Industrial Technology, or Technology Management.

For information on any of the Technology Studies Pathway programs, contact Susan Spencer at (203) 285-2452 or e-mail at (sspencer@gatewayct.edu).

ENGINEERING SCIENCE

Associate in Science

Leading to the School of Engineering at the University of Connecticut, University of New Haven, University of Hartford, Fairfield University or Central Connecticut State University.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 254	Calculus I	4
Scientific Knowledge & Understanding	SK	CHE* 121	General Chemistry I	4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Historical Knowledge/Understanding	HK	HIS* 101	Western Civilization I	3
Total General Education				23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Course Name	Credits
Gen Ed - SK	CHE* 121 General Chemistry I	4
EGR* 111	Introduction to Engineering	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 254 Calculus I	4
Gen Ed - SP	PSY* 111 General Psychology	3
	Total Semester Credits	17

Second Semester

Course #	Title	Credits
CHE* 122	General Chemistry II	4
MAT* 256	Calculus II	4
PHY* 221	Calculus Based Physics I	4
Elective	Restricted (see below)	3-4
	Total Semester Credit Hours	15-16

Third Semester

Course #	Title	Credits
EGR* 211	Engineering Statics	3
Gen Ed - HK	HIS* 101 Western Civilization I	3
MAT* 268	Calculus III: Multivariable	4
Gen Ed - CALT	PHL* 111 Ethics	3
PHY* 222	Calculus Based Physics II	4
	Total Semester Credit Hours	17

Fourth Semester

Course #	Title	Credits
EGR* 212	Engineering Dynamics	3
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
MAT* 285	Differential Equations	3
Elective	ART* 101, 102, or MUS* 101	3
Elective	Restricted (see below)	3-4
	Total Semester Credit Hours	15
	Total Credit Hours	64-66

Restricted Electives: ARC* 133, CAD* 108, CET* 110, CET* 116, CET* 124, ECN* 101

For more information, contact Susan Spencer, Program Coordinator at (203) 285-2452 or e-mail sspencer@gatewayct.edu.

TECHNOLOGY STUDIES

Associate in Science

Leading to the School of Technology at Central Connecticut State University and Charter Oak State College.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 186	Pre-Calculus	4
Scientific Knowledge & Understanding	SK	CHE* 121	General Chemistry I	4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Historical Knowledge	HK	HIS* 101	Western Civilization I	3
Total General Education				23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - HK	HIS* 101 Western Civilization I	3
Gen Ed - QR	MAT* 186 Precalculus	4
PHY* 121	General Physics I	4
Gen Ed - SP	PSY* 111 General Psychology I	3
	Total Semester Credit Hours	17

Second Semester

Course #	Title	Credits
CAD* 108	CAD Introduction	3
ECN* 101	Macroeconomics	3
Gen Ed - WC II	ENG* 102 Literature & Composition	3
PHY*122	General Physics II	4
MEC* 104	Mechanics - Statics	3
	Total Semester Credit Hours	16

Third Semester

Course #	Title	Credits
Gen Ed - SK	CHE* 121 General Chemistry I	4
COM* 171	Fundamentals of Human Communication	3
MAT* 167	Principles of Statistics	3
MEC* 265	Materials Science	4
Elective	ART* 101, ART* 102, or MUS* 101	3
	Total Semester Credit Hours	17

Fourth Semester

Course #	Title	Credits
CAD* 200	3D CAD Modeling	4
Gen Ed - CALT	PHL* 111 Ethics	3
Elective	GEO*, POL*, or HIS*	3
Electives	Restricted (see below)	6
	Total Semester Credit Hours	16
	Total Credit Hours	66

Restricted Electives: ARC* 133, BME* 110, 112, 114, 116, 210, 212, 214, 220, CAD* 126, CET* 110, 116, 120, 124, 126, 210, 220, CSC* 101, 110, 124, 150, 262, 263, CST* 133, 180, 181, 182, 183, 188, EET* 103, 110, 114, 136, 232, ENV* 110, 230, MEC* 104, 234, 240, 250, 265, 271, 283, MFG* 102, 108, 116, 204, 208, 210, 216,228. For more information, contact Susan Spencer, Program Coordinator at (203) 285-2452 or e-mail sspencer@gatewayct.edu.

COMPUTER SCIENCE

COMPUTER SCIENCE PROGRAM OUTCOMES

Upon the successful completion of all program requirements, the graduate should be able to:

- Identify the principal components of a computer system and describe their typical characteristics
- Solve problems and develop algorithms using control structure abstractions of sequence, selection, and repetition, following a disciplined approach
- Describe the social responsibilities of the computing professional and the impact of computing on society
- Discuss the organization of the Internet and demonstrate the ability to use various Internet tools
- Describe LAN topologies, protocols, transmission media, and access methods
- Analyze, design, code, test, and debug sophisticated and complex programs in two high-level languages using appropriate software design methodologies
- Design and query a relational database using Structured Query Language (SQL)

COMPUTER SCIENCE

Associate in Science

Students enrolled in the Computer Science Technology program receive a broad programming background, including training in C++, and any of the following restricted electives: Java, JavaScript, PHP, Python, Visual Basic, SQL and XHTML, microcomputer software packages and networking. Using industry-oriented applications, students have the opportunity to design, write, and test programs in a variety of programming languages. Furthermore, this program introduces networks that allow users to share hardware, software, and information. The Computer Science program allows students to design much of their technical curriculum based on their unique goals. Students may take a broad variety of courses or prepare for such specific technical careers as application programmers, programmer analysts, systems analysts, or systems programmers. For more information, call Stacy Walker, Program Coordinator, at (203) 285-2462 or email swalker@gatewayct.edu.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 115 or higher	Math for Science & Technology	3
Scientific Knowledge & Understanding	SK		Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3
Oral Communications	OC		Choose any course in Oral Communications	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CSA* 105 or CSC* 101	Introduction to Software Applications or Introduction to Computers	3
Gen Ed - QR	MAT* 115 Mathematics for Science & Technology (or higher)	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - OC	Choose one course in Oral Communication	3
Elective	Restricted (see below)	3-4
	Total Semester Credit Hours	15-16

Second Semester

Course #	Title	Credits
CSC* 215	Programming with Object Oriented C++	4
CST* 180 or CST* 133	Networking I or Networking Fundamentals I	4
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Elective	Restricted (see below)	3-4
	Total Semester Credit Hours	14-15

Third Semester

Course #	Title	Credits
CSC* 150	Database Applications & Design – Using SQL	4
Gen Ed - SP	Choose one course in Social Phenomena	3
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
Electives	Restricted (see below)	6-8
	Total Semester Credit Hours	16-18

Fourth Semester

Course #	Title	Credits
CSA* 296 or Restricted Elective	CWA – Computer Applications or Restricted Elective (see below)	3-4
CSC* 250	Systems Analysis and Design	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Electives	Restricted (see below)	6-8
	Total Semester Credit Hours	15-19
	Total Credit Hours	60-68

Restricted Electives— Any CSC* or CST* course

COMPUTER SCIENCE

Certificate

The Computer Science Certificate program provides students with requisite skills for entry-level positions. The program is especially suited to those who wish to gain more marketable or updated skills. For more information, call Stacy Walker, Program Coordinator, at (203) 285-2462 or email swalker@gatewayct.edu.

PROGRAM REQUIREMENTS

First Semester

Course #	Title	Credits
CSC* 101 or CSA* 105	Introduction to Computers or Introduction to Software Applications	3
CSC* 215	Programming with Object Oriented C++	4
CST* 152	Introduction to Web Page and Design	4
	Total Semester Credit Hours	11

Second Semester

Course #	Title	Credits
CST* 133 or CST* 180	Networking Fundamentals I or Networking I	4
CSC* 150	Database Applications & Design Using SQL	4
Electives	Restricted (see below)	6-8
	Total Semester Credit Hours	14-16
	Total Credit Hours	25-27

Restricted Electives: Any CSC* or CST* course

COMPUTER SCIENCE: DATA SECURITY SPECIALIST

Associate in Science

The Computer Science: Data Security Specialist will prepare students to be employed as specialists in I.T. data security. This program addresses the security specialist's everyday tasks of configuring, monitoring, and repairing areas with security breach potential. These tasks include data security, Internet security, network security, email security, client and server forensics, and security for databases and database users. Instruction in recognizing and intervening with malware is included as well.

COMPUTER SCIENCE DATA SECURITY SPECIALIST PROGRAM OUTCOMES

Upon the successful completion of all program requirements, graduates should be able to:

- Recognize security vulnerabilities for multiple types of networks and apply appropriate security hardware and software to network structures
- Practice the fundamentals of cryptography, data hiding/steganography, and forensics
- Identify malware, internal/external security attacks, and intervention procedures/protocols
- Employ the risk management model to identify forensically corporate threats and assess them in terms of their likelihood and impact
- Analyze the transmission infrastructure and client/server hardware and software that support the Internet
- Devise the framework for a generic security policy manual, identifying the items to be protected, the parties responsible, and a plan for response when a security breach is uncovered
- Formulate team dynamics and collaboration, particularly in relation to the functioning of critical incident response teams

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 175 or higher	College Algebra & Trigonometry	3
Scientific Knowledge & Understanding	SK		Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3
Oral Communications	OC		Choose any course in Oral Communications	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CSC* 101 or CSA* 105	Introduction to Computers or Introduction to Software Applications	3
CST* 133	Networking Fundamentals	4
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 175 College Algebra & Trigonometry	3
	Total Semester Credit Hours	16

Second Semester

Course #	Title	Credits
CST* 280	Network Security	3
CST* 284	Malware Intervention	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - OC	Choose one course in Oral Communications	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
	Total Semester Credit Hours	15-16

Third Semester

Course #	Title	Credits
CST* 285	Attacks and Counter Measures	3
CST* 287	Cryptography Fundamentals	3
Gen Ed - SP	Choose one course in Social Phenomena	3
Elective	Restricted 1 (see below)	3
Elective	Restricted 2 (see below)	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
CST* 196	Protocol Analysis	3
CST* 289	Cyber Forensics	3
CST* 215	Programming with Object Oriented C++	4
Elective	Restricted 3 (see below)	4
	Total Semester Credit Hours	14
	Total Credit Hours	60-61

Restricted Electives:

1 - CSC* 124, CSC* 257, CSC* 262, CSC* 263, CST* 152, CST* 259

2 - CSA* 140, CSC* 150

3 - CSC* 110, CSC* 124, CSC* 207, CSC* 208, CSC* 215, CSC* 223, CSC* 257, CST* 259

COMPUTER SCIENCE: MOBILE APPLICATION DEVELOPMENT

Associate in Science

The Computer Science Mobile Application Development program will enable students to develop skills in website and native app design, learn relevant programming languages for application development on a variety of smart-devices and learn the policies and practical application of current and emerging standards and technologies across multiple mobile devices For more information, call Stacy Walker, Program Coordinator, at (203) 285-2462 or email swalker@gatewayct.edu.

COMPUTER SCIENCE MOBILE APPLICATION DEVELOPMENT PROGRAM OUTCOMES

Upon the successful completion of all program requirements, graduates should be able to:

- Plan, design, code, test and debug solutions to programming problems using a variety of programming languages
- Gain an understanding of fundamental object-oriented programming concepts and principles, including encapsulation, inheritance, and polymorphism.
- Compare and contrast mobile platforms, their tools, and the development process
- Install software development kits for each mobile item platform
- Demonstrate understanding of the development cycle for mobile devices including building, testing, and deployment
- Create apps for Apple iOS, Google Android, and Microsoft Windows
- Create cross-platform web applications for mobile devices

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 115 or higher	Math for Science and Technology	3
Scientific Knowledge & Understanding	SK		Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3
Oral Communications	OC		Choose one course in Oral Communications	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CSC* 101 or CSA* 105	Introduction to Computers or Introduction to Software Applications	3
CSC* 262	Programming Mobile Devices I	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 115 Mathematics for Science and Technology (or higher)	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
CST* 180 or CST* 133	Networking I or Networking Fundamentals	4
CSC* 215	Programming with Object Oriented C++	4
CSC* 263	Programming Mobile Devices II	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - OC	Choose one course in Oral Communication	3
	Total Semester Credit Hours	17

Third Semester

Course #	Title	Credits
CSC* 150	Database Applications & Design Using SQL	4
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
Gen Ed - SP	Choose one course in Social Phenomena	3
Elective	Restricted (see below)	6-8
	Total Semester Credit Hours	16-18

Fourth Semester

Course #	Title	Credits
CSA* 296 or Restricted Elective	CWE - Computer Applications or Restricted Elective (see below)	3
CSC* 223	Introduction to JAVA Programming	3
CSC* 250	Systems Analysis and Design	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
	Total Semester Credit Hours	12-13
	Total Credit Hours	60-63

Restricted Electives - Any CSC* or CST* class

COMPUTER SCIENCE: NETWORKING OPTION

Associate in Science

The Computer Science: Networking Option allows students to focus on the specific knowledge, skills, and abilities identified and recommended by the computer network industry. The program will prepare students for the networking field, specifically focusing on certifications as Cisco Certified Network Associate (CCNA), or Network Administrator path. It is highly recommended that students consult with the Computer Science program coordinator for specific advising.

Network Administrator Path

This path takes you through the lower levels of networking mainly working with network devices such as switches, routers, server/client computers, server/client operating systems, printers, KVM switches, wireless devices, data backup devices, power backup devices, wire racks, patch panels, wall plates and network wiring. Students completing this path can earn a Gateway Community College certificate as well as be eligible to apply for the CompTIA Network+ certificate.

Cisco Path

This path takes you through the higher levels of networking mainly working with switches and routers, how to install, setup, configure and maintain them. Network basics are introduced along with switch and router information. Students completing this path can earn a Gateway Community College certificate as well as be eligible to apply for a Certified Cisco Network Engineer certificate by Cisco and the CompTIA Network+ certificate.

COMPUTER SCIENCE NETWORKING OPTION PROGRAM OUTCOMES

Upon the successful completion of all program requirements and the path chosen, graduates should be able to:

- Plan and install security
- Describe physical and logical topologies
- Describe all terminology used in networked environments
- Identify and describe the functions of each of the seven layers of the OSI reference model
- Describe the different classes of IP addressing and subnetting
- Identify the functions of the TCP/IP network layer protocols
- Configure IP addresses
- Describe LAN segmentation using bridges, routers, and switches
- Describe the benefits of network segmentation with bridges, routers, and switches
- Differentiate between the following WAN services: LAPB, frame Relay, ISDN/LAPD, HDLC, PPP, and DDR
- Identify ISDN protocols, function groups, reference points, and channels Install, manage, and troubleshoot Client software

COMPUTER SCIENCE NETWORK ADMINISTRATOR PATH PROGRAM OUTCOMES

Upon the successful completion of all program requirements, graduates should be able to:

- Install, manage and troubleshoot Client software
- Install, manage and troubleshoot Server software
- Organize and maintain Windows 2000 Servers and Netware Servers
- Set up and manage user accounts
- Install and configure directory services
- Back up and restore data
- Install, configure, and maintain network printers
- Install and access remote connectivity

COMPUTER SCIENCE CISCO PATH PROGRAM OUTCOMES

- Examine router elements (RAM, ROM, CDP, show)
- Log into a router in both user and privileged modes
- Enable the Novell IPX protocol and configure interfaces
- Describe the features and benefits of Fast Ethernet
- List commands to configure Frame Relay LMIs, maps, and subinterfaces
- Configure switches and routes for network functions

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 175 or higher	College Algebra & Trigonometry	3
Scientific Knowledge & Understanding	SK		Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3
Oral Communications	OC		Choose any course in Oral Communications	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CSC* 101	Introduction to Computers	3
CST* 180 or CST* 133	Networking I or Networking Fundamentals	4
Gen Ed - QR	MAT* 175 College Algebra & Trigonometry (or higher)	3
Gen Ed - WC I	ENG* 101 Composition	3
	Total Semester Credit Hours	13

Second Semester

Course #	Title	Credits
CSC* 215	Programming with Object Oriented C++	4
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - OC	Choose one course in Oral Communication	3
Electives	Restricted (see below)	6
	Total Semester Credit Hours	16

Third Semester

Course #	Title	Credits
CSC* 150	Database Applications & Design Using SQL	4
Gen Ed - SP	Choose one course in Social Phenomena	3
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
Elective	Restricted (see below)	3
Elective	Restricted (see below)	4
	Total Semester Credit Hours	17

Fourth Semester

Course #	Title	Credits
CSA* 296 or Restricted Elective	CWE - Computer Applications or Restricted Elective	3 - 4
CSC* 250	Systems Analysis & Design	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS* PHY*	3-4
Elective	Restricted (see below)	4
	Total Semester Credit Hours	14-15
	Total Credit Hours	60-61

Restricted Electives: CST* 127, 133, 196, 234, 273, 280, 284, 285, 287, and 289

COMPUTER SCIENCE

Certificate - Networking

The objective of the Computer Science Networking Certificate is to help meet the growing need for qualified networking specialists in the Greater New Haven area. This Certificate will allow students to focus on the specific knowledge, skills and abilities that have been identified and recommended by the computer industry. Upon successful completion, the graduating student will leave Gateway Community College with the ability and knowledge to pass three industry -recognized networking examinations: Certified Cisco Network Engineer; Network+; and Novell Certified Network Administrator. For more information, call Stacy Walker, Program Coordinator, at (203) 285-2462 or email swalker@gatewayct.edu.

PROGRAM REQUIREMENTS

Course #	Title	Credits
CSC* 101 or CSA* 105	Introduction to Computers or Introduction to Software Applications	3
CST* 180	Networking I	4
CST* 181	Networking II	4
CST* 182	Networking III	4
CST*183	Networking IV	4
Electives	Restricted (see below)	3-4
	Total Credit Hours	22-23

Restricted Electives: CST* 127, 133, 196, 234, 273, 280, 284, 285, 287, and 289

COMPUTER SCIENCE

Certificate - Networking Administrator

The objective of the Computer Science Network Administrator Certificate is to prepare students for an entry-level position in information technology as a Network Administrator. This certificate addresses the network administrator's day to day tasks of installation, equipment setup, hardware and software configuration, and the maintenance of users and groups, and other network resources on a domain network system. Students can be eligible for the CompTIA Network + certificate.

PROGRAM REQUIREMENTS

Course #	Title	Credits
CSC* 101	Introduction to Computers	3
CST* 127	Server Operating System	4
CST* 133	Networking Fundamentals I	4
CST* 149	Computer Network Hardware	4
CST*188	Networking Fundamentals II	4
CST* 273	Security Management Practices	3
	Total Credit Hours	22

DRUG AND ALCOHOL RECOVERY COUNSELOR

DRUG AND ALCOHOL RECOVERY COUNSELOR MISSION STATEMENT

To prepare students to enter the field of alcohol and drug recovery counseling. The program provides students with a strong general education and a solid foundation in: counseling theories and techniques, ethical practice, knowledge of multicultural aspects of working with clients, and critical thinking skills. Students learn how to provide care and treatment to those suffering from substance use disorders. The DARC program seeks to meet the workforce development needs of addiction treatment providers.

DRUG AND ALCOHOL RECOVERY COUNSELOR

Associate in Science

The Drug and Alcohol Recovery Counselor (DARC) program educates and trains individuals who seek State of Connecticut certification, employment, job advancement, and increased effectiveness in the field of addictions counseling.

The DARC curriculum provides a balanced program of general education and addiction-specific courses. The combination of courses will challenge students to develop into critical thinkers capable of approaching problems from a variety of viewpoints. The addiction-specific courses are designed to give students a sound foundation in the theories and the science of addiction studies with a disciplined background in: the biopsychosocial disease process of addiction, environmental and familial risk factors, evidence-based treatment models, public health issues, Recovery Model, the counselor code of ethics, and cultural competency. Throughout the DARC program, students are offered a unique combination of traditional classroom work and experiential learning and practice. Students have the opportunity to apply their learning during a two semester (DAR* 251 and DAR* 252 consecutive) internship*.

Students who complete the DARC courses will have met all current Connecticut Certification Board educational training requirements in preparation for becoming a Certified Addiction Counselor and for State of Connecticut credentialing as a drug and alcohol counselor. In addition to the DARC course work, the state of Connecticut requires students to accrue work hours in the field of addiction counseling in order to be eligible to sit for the certification exam (administered by the Connecticut Certification Board).

Acceptance into the Internship (DAR* 251 and 252) portion of the program is selective and requires a formal application, interview and screening process that is separate from general admission to the College. Completion of DAR* 101, DAR* 111, DAR* 158, and DAR* 112 is required before applying to the Internship. The program courses, DAR* 101, 111, 112, 114, 117, 119, 158, 212, and 220 are available to any student who wishes to enroll; however, students are urged to seek guidance from the program coordinator.

*During the Internship year, students are required to carry malpractice liability insurance (the average yearly cost is \$15). Students will be billed separately for this coverage and will be asked to pay the premium at the time of registration.

Professional practice for addiction counselors is based on eight practice dimensions, each of which is necessary for effective performance of the counseling role.

A counselor's success in carrying out a practice dimension depends on his or her ability to attain the competencies underlying that component. Each competency, in turn, depends on its own set of knowledge, skills, and attitudes. For an addiction counselor to be truly effective, he or she should possess the knowledge, skills, and attitudes associated with each competency that are consistent with the counselor's training and professional responsibilities. (Center for Substance Abuse Treatment. Addiction Counseling Competencies: The Knowledge, Skills, and Attitudes of Professional Practice. Technical Assistance Publication (TAP) Series 21. HHS Publication No. (SMA) 15-4171. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2006)

The eight practice dimensions are as follows:

1. Clinical Evaluation
 - a. Screening
 - b. Assessment
2. Treatment Planning
3. Referral
4. Service Coordination
 - a. Implementing the Treatment Plan
 - b. Consulting
 - c. Continuing Assessment and Treatment
5. Counseling
 - a. Individual counseling
 - b. Group counseling
 - c. Counseling Families, Couples, and Significant Others
6. Client, Family, and Community Education
7. Documentation
8. Professional and Ethical Responsibilities

For more information, contact the Program Coordinator, Cher Shannon, at (203) 285-2321 or e-mail at cshannon@gatewayct.edu.

DRUG AND ALCOHOL RECOVERY COUNSELOR PROGRAM OUTCOMES

Upon completion of all program requirements, graduates should be able to:

- Perform the skills of a recovery counselor in a cross-cultural setting as defined by the Eight Practice Dimensions of an Addiction Counselor
- Practice and apply the code of ethics
- Successfully complete the certification process demonstrating competency in the theoretical sciences of the recovery field
- Apply principles of literacy and information technology to enhance the functions of recovery counseling.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK	BIO* 110	Principles of the Human Body	3
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
DAR* 101	Public Health Issues: Abuse & Addiction	3
DAR* 111	Addiction Counseling I	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - CALT	PHL* 111 Ethics	3
Gen Ed - SP	PSY* 111 General Psychology I	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
DAR* 112	Group Counseling: Theory & Techniques	3
DAR* 158	Biology of Addiction	3
DAR* 213	Addiction Counseling II	3
PSY* 245	Abnormal Psychology	3
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
DAR* 251	Counseling Internship I +	6
Elective	Restricted - DARC (see below)	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
DAR* 252	Counseling Internship II	6
Gen Ed - SK	BIO* 110 Principles of the Human Biology	3
Gen Ed	Choose one course in AD, HK, or SR	3-4
Elective	Open (seek advising from Program Coordinator for the most appropriate options)	3
	Total Semester Credit Hours	15-16
	Total Credit Hours	60-61

Admission to the Counseling Internship (DAR* 251 & 252) is selective, based on a rigorous admission process after successful completion of the DARC core courses with a "C" or better.

Restricted Electives - DAR* 114, 117, 119, 212, 220

DRUG AND ALCOHOL RECOVERY COUNSELOR

Certificate

This certificate program prepares students to take the certification exam used by the state of Connecticut (administered by the Connecticut Certification Board) for credentialing as an addiction counselor. This program is ideal for students who are already working in the field of addiction treatment, are receiving credentialed clinical supervision, and would like to be on a fast track for state certification. This program is also beneficial to those who hold advanced degrees (in counseling, social work, or a related field) and who would like to supplement their expertise, effectiveness, and marketability and become eligible for state of Connecticut licensure as an alcohol and drug counselor.

After completing the certificate program, students will have completed all of the substance abuse specific training required to be eligible to sit for the certification exam. Students will have concurrently achieved nearly half of the requirements for an associate degree in Drug and Alcohol Recovery Counseling. Typically, students earn the certificate on their way to completing the associate degree. For more information, contact the Program Coordinator, Cher Shannon, at (203) 285-2321 or e-mail at (cshannon@gatewayct.edu).

PROGRAM REQUIREMENTS

First Semester

Course #	Title	Credits
DAR* 101	Public Health Issues: Abuse & Addiction	3
DAR* 111	Addiction Counseling I	3
ENG* 101	Composition	3
	Total Semester Credit Hours	9

Second Semester

Course #	Title	Credits
DAR* 112	Group Counseling: Theory & Techniques	3
DAR* 158	Biology of Addiction	3
DAR* 213	Addiction Counseling II	3
Elective	Restricted	3
	Total Semester Credit Hours	12
	Total Credit Hours	21

Restricted Electives - DAR* 114, 117, 119, 212, 220

EARLY CHILDHOOD EDUCATION

EARLY CHILDHOOD EDUCATION

Associate in Science

The Early Childhood Education Program has earned Accreditation from the National Association for the Education of Young Children (NAEYC). An Associate degree and three certificate options are available in the Early Childhood Education program. The Early Childhood Education associate degree program is validated under the Connecticut Early Childhood Education Articulation Plan. Graduates of the associate degree program are eligible for admission as articulation students to any of the state's participating baccalaureate institutions which offer Early Childhood Education Teacher Certification programs; in the University of Connecticut's Human Development and Family Relations major; or in Charter Oak State College's child studies concentration. In addition, any graduate of Gateway Community College Early Childhood Education Program from 2008 on is eligible to apply for the Early Childhood Teacher Credential (ECTC). The ECE program at GCC is an approved degree program for both Infant/Toddler and Preschool endorsements.

The terms for credit award and student eligibility vary under each option. However, in general, students must meet the following eligibility requirements:

- Be a graduate from a validated associate degree program in Early Childhood Education in Connecticut
- Meet specific admissions requirements of the college or university into which transfer is being sought
- Complete all Early Childhood Education associate degree courses with a grade of "C" or better and meet the college's or university's requirements for transfer of general education
- Complete all Early Childhood Education associate degree student teaching with a grade of "C" or better in a center accredited by the National Association for the Education of Young Children (NAEYC)
- Furthermore, if a student is seeking to transfer into an Early Childhood Education Teacher Certification program, it is strongly recommended that, prior to transfer, she or he possess the following state certification requirements:
- A score of 1,100 or better on the SAT (test date on or after April 1, 1995), or the passing of Praxis Core Academic Skills Test
- A 2.7 grade point average if seeking admission to a teacher certification education program in Connecticut.

For more information, email the Early Childhood Education Program Coordinator, Carmelita Valencia-Daye at CValencia-Daye@gatewayct.edu. For scholarship information, contact the Connecticut Office of Early Childhood/CT Charts a Course website <http://ctcharts.org> or call 1 800 832-7784.

EARLY CHILDHOOD EDUCATION PROGRAM OUTCOMES

"The 2010 National Association for the Education of Young Children (NAEYC) Standards for Initial and Advanced Early Childhood Professional Preparation Programs describe what early childhood professionals are expected to know and do". These Standards provide the basis for the Early Childhood Education Program at Gateway Community College. Upon successful completion of the program requirements, students are prepared to:

Standard 1: Promoting Child Development and Learning

Students prepared in early childhood degree programs are grounded in a child development knowledge base. They use their understanding of a) young children's characteristics and needs, and b) multiple interacting influences on children's development and learning, to c) create environments that are healthy, respectful, supportive, and challenging for each child.

Standard 2: Building Family and Community Relationships

Students prepared in early childhood degree programs understand that successful early childhood education depends upon partnerships with children's families and communities. They a) know about, understand, and value the importance and complex characteristics of children's families and communities. They use this understanding to b) create respectful, reciprocal relationships that support and empower families, and c) to involve all families in their children's development and learning.

Standard 3: Observing, Documenting, and Assessing to Support Young Children and Families

Students prepared in early childhood degree programs understand that child observation, documentation, and other forms of assessment are central to the practice of all early childhood professionals. They a) know about and understand the goals, benefits, and uses of assessment. They b) know about and use systematic observations, documentation, and other effective assessment strategies c) in a responsible way, d) in partnership with families and other professionals, to positively influence the development of every child.

Standard 4: Using Developmentally Effective Approaches

Students prepared in early childhood degree programs understand that teaching and learning with young children is a complex enterprise, and its details vary depending on children's ages, characteristics, and the settings within which teaching and learning occur. They a) understand and use positive relationships and supportive interactions as the foundation for their work with young children and families. Candidates b, c) know, understand, and use a wide array of developmentally appropriate approaches, instructional strategies, and tools to connect with children and families and d) positively influence each child's development and learning.

Standard 5: Using Content Knowledge to Build Meaningful Curriculum

Students prepared in early childhood degree programs a) use their knowledge of academic disciplines to design, implement, and evaluate experiences that promote positive development and learning for each and every young child. Candidates understand the importance of developmental domains and academic (or content) disciplines in early childhood curriculum. They b) know the essential concepts, inquiry tools, and structure of content areas, including academic subjects, and can identify resources to deepen their understanding. Candidates c) use their own knowledge and other resources to design, implement, and evaluate meaningful, challenging curriculum that promotes comprehensive developmental and learning outcomes for every young child.

Standard 6: Becoming a Professional

Students prepared in early childhood degree programs a) identify and conduct themselves as members of the early childhood profession. They b) know and use ethical guidelines and other professional standards related to early childhood practice. They c) are continuous, collaborative learners who demonstrate knowledgeable, reflective and critical perspectives on their work, making informed decisions that d) integrate knowledge from a variety of sources. They are e) informed advocates for sound educational practices and policies.

Standard 7: Early Childhood Field Experiences

Students have field experiences and clinical practice in a) at least two of the three early childhood age groups (birth – age 3, 3 through 5, 5 through 8 years) and in b) the variety of settings that offer early education (early school grades, child care centers and homes, Head Start programs).

In addition, "the Supportive Skills support associate degree students' ability to gain competence in relation to the core standards. With these skills, students are better able to make use of learning opportunities provided by the program and progress in a career as an early childhood professional."

SUPPORTIVE SKILL 1: Self-assessment and self-advocacy

SUPPORTIVE SKILL 2: Mastering and applying foundational concepts from general education

SUPPORTIVE SKILL 3: Written and verbal skills

SUPPORTIVE SKILL 4: Making connections between prior knowledge/ experience and new learning

SUPPORTIVE SKILL 5: Identifying and using professional resources

Conceptual Framework of the Early Childhood Education Program at Gateway Community College**Vision Statement**

The vision of the Early Childhood Program at Gateway Community College is to prepare well qualified teachers who understand how children learn; can plan and implement developmentally and individually appropriate learning experiences that are aligned to standards and are based on knowledge of individual children (typical and atypical) from diverse cultural backgrounds, and can plan within and across disciplines, taking into account the family, the community and curricular goals and objectives.

Mission Statement

The mission of the Early Childhood Education Program is to provide a comprehensive curriculum that enables students to seek employment in the field of Early Education and Care, working with children from diverse backgrounds; to transfer to a baccalaureate program to continue their training in Early Childhood Education; or to increase their skills in working with young children.

Program Philosophy

The early childhood education program at Gateway Community College adopts a philosophy that includes a perspective about how learning occurs and how the teaching act influences learning. The program's philosophy stresses the importance of preparing dedicated and skilled professionals to work in the learning community knowing diverse theories not limited to the views of Piaget, Dewey, Vygotsky, Erickson and Montessori.

The program recognizes the responsibility of the teacher to deal with each student as an individual, value diversity, and recognize that the student's behavior is a direct reflection of his or her life experiences.

In keeping with the Institution's and program's mission, the Early Childhood Education program holds the following principles and strives to foster them in its students:

- When active engagement accompanies learning opportunities, learning is at its best.
- When content is connected to the real world, learning is facilitated.
- Critical thinking, reflection, and problem solving are prized and encouraged.
- Multiple measures of assessment provide a well-rounded insight of the learner's construction of knowledge.
- Knowing and understanding the families of children and the communities in which they live is key to enhancing a child's development and learning and paramount to involving families and communities.
- Cultural diversity of the family and the developmental diversity of the child must be understood and appreciated.
- Utilization of multiple learning modalities addresses a variety of learning styles.

The Early Childhood Program offers a Child Development Associate Preparation Certificate, a one-year Teacher Assistant Certificate, an Administration and Leadership Certificate and an Associate Degree with an option of Continued Studies (transfer) or Early Childhood (career).

Preparing adult learners to work in diverse and multicultural setting and have the skills to implement developmentally appropriate teaching practices is a principal component of the program. The program requires a sequence of observation and teaching practices to prepare students who understand child development and can effectively work with children.

In keeping with the College's mission the early childhood courses and programs are widely accessible to students, many of whom are working full-time, via a variety of delivery systems. Flexibility of course offerings and responding to the needs of the early childhood workforce are primary. The program continually seeks opportunities to provide students with tuition free courses by responding to alternative funding opportunities and forming alliances with local and statewide agencies.

Course delivery formats include (1) traditional classroom format, (2) on-line courses (3) accelerated courses in one week to five week formats, (4) an accelerated degree such as a plan developed to offer the complete degree on a part-time basis over a 36 month period and the fast track offering of certificates that students could complete within 11 weeks. The Child Development Preparation Certificate is offered on-line. To enhance student's success in course work, Learning Communities, collaboration between the Early Childhood faculty member and the developmental Reading and English, faculty member are being developed.

Professional Commitments

The Early Childhood Program has a strong commitment to diversity and reflects as much as possible the culture and language of the students and community that it serves. Additionally, faculty members have formed collaboration with the Learning Disabilities Specialist in order to incorporate students with special needs into the program. Frequent offering of courses at the worksite enhance accessibility for students. Responding to the needs of the workforce is paramount.

Community Connections

Community responsiveness is a key component of the program. Outreach into the community is evidenced by the creation of the Early Learning Center and the Accreditation Facilitation Project that assists centers with NAEYC Accreditation and expands the availability of high quality field placements for observation and student teaching. The Early Learning Center, a 60 child NAEYC Accredited community early care and education facility, is an on site laboratory school that serves as a model of best practices and is a field placement site for observation students and student teachers.

EARLY CHILDHOOD EDUCATION CAREER PATH**Associate in Science****GENERAL EDUCATION REQUIREMENTS**

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Aesthetic Dimension Historical Knowledge Oral Communication Scientific Reasoning	AD HK OC SR		Choose one course in AD, HK, OC, or SR	3
Total General Education				21-22

++ Math Elective: Generally, students are advised to take MAT* 137 since it is a prerequisite for MAT* 143 and MAT* 144 which are required for Teacher Certification Programs.

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
ECE* 101	Introduction to Early Childhood Education	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - SP	PSY* 111 General Psychology	3
PSY* 122	Child Growth and Development	3
Ged Ed	Choose one course in AD, HK, OC, or SR	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
ECE* 231	Early Language and Literacy	3
ECS* 107	Introduction to Exceptional Children Seminar I	3
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
Elective	ECE Restricted (see below)	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
ECE* 210	Observation, Participation, and Seminar	3
Gen Ed - CALT	PHL* 111 Ethics	3
SOC* 111	Child, Family, School and Community	3
Gen Ed - SK	Choose one course in BIO*, EAS*, EVS* or PHY*	3
Elective	ECE Restricted Elective (see below)	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
ECE* 176	Health, Safety, and Nutrition	3
ECE* 295	Student Teaching	6
Elective	ECE Restricted Elective (see below)	6
	Total Credit Hours	15
	Total Program Credits	60

ECE Restricted Electives: ECE* 103, 106, 109, 110, 141 (required for ECTC Infant/Toddler Endorsement), ECE* 142, 180, 181, 206, 212, 213, 241 (required for the ECTC Infant Toddler Endorsement), ENG* 114, PSY* 214.

CONTINUED STUDIES - TRANSFER PATH

This path is designed for students who plan to transfer to a four year institution for further study towards the ECE Teacher Certification. It also prepares you with the appropriate academics and practicum necessary for a career in Early Childhood. Since the amount of transfer credit varies from one institution to another, students are advised to consult the catalog from the four year colleges under consideration.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Aesthetic Dimension Historical Knowledge Oral Communication Scientific Reasoning	AD HK OC SR		Choose one course in AD, HK, OC, or SR	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - SP	PSY* 111 General Psychology I	3
PSY* 122	Child Growth and Development	3
ECE* 101	Introduction to Early Childhood Education	3
Gen Ed -	Choose one course in AD, HK, OC, or SR	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
ECE* 107	Introduction to Exceptional Children I	3
ECE* 231	Early Language and Literacy	3
Elective	Open	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
Gen Ed - CALT	PHL* 111 Ethics	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
HIS* 201	U.S. History I	3
ECE* 210	Observation, Participation and Seminar	3
SOC* 111	Child, Family, School and Community	3
	Total Semester Credit Hours	15-16

Fourth Semester

Course #	Title	Credits
ECE* 295	Student Teaching	6
Electives	Open	9
	Total Semester Credit Hours	15
	Total Credit Hours	60-61

Students are advised to consult the catalog of the transferring institution for appropriate choices.

ADMINISTRATION AND LEADERSHIP

Certificate

Provides specialized college-level course work in administration, leadership, and management to parallel the competency and training requirements needed to obtain the Connecticut Director's Credential (CDC) which is issued through Charter Oak State College to applicants who have successfully met requirements necessary to obtain the credential at a specific level.

Course #	Title	Credits
ECE* 206	Administration and Supervision of Early Childhood Programs	3
ECE* 212	Leadership in Early Childhood Programs	3
ECE* 213	Finance for Early Childhood Programs	3
SOC* 111	Child, Family, School and Community	3
BMG* 200	Human Resources Management	3
	Total Credit Hours	15

CHILD DEVELOPMENT ASSOCIATE CREDENTIAL

Certificate

The Child Development Associate Credential (CDA) is a national credentialing program that focuses on the skills of early care and education professionals; it is a performance-based assessment of childcare staff, home visitor, and family child care provider. The Child Development Associate Credential is designed for individuals who wish to obtain a Child Development Associate (CDA) through the Council for Early Childhood Professional Recognition Credentialing Process.

Gateway Community College offers the courses that will provide students with the required 120 clock hours of education for the credentialing process. Credits earned as part of this program can be applied to the Early Childhood Education Teacher Assistant certificate and degree programs.

PROGRAM REQUIREMENTS

Course #	Title	Credits
PSY* 122	Child Growth and Development	3
ECE* 101	Introduction to Early Childhood Education	3
ECE* 180	Child Development Associate Credential	3
	Total Credit Hours	9

For more information, email the Early Childhood Education Program Coordinator, Carmelita Valencia-Daye at cvalencia-Daye@gatewayct.edu. For scholarship information, contact the Connecticut Office of Early Childhood/Connecticut Charts-A-Course, visit the website at <http://ctcharts.org> or call (800) 832-7784.

The New Credentialing process for the Child Development Associate (CDA) Credential as of June 2013 is as follows:

Step 1: Any time before application:

- Minimum of high school diploma/GED or enrolled in a high school career and technical education program.
- 120 hours of education in 8 subject areas

Step 2: Within three years before application

- 480 hours experience

Step 3: Within six months before application

Requirements:

- Professional Portfolio (PP) completed by the Candidate
- Family questionnaires (FQ) gathered by the Candidate

Step 4: Application

- Candidate sends to the Council: Application and Fee
- Candidate receives approval that application is complete and fee has been processed

Step 5: Within 6 months of Council approval and completed application

- Verification Visit conducted by CDA Professional Development specialist
- Candidate takes CDA Exam at a local PearsonVUE testing center

Step 6: After Verification Visit and CDA Exam

- Professional Development Specialist sends Verification Visit scores to the Council online
- PearsonVUE sends exam scores to the Council online

Council awards or denies Credential

For more information, visit <http://www.cdacouncil.org>

TEACHER ASSISTANT

Certificate

This program prepares students to be assistant teachers and teacher aides in the early education and care profession. The program also provides training for individuals already employed in a preschool situation who desire to improve their knowledge and competency in working with children.

Students who complete this program are qualified to assist teachers in all aspects of professional childcare and to guide and supervise individual and group activities. Graduates may also transfer into the Early Childhood Education program leading to the Associate in Science degree. For more information, e-mail the Program Coordinator, Carmelita Valencia-Daye, at CValencia-Daye@gatewayct.edu.

PROGRAM REQUIREMENTS

Course #	Title	Credits
PSY* 122	Child Growth and Development	3
ECE* 101	Introduction to Early Childhood Education	3
ECE* 210	Observation, Participation and Seminar	3
ECS* 107	Introduction to Exceptional Children I	3
ENG* 101	Composition	3
SOC* 111	Child, Family, School and Community	3
Electives	ECE Restricted*	9
	Total Credit Hours	30

ECE Restricted Electives: ECE* 103, 106, 109, 110, 141, 176, 180, 181, 205, 206, 241, ENG* 114, ECS* 112, PSY* 214

EARLY CHILDHOOD SPECIAL EDUCATION

Associate in Science

The Early Childhood Special Education Associate in Science degree program provides students with both theoretical knowledge and practical skills. Graduates should be able to screen and identify the unique needs of preschoolers and their families and define early intervention services needed to address those unique needs. The graduate will be able to describe and plan a flexible, interactive curriculum for preschoolers with disabilities in the regular classroom. This program will familiarizes students with major laws affecting special education.

The Early Learning Center at the Downtown Campus, along with preschool programs in the Greater New Haven area, offer laboratory facilities to students. One associate degree and one certificate option is available in the Early Childhood Special Education program. Courses taken as part of either program can be transferred to any of Connecticut's participating baccalaureate institutions that offer Early Childhood Education Teacher Certification programs: University of Connecticut's Human Development and Family Relations major and Charter Oak State College's Child Studies concentration. The terms for credit award and student eligibility vary. However, in general, students must meet the following transfer eligibility requirements:

Be a graduate from a validated associate degree program in Early Childhood Education in Connecticut

Meet specific admission requirements of the college or university into which transfer is being sought

Complete all associate degree Early Childhood Special Education courses with a grade of "C" or better and meet the college's or university's requirements for transfer of general education

Complete all associate degree Early Childhood Education student teaching with a grade of "C" or better in a center accredited by the National Association for the Education of Young Children (NAEYC)

Furthermore, if a student wishes to transfer into an Early Childhood Education Teacher Certification program, it is strongly recommended that, prior to transfer, he or she demonstrate the following state certification requirements:

A score of 1000 or better on the SAT, successful completion of the Praxis I examination, or have initiated the process of taking the Praxis I examination

A 2.7 grade point average if seeking admission to a teacher certification education program in Connecticut

For more information, call the Early Childhood Special Education Program Coordinator, Dr. Earnestine B. Kirkland, at (203) 285-2189 or e-mail at (ekirkland@gatewayct.edu). For scholarship information, contact CT Charts-a-Course at (800) 832-7784.

EARLY CHILDHOOD SPECIAL EDUCATION PROGRAM OUTCOMES

Upon completion of all program requirements, graduates should be able to:

- Differentiate between Early Childhood Education and Early Childhood Special Education (ECSE)
- Know the historical and philosophical bases for ECSE
- Create his or her own philosophy of ECSE
- Identify and explain the laws that mandate services for children with special needs
- Explain why ECSE programs are publicly funded
- Identify and explain the following planning plans used in ECSE: the Individualized Family Services Plan (IFSP) and the Individualized Education Plan (IEP)
- Examine the eligibility requirements for families under the above plans
- Explain and discuss the historical and constitutional foundations of the laws, regulations, major provision of PL 94-142 and its amendments, and other Acts
- Examine laws, regulations, and court decisions to explain the purposes of ECSE programs and the parental rights to dispute with ECSE program staff
- Plan adaptive two- and three-dimensional art activities and integrate them with other subject areas using common materials and emphasizing process over product
- Identify, explain, describe, classify, and give causes and characteristics of typical child growth and development

- Recognize such aspects of exceptionalities as: attention deficit hyperactivity disorder (ADHD), communication disorders, mental retardation, emotional and behavioral disorders, learning disabilities, visual and hearing impairments, physical disabilities, and giftedness
- Understand health and safety issues related to young children with special needs
- Dispel the myths and assumptions about dysfunction
- Understand the rationale and strategies for involving parents and families in the screening, assessment, education programming, and placement of their child
- Participate in student teaching to apply theoretical teaching techniques
- Observe and record children's behavior to gain insight into why they act as they do
- Teach effectively, as evaluated by supervising teachers and college faculty
- Be able to examine their own behavior, values, sensitivities, and knowledge before attempting to analyze the child's behavior in detail or develop an intervention plan
- Identify the theorists and define and explain the current theoretical approaches to modifying a child's behavior
- Use step-by-step guidance techniques and workable methods for dealing effectively with children's behavior
- Identify and effectively analyze a child's behavior and select the simplest and most obvious strategy to effect change
- Discuss curricula appropriate for different exceptionalities
- Plan and write effective curricula, lesson plans, and IEPs that include goals, objectives, and strategies to effect change in children with special needs
- Understand the importance of working cooperatively with other staff members, professionals, and parents to form an effective team
- Be sensitive to culturally diverse populations and plan curricula that are authentic and culturally appropriate

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra	3
Scientific Knowledge & Understanding	SK		Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	PHL* 101 or PHL* 111	Introduction to Philosophy or Ethics	3
Historical Knowledge	HK	Choose one	Choose one course in AD, HK, OC, or SR	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
ECS* 107	Introduction to Exceptional Children I	3
ECS* 112	Introduction to Early Childhood Special Education I	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - SP	PSY* 111 General Psychology I	3
Elective	Restricted (see below)	3
	Total Credit Hours	15

Second Semester

Course #	Title	Credits
ECS* 207	Introduction to Exceptional Children II	3
PSY* 122	Child Growth and Development	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - QR	MAT* 137 Intermediate Algebra (or higher)	3
Gen Ed - SK	BIO* 105 Introduction to Biology or BIO* 110 Principles of the Human Body	3-4
	Total Credit Hours	15-16

Third Semester

Course #	Title	Credits
ECE* 231	Early Language and Literacy Development	3
MAT* 143	Math for Elementary Education	3
PSY* 105	Group Dynamics	3
PSY* 258	Behavior Modification	3
Gen Ed	Choose one course in AD, HK, OC, SR	3
	Total Credit Hours	15

Fourth Semester

Course #	Title	Credits
ECS* 230	Student Teaching Special Education	6
Gen Ed - CALT	PHL* 101 Introduction to Philosophy or PHL* 111 Ethics	3
Electives	Restricted (see below)	6
	Total Credit Hours	15
	Total Program Credit Hours	60-61

Restricted Electives: ECE* 103, 109, 121, 141, 142, 206, ECS* 123, ENG* 114, PSY* 245, SOC* 111

EARLY CHILDHOOD SPECIAL EDUCATION

Certificate

The Early Childhood Special Education Certificate program provides students with both theoretical knowledge and practical skills. Graduates are able to screen and identify the unique needs of preschoolers and their families and define early intervention services needed to address those unique needs. The graduate can describe and plan a flexible, interactive curriculum for preschoolers with disabilities in the regular classroom. This program familiarizes students with laws affecting special education. For more information, call the Early Childhood Special Education Program Coordinator, Dr. Earnestine B. Kirkland, at (203) 285-2189 or e-mail at (ekirkland@gatewayct.edu).

PROGRAM REQUIREMENTS

Course #	Title	Credits
ECS* 107	Introduction to Exceptional Children: Seminar I	3
ECS* 112	Introduction to Early Childhood Special Education	3
PSY* 122	Child Growth and Development	3
ENG* 101	Composition	3
	Total Semester Credits	12

Course #	Title	Credits
ESC* 207	Introduction to Exceptional Children II	3
ESC* 230	Student Teaching Special Education	6
PSY* 258	Behavior Modification	3
Elective	Restricted (see below)	3
	Total Semester Credits	15
	Total Credits	27

Restricted Electives (choose one from the following): ECE* 103, 106, 109, 206, ECS* 225, ENG* 114, SOC* 111 or SPA* 101

FAMILY SUPPORT AND RESPITE CARE

Certificate

The Early Childhood Special Education Family Support and Respite Care Certificate will provide students in ECSE and health care providers with another option in Early Childhood Special Education.

FAMILY SUPPORT AND RESPITE CARE CERTIFICATE PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates will be able to:

- Use theoretical knowledge and practical skills to work effectively with and provide respite care for families on a planned or emergency basis, either at home or in the community.

PROGRAM REQUIREMENTS

Course #	Title	Credits
ECE* 121	First Aid, CPR and Medication Administration	1
ECE* 123	Introduction to Family Support and Respite Care	4
ECS* 107	Introduction to Exceptional Children: Seminar I	3
PSY* 105	Group Dynamics	3
	Total Credit Hours	11

INFANT AND TODDLER DEVELOPMENT

Certificate

The Early Childhood Special Education Infant and Toddler Development certificate program prepares students to care for and teach infants and toddlers from birth to age three.

INFANT AND TODDLER DEVELOPMENT CERTIFICATE PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates will be able to:

- Use theoretical knowledge and practical skills to work effectively with infants and toddlers in preschool settings or institutions in the Greater New Haven community.

PROGRAM REQUIREMENTS

Course #	Title	Credits
ECS* 107	Introduction to Exceptional Children: Seminar I	3
ECS* 225	Diagnostic Assessment of Children with Special Needs	3
ECS* 226	Curriculum for Exceptional Children: Seminar I	3
ECS* 228	Field Observation in Special Education I	3
ECE* 141	Infant and Toddler Growth and Development	3
ECE* 142	Developmental Interventions for Infants and Toddlers	3
ECE* 241	Methods and Techniques for Infant/Toddler	3
Electives	See Below	6-8
	Total Credit Hours	27-29

Electives:

Course #	Title	Credits
ECE* 121	First Aid, CPR and Medication Administration	1
ECE* 123	Introduction to Family Support and Respite Care	4
ECE* 180	CDA Credential Preparation	3
ECS* 112	Introduction to Early Childhood Special Education	3
ECS* 113	Creative Art/Play for Exceptional Children	3
ECS* 207	Introduction to Exceptional Children: Seminar II	3
ENG* 114	Children's Literature	3
PSY* 105	Group Dynamics	3
PSY* 122	Child Growth and Development	3
PSY* 258	Behavior Modification	3

ENGINEERING TECHNOLOGY

BIOMEDICAL ENGINEERING TECHNOLOGY

Associate in Science

The rapid development of biomedical equipment technology, combined with the introduction of increasingly complex and vital biomedical equipment, has created a serious need for well-prepared technicians in hospitals and medical research centers. These technicians must understand this new technology and be capable of maintaining, calibrating, modifying, and adapting this equipment. Gateway's Biomedical Engineering Technology associate degree program will qualify students for these demanding careers.

BIOMEDICAL ENGINEERING TECHNOLOGY PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Show mastery of the knowledge, techniques, skills, and modern tools of biomedical engineering technology
- Apply current knowledge and adapt to emerging applications in mathematics, science, engineering, and technology
- Conduct, analyze, and interpret experiments and apply experimental results to improve processes
- Apply creativity in the design of systems, components, and processes appropriate to program objectives
- Function effectively as part of a team
- Identify, analyze, and solve technical problems
- Communicate effectively
- Recognize the need for and possess the ability to pursue lifelong learning
- Understand professional, ethical, and social responsibilities
- Be cognizant of contemporary professional, societal, and global issues and be aware of and respect diverse cultures
- Show a commitment to quality, timeliness, and continuous improvement

Growth in the biotechnology industry offers graduates of this program new opportunities as instrumentation calibration technicians for production, validation, and research equipment and instrumentation. Equipment manufacturers require the services of biomedical engineering technicians to assist in developing, manufacturing, testing, service, and technical sales of biomedical equipment. Graduates of Gateway's program are also capable of dealing with most types of non-medical electronics. For more information, contact the Program Coordinator, Thomas McGrath, at (203) 285-2378 or e-mail at (tmcgrath@gatewayct.edu).

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose any course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 175	College Algebra and Trigonometry	3
Scientific Knowledge & Understanding	SK	CHE* 111	Concepts of Chemistry	4
Critical Analysis/Logical Thinking	CALT	BME* 212	Biomedical Equipment Design	4
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
BME* 110	Biomedical Technology	2
CET* 116	Computer Applications for Technology	3
EET* 110	Electric Circuits I	4
Gen Ed - QR	MAT* 175 College Algebra and Trigonometry	3
Gen Ed - SK	CHE* 111 Concepts of Chemistry	4
	Total Semester Credit Hours	16

Second Semester

Course #	Title	Credits
BME* 116	Physiological Systems	4
EET* 136	Electronics I	4
MAT* 186	Precalculus	4
PHY* 121	General Physics I	4
Gen Ed - WC I	ENG* 101 Composition	3
	Total Semester Credit Hours	19

Third Semester

Course #	Title	Credits
BME* 210	Biomedical Instrumentation	4
EET* 252	Digital Electronics	4
MAT* 254	Calculus	4
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
Gen Ed - CALT	BME* 212 Biomedical Equipment Design	4
BME* 214	Advanced Bioinstrumentation	4
BME* 220	Biomedical Practicum	3
Gen Ed - SP	Choose one course in Social Phenomena	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	17
	Total Credit Hours	67

COMPUTER ENGINEERING TECHNOLOGY

Associate in Science

The Computer Engineering Technology program provides training in hardware configuration, software development, programming applications, and the interfacing of hardware and software systems. Students receive hands-on training on various computer systems, test equipment, and software products.

COMPUTER ENGINEERING TECHNOLOGY PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Identify, analyze, and solve technical problems including using the Internet and other resources
- Use diagnostic software and testing equipment to troubleshoot problems
- Install and configure hardware and software
- Demonstrate an understanding of digital data communications
- Use CAD technology to create electrical schematics, simulate and evaluate electrical circuits
- Apply mathematics and demonstrate creativity in solving problems
- Understand structured programming techniques
- Program in high level and assembly language
- Analyze circuits and devices

Graduates of this program possess the skills to troubleshoot, repair, configure, install, and program basic computer systems. The experience and training gained in the Computer Engineering Technology Associate in Science degree program will also prepare students for the national CompTIA Computer Technicians A+ Certification Examination. For more information, contact Christine Cherry at (203) 285-2372 or e-mail ccherry@gatewayct.edu.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 175	College Algebra & Trigonometry	3
Scientific Knowledge & Understanding	SK	PHY* 121	General Physics I	4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3-4
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				22-23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CAD* 126	Electrical Graphics/CAD	3
CET* 116	Computer Applications for Technology	3
EET* 110	Electric Circuits I	4
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 175 College Algebra & Trigonometry	3
	Total Semester Credit Hours	16

Second Semester

Course #	Title	Credits
CET* 124	Structured Programming	4
EET* 136	Electronics I	4
MAT* 186	Precalculus	4
Gen Ed - SP	Choose one course in Social Phenomena	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
CET* 126	Computer Servicing	4
CET* 210	Computer Systems Software	4
CST* 180	Networking I	4
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3-4
	Total Semester Credit Hours	18-19

Fourth Semester

Course #	Title	Credits
CET* 270	CET Practicum	3
CST* 273	Security Management Practices	3
EET* 252	Digital Electronics	4
Gen Ed - SK	PHY* 121 General Physics I	4
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	17
	Total Credit Hours	66-67

COMPUTER SERVICING

Certificate

The Computer Servicing Certificate Program is designed for students seeking entry level technical skills for the information technology (IT) industry. The Program consists of three courses. Each course focuses on specific skills in computer applications, computer system hardware and PC operating systems. Successful mastery of the material should prepare the student for CompTIA's A+ Certification exams (www.comptia.org). A+ Certification is an internationally recognized standard in the IT field. Students who desire to continue their education can use the Computer Servicing Certificate Program as a stepping stone to more advanced studies in the Computer Engineering Technology Program at Gateway Community College. For more information, contact Christine Cherry at (203) 285-2372 or e-mail ccherry@gatewayct.edu.

COMPUTER SERVICING PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Use computer applications such as word processing, spreadsheets, PowerPoint and internet access to effectively communicate and research topics
- Demonstrate safety in the workplace
- Install, configure and upgrade computer hardware and software
- Use diagnostic software and test equipment to troubleshoot problems
- Develop a commitment to customer service
- Recognize the need for continuous learning

PROGRAM REQUIREMENTS

Freshman Year

Course #	Title	Credits
CET* 116	Computer Applications for Technology	3
CET* 126	Computer Servicing I	4
CET* 210	Computer Systems Software	4
CST* 180	Networking I	4
	Total Semester Credit Hours	15

ELECTRICAL ENGINEERING TECHNOLOGY

Associate in Science

The Electrical Engineering Technology program focuses on a variety of electrical and electronic devices, circuits, systems, and related applications that are integral parts of our modern, high-tech society. Students in this program receive theoretical and practical instruction to analyze, construct, test, and troubleshoot a wide variety of electrical, electronic, digital, microprocessor and communication circuits, and systems.

Exceptional instructors guide students in the proper selection, set-up, and use of instrumentation for design, testing, and measurement. Course projects utilize advanced software to model, construct, and analyze electrical and electronic devices, circuits, and systems to produce graphic results. Senior-level students complete an internship program.

ELECTRICAL ENGINEERING TECHNOLOGY PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Professionally use general test instrumentation and present data
- Analyze and understand both analog and digital circuits
- Know the basic components of electrical circuits (resistors, capacitors, and inductors) and how they behave in a circuit
- Present high-quality written and oral reports of technical procedures performed in the laboratory
- Predict the circuit dynamics and power consumption of components in both analog and digital circuits
- Analyze and solve circuit problems to meet given requirements
- Work cooperatively and productively with others in a laboratory test setting
- Utilize fundamental computer software applications
- Possess a basic understanding of digital circuits, integrated circuits, and semiconductors
- Understand the operation of instrumentation and how it is used to measure circuit characteristics
- Use circuit-modeling programs to evaluate complex circuits
- Use computers to perform word processing, data compilation, and graphical analysis
- Use and read vendor catalogs, instruction manuals, and electrical drawings

The extensive instruction and hands-on training received as part of the Electrical Engineering Technology program make each graduate a valuable and desired contributor in Connecticut's wide-ranging, high technology industries. The EET program also provides graduates with excellent opportunities for further education and professional advancement. Gateway's Electrical Engineering Technology program maintains the highest educational and technical standards. For more information, call Interim Chair Eric Flynn, at (203) 285-2371 or e-mail (eflynn@gatewayct.edu).

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 175	College Algebra & Trigonometry	3
Scientific Knowledge & Understanding	SK	PHY* 121	General Physics I	4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3-4
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				22-23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CET* 116	Computer Applications for Technology	3
CAD* 124	CAD: Electrical	1
EET* 110	Electric Circuits I	4
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 175 College Algebra and Trigonometry	3
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3-4
	Total Semester Credit Hours	17-18

Second Semester

Course #	Title	Credits
EET* 114	Electric Circuits II	4
EET* 136	Electronics I	4
MAT* 186	Precalculus Mathematics	4
Gen Ed - SK	PHY* 121 General Physics I	4
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
	Total Semester Credit Hours	19

Third Semester

Course #	Title	Credits
EET* 232	Electronics II	4
EET* 252	Digital Electronics	4
EET* 262	Electrical Machinery and Controls	4
MAT* 254	Calculus I	4
	Total Semester Credit Hours	16

Sophomore Year - Spring Semester

Course #	Title	Credits
EET* 256	Microprocessors	4
EET* 272	Electronic Communications	4
EET* 296	EET Internship	3
Gen Ed - SP	Choose one course in Social Phenomena	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	17
Total Credit Hours		68-70

ELECTRONICS TECHNICIAN

Certificate

The Electronics Technician Certificate program is designed for students who are interested in pursuing immediate employment in the electronics industry, while allowing for advanced educational opportunities. Students will acquire a solid electrical and electronics background along with industrial skills to work with hand tools and electronic instrumentation in conjunction with electrical, electronic, and digital circuits. They will also use the latest CAD software to design and simulate electronic circuits. For more information, call Interim Chair Eric Flynn, at (203) 285-2371 or e-mail eflynn@gatewayct.edu.

ELECTRONICS TECHNICIAN CERTIFICATE PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Understand the operation of a variety of devices used in electrical, electronic and digital circuits along with their applications
- Use Electronic CAD software to draw and simulate electrical and electronic circuit operations
- Demonstrate and understand the role and function of basic hand tools in the construction of electrical and electronic circuits and systems
- Construct electrical, electronic and digital circuits from a schematic
- Operate various instrumentation devices for testing and measuring circuit parameters within electronic circuits and systems
- Work cooperatively and productively with others in a laboratory setting

PROGRAM REQUIREMENTS

Freshman Year - Fall Semester

Course #	Title	Credits
CET* 116	Computer Applications for Technology	3
EET* 110	Electric Circuits I	4
CAD* 126	Electronics Graphics CAD	3
	Total Semester Credit Hours	10

Freshman Year - Spring Semester

Course #	Title	Credits
EET* 136	Electronics I	4
EET* 252	Digital Electronics	4
Elective	Technical (Consult technical advisor)	4
	Total Semester Credit Hours	12
Total Credit Hours		22

MANUFACTURING ENGINEERING TECHNOLOGY

Associate in Science

Manufacturing Engineering Technology is a varied and challenging field that is becoming increasingly important with the advent of new production methods. Manufacturing Engineering Technicians work with engineers to design experiments, plan production methods, find better ways to manufacture products, troubleshoot, inspect, and perform quality control. Students use Computer Aided Drafting (CAD), Computer Aided Manufacturing (CAM), and Computer Integrated Manufacturing (CIM) technologies to design cutting tools, gauges, jigs, fixtures, and dies; study production line layout, production forecasting, planning, inventory control, and statistical quality control; learn the methods of determining and distributing expenses and estimating material, labor, and tool costs of product manufacturing; make time studies of manufacturing operations; and investigate hydraulic control, manufacturing processes, and engineering materials. For more information, contact Kititakone Panasy at (203) 285-2376 or e-mail kpanasy@gatewayct.edu.

MANUFACTURING ENGINEERING TECHNOLOGY PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Apply mathematics and physics to manufacturing engineering
- Use human and communication skills to work effectively
- Plan and implement manufacturing engineering technology
- Perform 2- and 3-dimensional computer aided drafting
- Work with CNC programming and operations for computer-aided manufacturing
- Perform statistical quality control
- Read blueprints and understand geometric dimensioning and tolerancing
- Perform tool design for manufacturing

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 175	College Algebra & Trigonometry	3
Scientific Knowledge & Understanding	SK	PHY* 121	General Physics I	4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3-4
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				22-23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CET* 116	Computer Applications for Technology	3
ARC* 133	Technical Drafting	3
MFG* 102	Manufacturing Processes	3
Gen Ed - QR	MAT* 175 College Algebra and Trigonometry	3
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
CAD* 108	CAD Introduction	3
MFG* 108	Computer Aided Manufacturing	4
MAT* 186	Precalculus Mathematics	4
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - SK	PHY* 121 General Physics I	4
	Total Semester Credit Hours	18

Third Semester

Course #	Title	Credits
CAD* 200	3D CAD Modeling	4
MFG* 204	Advanced Computer Aided Manufacturing	4
PHY*122 or MAT* 254	General Physics II or Calculus I	4
Gen Ed - SP	Choose one course in Social Phenomena	3
Gen Ed - CALT	Choose one course in Critical Analysis/ Logical Thinking	3-4
	Total Semester Credit Hours	18-19

Sophomore Year - Spring Semester

Course #	Title	Credits
MFG* 208	Process Engineering	4
MFG* 216	Tool Designing	4
MFG* 230	Statistical Process Control	3
MFG* 296	Manufacturing Internship	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	17
Total Credit Hours		68-69

QUALITY CONTROL

Certificate

The Quality Control Certificate program is a sequence of courses that prepares students for the Certified Quality Technician (CQT) certification examination by the American Society for Quality Control (ASQC). The program assists students to develop competencies in concepts and techniques, statistical methods, sampling principles, reliability principles and applications, metrology and calibration fundamentals, quality data, quality analysis, problem solving and cost methodology, quality audit concepts and principles, geometry, trigonometry, and metric conversion. For more information, contact Kititakone Panasy at (203) 285-2376 or e-mail at (kpanasy@gatewayct.edu).

PROGRAM REQUIREMENTS

Freshman Year - Fall Semester

Course #	Title	Credits
ARC* 133	Technical Drafting	3
QUA* 114	Principles of Quality Control	3
MAT* 175	College Algebra and Trigonometry	3
	Total Semester Credit Hours	9

Freshman Year - Spring Semester

Course #	Title	Credits
MFG* 102	Manufacturing Processes	3
MFG* 239	Geometric Dimensioning and Tolerancing	3
MFG* 230	Statistical Process Control	3
	Total Semester Credit Hours	9
	Total Credit Hours	18

MECHANICAL ENGINEERING TECHNOLOGY

Associate in Science

Mechanical Engineering Technology concerns power and the machinery used to convert power to useful work. The Mechanical Engineering Technician is a practically-oriented member of the engineering team who applies existing technology to the solution of engineering problems. Students learn how to extract and analyze engineering data. Microcomputers are integrated into the curriculum to aid in both classroom and laboratory activities. Senior students are assigned projects in which they apply the principles they have learned. Applications to current technology are stressed and individual initiative is encouraged. The program is designed to train students as Mechanical Engineering Technicians ready for entry-level positions in industry upon graduation.

MECHANICAL ENGINEERING TECHNOLOGY PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Prepare and present technical and laboratory reports using modern computer software and oral presentation skills
- Prepare drawings of machine components both manually and with the help of AutoCAD software
- Understand the nature, science, structure, and properties of metallic, plastic, ceramic, and composite engineering materials
- Measure the mechanical properties (tensile strength, hardness, impact strength, torsional shear strength, toughness, etc.) of a material specimen in a laboratory
- Draw the Free Body Diagram (FBD) of a two-dimensional body and then write and solve its equations of equilibrium
- Perform force analyses of machine and frames
- Calculate the deformation of and thermal stress caused by temperature changes in a metal object
- Calculate the stresses within spherical pressure vessels
- Apply differential and integral calculus to develop the equations of motion for an object
- Analyze the forces acting on an object in free or restricted motion
- Analyze a column and determine the critical load that will cause it to buckle

Students enrolling in the Mechanical Engineering Technology program should plan to spend approximately \$60.00 on drafting equipment. For more information, call the Program Coordinator, Cyprian Ukah, at (203) 285-2375 or e-mail at (cukah@gatewayct.edu).

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 175	College Algebra & Trigonometry	3
Scientific Knowledge & Understanding	SK	PHY* 121	General Physics I	4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3-4
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				22-23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
ARC* 133	Technical Drafting	3
CAD* 108	CAD Introduction	3
CET* 116	Computer Applications for Technology	3
Gen Ed - QR	MAT* 175 College Algebra and Trigonometry	3
MFG* 102	Manufacturing Processes	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
MEC* 104	Mechanics - Statics	3
MAT* 186	Precalculus	4
Gen Ed - SK	PHY* 121 General Physics I	4
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
Gen Ed - WC I	ENG* 101 Composition	3
	Total Semester Credit Hours	17

Third Semester

Course #	Title	Credits
MEC* 234	Electromechanical Controls	4
MAT* 254	Calculus I	4
MEC* 250	Strength of Materials	3
MEC* 271	Fluid Mechanics	4
Gen Ed - SP	Choose one course in Social Phenomena	3
	Total Semester Credit Hours	18

Fourth Semester

Course #	Title	Credits
MEC* 265	Materials Science	4
MEC* 283	Design of Machines	4
MEC* 296	Mechanical Engineering Internship	2
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3-4
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	16-17
	Total Credit Hours	66-67

COMPUTER ASSISTED DRAFTING

Certificate

This certificate program develops entry-level skills for individuals interested in using Computer Assisted Drafting (CAD) to produce detailed architectural or schematic drawings based on rough sketches, specifications, and calculations made by scientists, engineers, and designers. CAD software permits easy modification and preparation of designs. Furthermore, it allows a drafter to view a design from various angles not easily achieved with traditional board approaches. AutoCAD software is used in this program. Every course offered in the Computer Assisted Drafting certificate program is offered in the Manufacturing Engineering Technology program. Every graduate of the Manufacturing Engineering Technology program will automatically qualify for a CAD certificate. Students enrolling in this program should plan on spending approximately \$60.00 on drafting equipment. For more information, call the Program Coordinator, Cyprian Ukah, at (203) 285-2375 or e-mail at (cukah@gatewayct.edu).

PROGRAM REQUIREMENTS

Freshman Year - Fall Semester

Course #	Title	Credits
ARC* 133	Technical Drafting	3
CAD* 108	CAD Introduction	3
CET* 116	Computer Applications for Technology	3
MFG* 102	Manufacturing Processes	3
	Total Semester Credit Hours	12

Freshman Year - Spring Semester

Course #	Title	Credits
CAD* 200	3D CAD Modeling	4
CAD* 220	Parametric Design	3
CAD* 271	CAD Solids Mechanical Pro-Engineer	3
MAT* 175	College Algebra & Trigonometry	3
	Total Semester Credit Hours	13
	Total Credit Hours	25

RAILROAD ENGINEERING TECHNOLOGY

Associate in Science

Railroad Engineering Technology will prepare students for employment in the railroad industry within a career path for maintaining and repairing railcars through a degree orientation in electromechanical equipment. Graduates will be prepared for technical application exams commonly administered by railroad companies for entry-level maintenance of equipment positions. The program reflects current skills needed within job positions that require electromechanical knowledge and skills.

The Signaling and Communications Option will prepare students for employment in the railroad industry for maintaining and repairing rail line and railcars where signaling and communications systems are used. Graduates will be prepared for technical application exams commonly administered by railroad companies for entry-level signaling and switching positions. The program reflects current skills needed within job positions that require electronic and communications knowledge and skills. For more information on either program, call Interim Coordinator, Richard Halkyard at (203) 285-2311 or e-mail at (rhalkyard@gatewayct.edu).

RAILROAD PRACTICUM ADDITIONAL INFORMATION

- Practicum experiences may be assigned during daytime, evening or weekend hours.
- Practicum assignments in all courses are subject to change based upon availability of practicum sites and numbers in groups.
- Practicum sites could be within an hour radius of the college and may require a mandatory parking fee.
- Students must make their own travel arrangements during the program.

Practicum learning experiences are planned as an integral part of the railroad engineering technology courses and are held at a variety of railroad settings, such as the Shoreline Trolley Museum/Branford Railway and the Railroad Museum of New England/Naugatuck Railroad. Students are responsible for arranging their own transportation to and from assigned clinical sites. Practicum experiences may be assigned during daytime, evening, or weekend hours. Assignment of practicum sites is at the discretion of the railroad engineering technology faculty. Practicum sites could be within an hour radius of the college, and may require a mandatory parking fee.

CRIMINAL BACKGROUND CHECKS & TOXICOLOGY SCREENING

Practicum sites may now require criminal background checks and/or toxicology screening (drugs/alcohol) be completed on any student who will be attending a practicum rotation at those sites. Students must follow instructions for obtaining a background and/or toxicology screening at the college if necessary. Students who are found guilty of having committed a felony/misdemeanor and/or are found to have a positive toxicology screen may be prevented from participating in practicum exercises.

If you cannot participate in a practicum at an assigned facility, you may not be able to complete the objectives of the course and of the program. Specific situations are reviewed by college personnel.

RAILROAD ENGINEERING TECHNOLOGY OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Demonstrate and have an understanding of typical railroad rules and regulations including changes that are a result of accidents and imposed by Homeland Security
- Demonstrate a basic understanding of career opportunities within the railroad industry with an Electromechanical oriented degree

Electromechanical Degree:

- Demonstrate a basic understanding of the operation of railcar electromechanical systems
- Conduct entry level troubleshooting and repairs of electromechanical systems on railcars
- Be prepared to take an application exam on electromechanical skills for employment in the railroad industry

Signaling & Communications Option:

- Demonstrate a basic understanding of the operation of rail line and railcar signaling and communication systems
- Conduct entry level troubleshooting and repairs on signaling and communications systems along rail lines and on railcars
- Be prepared to take an application exam on signaling and communications skills for employment in the railroad industry

ELECTROMECHANICAL OPTION

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 101	Macroeconomics	3
Quantitative Reasoning	QR	MAT* 115 or higher	Mathematics for Science and Technology	3
Scientific Knowledge & Understanding	SK	PHY* 109 or higher	Fundamentals of Applied Physics	4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3-4
Oral Communication	OC	COM* 171	Fundamentals of Human Com- munication	3
Total General Education				22-23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CET* 116	Computer Applications for Technology	3
EET* 103	Fundamentals of Electricity	4
RET* 101	History of Railroading	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 115 Mathematics for Science and Technology (or higher)	3
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
	Total Semester Credit Hours	19

Second Semester

Course #	Title	Credits
EET* 110	Electric Circuits I	4
RET* 110	Careers in the Railroad	2
RET* 120	Railroad Rules, Regulations, Standards & Practicues	3
Gen Ed - SK	PHY* 109 Fundamentals of Applied Physics (or higher)	4
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	16

Third Semester

Course #	Title	Credits
MEC* 234	Electromechanical Controls	4
RET* 220	Safety in the Railroad Workplace	3
RET* 230	Reading & Interpreting Railroad Diagrams	2
RET* 240	Railroad Pneumatics & Hydraulic Controls	4
RET* 270	Practicum in Passenger Railroad Technology	1
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
	Total Semester Credit Hours	17

Fourth Semester

Course #	Title	Credits
RET* 242	Railroad HVAC Systems	4
RET* 244	Railroad Electromechanical Troubleshooting	4
Elective	Restricted (CET* courses only)	4
Gen Ed - SP	ECN* 101 Macroeconomics	3
	Total Semester Credit Hours	15
	Total Credit Hours	67

RAILROAD ENGINEERING TECHNOLOGY - Signaling & Communications Option

Associate in Science

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 101	Macroeconomics	3
Quantitative Reasoning	QR	MAT* 115 or higher	Mathematics for Science and Technology	3
Scientific Knowledge & Understanding	SK	PHY* 109 or higher	Fundamentals of Applied Physics	4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3-4
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				22-23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CET* 116	Computer Applications for Technology	3
EET* 103	Fundamentals of Electricity	4
RET* 101	History of Railroading	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 115 Mathematics for Science and Technology (or higher)	3
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thinking	3
	Total Semester Credit Hours	19

Second Semester

Course #	Title	Credits
EET* 110	Electric Circuits I	4
RET* 110	Careers in the Railroad	2
RET* 120	Railroad Rules, Regulations, Standards & Practicues	3
Gen Ed - SK	PHY* 109 Fundamentals of Applied Physics (or higher)	4
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	16

Third Semester

Course #	Title	Credits
MEC* 234	Electromechanical Controls	4
RET* 220	Safety in a Railroad Workplace	3
RET* 250	Railroad Signaling and Switching	4
RET* 270	Practicum in Passenger Railroad Technology	1
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
RET* 252	Railroad Communications	4
RET* 254	Railroad Maintenance, Troubleshooting and Repair	4
RET* 271	Railroad Practicum II	3
Elective	Restricted (CET* courses only)	4
Gen Ed - SP	ECN* 101 Macroeconomics	3
	Total Semester Credit Hours	18
	Total Credit Hours	68

ENTREPRENEURIAL STUDIES

ENTREPRENEURIAL STUDIES

Associate in Science

Small businesses are vital to the growth of our economy and will create the majority of new jobs. This career program prepares students to be entrepreneurs and to start up new businesses, expand existing businesses, or apply entrepreneurial skills in a corporate setting. It also develops small business management skills to operate small businesses. This program will provide an opportunity to develop entrepreneurial skills with an understanding of marketing, accounting, business law, and management as they relate to business ownership. Practical training is provided through internships in small business settings. The program courses may be transferred to bachelor's degree programs. For more information, call the Program Coordinator, Rose Luglio, at (203) 285-2198 or e-mail at (rluglio@gatewayct.edu).

ENTREPRENEURIAL STUDIES PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Identify core concepts of entrepreneurship and small business management and their impact on society and the global economy.
- Describe the legal and ethical environments for entrepreneurs and small businesses
- Demonstrate analytical, problem-solving, and decision-making skills applicable to entrepreneurship and small business management.
- Demonstrate information literacy through research skills and the use of technology.
- Apply effective written and oral communication skills to business situations.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 101 or ECN* 102	Macroeconomics or Microeconomics	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218	Entrepreneurship	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
BBG* 231	Business Law I	3
Gen Ed - CALT	BES* 218 Entrepreneurship	3
BMK* 201	Principles of Marketing	3
CSA* 135 or CSC* 101	Spreadsheet Applications or Introduction to Computers	3
Gen Ed - WC I	ENG* 101 Composition	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
Gen Ed - OC	BBG* 210 Business Communication	3
BES* 219	Growth & Management - Small Business	3
Gen Ed - SP	ECN* 101 Macroeconomics or ECN* 102 Microeconomics	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
ACC* 100 or ACC* 113	Basic Accounting or Principles of Financial Accounting	3
BMK* 215	Principles of eBusiness	3
Electives	Business	9
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
BBG* 294	Internship	3
BES* 239 or BES* 295	Business Plan or Launch a Business (LAB)	3
BMG* 220	Human Resources Management	3
Elective	Business	3
Gen Ed - SK	Choose one course in: BIO*, CHE*, EAS*, EVS*, PHY*	3-4
	Total Semester Credit Hours	15-16
	Total Credits	60-61

ENTREPRENEURIAL STUDIES

Certificate

The certificate program is designed to prepare prospective entrepreneurs in the fundamentals of starting and managing their own businesses and to launch new ventures. For entrepreneurs who already have an established business, the program will help them strengthen their business and managerial skills. Students may complete the program in two semesters. Students should check with their advisor during the scheduling process to make sure courses are taken in proper sequence and any prerequisites have been met. Students will be able to apply the credits earned towards an AS degree in Entrepreneurial Studies. For more information, contact the Program Coordinator, Rose Luglio, at 203.285.2198 or rluglio@gatewayct.edu.

PROGRAM REQUIREMENTS

Course #	Title	Credits
BES* 218	Entrepreneurship	3
BMK* 201	Principles of Marketing	3
Electives	Business	6
Total Credit Hours		12

Course #	Title	Credits
BES* 219	Growth & Management - Small Business	3
BES* 239 or BES* 295	Business Plan or Launch a Business	3
Elective	Business	3
Total Credit Hours		9
Total Credit Hours		21

FIREFIGHTER 1 & 2

FIREFIGHTER 1 & 2

Certificate

This Certificate was developed in collaboration with local fire agencies to provide career pathways that meet the needs of emergency response and fire service in and outside of New Haven County. Our program offers high quality, diverse learning and training opportunities to prepare students for the industry. Fire Department applicants who have post-secondary firefighting education have a clear advantage over other candidates. This technical certificate program will help graduates secure employment in the firefighter and emergency responder profession.

Gateway students are prepared as first responders in a fire, traffic accident or medical emergency. Training includes CPAT (Candidate Physical Ability Test), FFI, FFII, and EMT as most fire departments require prospective candidates to have certification as an EMT (Emergency Medical Technician). This program is designed to incorporate the orientation to fire service with the necessary theory and hands-on applications needed to become a certified Fire Fighter. This program qualifies students to take the state certification exam with the Bureau of Fire Standards and Training (which includes both written and practical skills) to become a Certified Fire Fighter in the state of Connecticut. An association or volunteer status is needed to have full certification. Continued population growth will increase the number of emergency calls requiring firefighter responses. The majority of situations that firefighters respond to are medical—rather than fire—emergencies, and the aging of the population will lead to an increased demand for emergency responders. For more information, contact Dave Marcarelli by e-mail at dmarcarelli@gatewayct.edu.

Note: There are prerequisites, medical, PPE gear, and physical requirements for program enrollment as well as mandatory attendance at an information session for program enrollment. Students must either test above MAT* 085 and ENG* 066 or complete these courses with a C or better prior to entering the program. Due to practical training, some courses in this program take place at the New Haven Regional Fire Academy. Students are required to wear a uniform in all classes and have structural firefighting Personal Protective Equipment (required PPE gear is Turnout and SCBA). Each student must rent or own the required PPE gear.

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
FTA* 100	Fitness and Health for Firefighters	3
FTA* 101	Fundamentals of Firefighting I	9
	Total Semester Credit Hours	12

Second Semester

Course #	Title	Credits
EMT* 100	Emergency Medical Technician	6
FTA* 102	Fundamentals of Firefighting 2	3
FTA* 103	Civil Service Test Preparation	1
FTA* 110	Fire Ground Hydraulics	3
	Total Semester Credit Hours	13
	Total Program Credits	25

GENERAL STUDIES

GENERAL STUDIES

Associate in Science

The General Studies curriculum provides the fundamentals of a college education together with a range of open electives, allowing students to explore various courses of study and to clarify their educational and occupational goals. It is the least restrictive of all the degrees offered by the College so that students may put together a program compatible with their individual interests and skills. For more information, call the Program Coordinator, Theresa Russo, at (203) 285-2286 or e-mail at (trusso@gatewayct.edu).

GENERAL STUDIES PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Identify educational and occupational goals
- Work with others in a culturally and intellectually diverse community
- Utilize effective written and oral communication skills
- Apply quantitative methods to problem solving
- Apply scientific methods of investigation
- Demonstrate competency in using current, relevant technologies

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose one course in Scientific Knowledge & Understanding	3-4
Critical Analysis/Logical Thinking	CALT		Choose one course in Critical Analysis/Logical Thinking	3
Oral Communication	OC		Choose one course in Oral Communications	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
IDS 114	Foundations / Academic Inquiry	3
Elective	HIS* or POL*	3
Elective	ART*, DAN*, MUS*, THR*, or any course in Aesthetic Dimensions	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - SK	Choose one course in Scientific Knowledge	3-4
Elective	ANT*, PSY*, SOC*	3
Elective	Open	3
Elective	Restricted (see below)	3
	Total Semester Credit Hours	15-16

Third Semester

Course #	Title	Credits
Gen Ed - CALT	Choose one course in Critical Analysis/Logical Thk.	3
Gen Ed - OC	Choose one course in Oral Communication	3
Gen Ed - SP	Choose one course in Social Phenomena	3
Electives	Open	6
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
Elective	BIO*, CHE*, EAS*, EVS*, MAT* or PHY*	3
Elective	Restricted (see below)	3
Electives	Open	9
	Total Semester Credit Hours	15
	Total Credits	60-61

Restricted Electives: ACC* 113, ARC* 133, ART*, BIO* 115, BES* 218, BES* 239, BFN* 110, BMG* 203, COM* 121, COM* 141, CSA* 105, CSA* 135, CSA* 140, CJS* 101, CJS* 102, DAR* 158, DAN*, EAS* 106, ENG* 281, EVS* 100, ESL*, FRE*, GRA* 261, HLT* 103, HSP* 101, HSP* 103, HSP* 105, HSP* 249, HUM* 130, HSE* 212, ITA*, MAT* 146, MUS*, PHY* 101, SPA*, THR*

HOSPITALITY MANAGEMENT

RESTAURANT AND FOOD SERVICE MANAGEMENT

Associate in Science

The food service industry is one of the fastest-growing industries in this country and now ranks third in the nation in terms of growth. The industry offers job opportunities in many areas where food and drink are served, including commercial, industrial, and health care organizations. There are more than 600,000 restaurants in this country, employing more than nine million workers.

Food service establishments serve more than 800 million meals per week, and gross sales exceed \$150 billion each year. Graduates of the Restaurant and Food Service Management program are qualified for employment in food production, food and beverage cost control, supervision, food service budgeting, and forecasting. As part of the course requirements, students participate in a 400-hour work experience program. Individuals who wish to continue their studies following graduation may transfer courses in this program to similar programs at the baccalaureate level.

Students in this program will be required to:

- Communicate with guests in Café Vincenzo
- Lift and transport food and other culinary products, equipment, small wares and utensils around the kitchen
- Lift and transport trays with hot and cold plated food, small ware and other items
- Pour and serve hot and cold liquids and beverages
- Use knives and other commercial cooking and food service equipment
- Maneuver in a commercial kitchen, dining room and related facilities
- Use commercial cleaning and sanitizing equipment and materials
- Handle a variety of food items including meat, fish, poultry, produce and dairy products
- Follow local Board of Health and safety protocol

RESTAURANT AND FOOD SERVICE MANAGEMENT PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Identify, organize, plan, and allocate resources in food service operations such as time, materials and facilities, money, and human resources
- Demonstrate knowledge of food preparation theories and techniques, and use this knowledge to meet the production requirements of a food service operation within a projected budget
- Effectively work with others as a member of a team, serving clients and customers, teaching others new skills, exercising leadership behaviors, and negotiating and working with others from diverse backgrounds
- Apply concepts of procurement and inventory to purchase, receive, store, issue, and distribute food and related items in a food service operation
- Identify such current trends in the food service industry as delivery systems and functions
- Operate effectively, appropriately suggesting modifications to existing systems in order to improve products or services and develop new or alternative systems
- Select and apply the appropriate food service procedures, tools, or machines, including computer applications, to produce desired results
- Demonstrate ethical behavior and self-management in personal and professional activities
- Perform basic mathematical computations accurately and appropriately, especially with regard to food and beverage production, purchasing, and cost controls
- Describe and apply basic marketing, sales, and merchandising methods in hospitality operations

Students in this program are responsible for purchasing uniforms, books, and knives. A physical examination and travel to internship/work experience sites are required. For information, call the Hospitality Management Program Coordinator, Stephen Fries, at (203) 285-2175 or e-mail at (sfries@gatewayct.edu).

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218	Entrepreneurship	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
HSP* 100	Introduction to the Hospitality Industry	3
HSP* 101	Principles of Food Preparation	3
HSP* 109	Food Safety Certification	1
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - SP	PSY* 111 General Psychology I	3
	Total Semester Credit Hours	13

Second Semester

Course #	Title	Credits
HSP* 112	Advanced Food Preparation	4
HSP* 117	Beverage Management	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
Gen Ed - OC	BBG* 210 Business Communication	3
	Total Semester Credit Hours	16

Third Semester

Course #	Title	Credits
HSP* 134	Hospitality Customer Relations	3
HSP* 211	Food and Beverage Cost Control	3
HSP* 231	Hospitality Law	3
HSP* 237	Hospitality Marketing	3
Gen Ed - SK	Choose one course in Scientific Knowledge	3-4
	Total Semester Credit Hours	15-16

Fourth Semester

Course #	Title	Credits
ACC* 113	Principles of Accounting I	3
HSP* 232	Restaurant Management	3
HSP* 249	Food Writing	3
HSP* 295	Internship/Work Experience I	3
Gen Ed - CALT	BES* 218 Entrepreneurship	3
	Total Semester Credit Hours	15

Summer

Course #	Title	Credits
HSP* 298	Internship/Work Experience II	1
	Total Semester Credit Hours	1
	Total Credits	60-61

Students seeking both the A.S. degree in Restaurant and Food Service Management and the A.S. degree in Hotel Management must complete all of the requirements of the Restaurant and Food Service Management degree as well as:

Course #	Title	Credits
HSP* 244	Meetings, Conventions & Special Events Management	3
HSP* 246	Hotel Accounting & Front Office Management	3
BBG* 220	Human Resource Management	3
IDS 106	Critical Thinking - Business	3
CSA* 135	Spreadsheet Applications	3

CULINARY ARTS

Certificate

The Culinary Arts Certificate program is the first step toward a career in the food preparation industry. The 30 credit hour certificate program is open to both full-time and part-time students. Students obtain a well-rounded education, combining both laboratory and classroom experience. In addition to academic course work, students prepare and serve a wide variety of meals in the dining room at the Downtown Campus to our staff, faculty, and the public. Students in this program are responsible for purchasing uniforms, books, and knives. A physical examination and travel to internships/work experience sites are required. As part of the course requirements, students participate in a 400-hour work experience program. Individuals who wish to continue their studies following graduation may transfer courses in this program to similar programs at the baccalaureate level. For more information, call the Dean of Academic Affairs Office at 203-285-2077.

Students in this program will be required to:

- Communicate with guests in Café Vincenzo
- Lift and transport food and other culinary products, equipment, small wares and utensils around the kitchen
- Lift and transport trays with hot and cold plated food, small ware and other items
- Pour and serve hot and cold liquids and beverages
- Use knives and other commercial cooking and food service equipment
- Maneuver in a commercial kitchen, dining room and related facilities
- Use commercial cleaning and sanitizing equipment and materials
- Handle a variety of food items including meat, fish, poultry, produce and dairy products
- Follow local Board of Health and safety protocol

PROGRAM REQUIREMENTS

Freshman Year - Fall Semester

Course #	Title	Credits
HSP* 101	Principles of Food Preparation	3
HSP* 103	Basic Baking and Pastry Arts	3
HSP* 109	Food Safety Certification	1
HSP* 112	Advanced Food Preparation	4
HSP* 134	Hospitality Customer Relations	3
NTR* 106	Culinary Nutrition	2
	Total Semester Credit Hours	16

Freshman Year - Spring Semester

Course #	Title	Credits
HSP* 201	International Foods	4
HSP* 202	Catering and Event Management	3
HSP* 215	Baking and Pastry Arts II	3
HSP* 295	Work Experience/Internship I	3
	Total Semester Credit Hours	13

Summer

Course #	Title	Credits
HSP* 298	Work Experience/Internship II	1
	Total Semester Credit Hours	1
	Total Program Credits	30

Several academic credits earned in this program are transferable to the Food Service Management associate degree program.

PROFESSIONAL BAKER

Certificate

This certificate is designed to further the education and training for those already working in this field as well as to accommodate individuals entering careers in the Culinary Arts. Several credits courses are transferable to the Culinary Arts Certificate. As part of the course requirements, students participate in a 400-hour work experience program. Individuals who wish to continue their studies following graduation may transfer courses in this program to similar programs at the baccalaureate level. For more information, call the Dean of Academic Affairs Office at 203-285-2077.

Students in this program will be required to:

- Lift and transport food and other culinary products, equipment, small wares and utensils around the kitchen
- Lift and transport trays with hot and cold plated food, small ware and other items
- Pour and serve hot and cold liquids and beverages
- Use knives and other commercial cooking and food service equipment
- Maneuver in a commercial kitchen, dining room and related facilities
- Use commercial cleaning and sanitizing equipment and materials
- Handle a variety of food items including meat, fish, poultry, produce, dairy products and flours.
- Follow local Board of Health and safety protocol

PROGRAM REQUIREMENTS

Freshman Year – Fall Semester

Course #	Title	Credits
HSP* 101	Principles of Food Preparation	3
HSP* 103	Basic Baking & Pastry Arts	3
HSP* 109	Food Safety Certification	1
	Total Semester Credit Hours	7

Freshman Year - Second Semester

Course #	Title	Credits
HSP* 215	Baking & Pastry Arts II	3
HSP* 295	Work Experience/Internship I	3
Electives	Restricted-Select two (see below)	4
	Total Semester Credit Hours	10

Summer

Course #	Title	Credits
HSP* 298	Work Experience/Internship II	1
	Total Semester Credit Hours	1
	Total Program Credits	18

Restricted Electives: HSP* 105, HSP* 208, or HSP* 217

HOTEL MANAGEMENT

Associate in Science

The lodging industry is one of the fastest-growing industries in the nation. In the more than 50,000 hotels and motels in the U.S.A., nearly four million rooms are available each day. Gross annual income exceeds \$20 billion dollars. In the first year at Gateway Community College, students study the various aspects of the lodging industry. In the second year, emphasis is placed on practical management experience. As part of the course requirements, students participate in a 400-hour work experience/internship program. For individuals who want to continue their studies following graduation, courses in this program are transferable to similar programs at four-year colleges and universities.

Students in this program will be required to:

- Lift and transport food and other culinary products, equipment, small wares and utensils around the kitchen
- Lift and transport trays with hot and cold plated food, small ware and other items
- Use knives and other commercial cooking and food service equipment
- Maneuver in a commercial kitchen, dining room and related facilities
- Use commercial cleaning and sanitizing equipment and materials
- Handle a variety of food items including meat, fish, poultry, produce, dairy products and flours
- Follow local Board of Health and safety protocol

HOTEL MANAGEMENT PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Identify, organize, plan, and allocate resources in such hotel operations as time, materials and facilities, money, and human resources
- Process reservations, register guests, process guest departures, and assist in resolving guest problems
- Describe functional relationships among hotel divisions and departments
- Perform night audit procedures
- Summarize developmental and operational components of the following industries: airline, surface travel, cruise, and hotel, resort and other lodging businesses
- Identify and implement systems and processes for room status changes, front office posting, telephone/pbx, bank maintenance, cash transactions, and security and guest keys
- Identify major geographical areas in terms of tourism generation
- Effectively work as a member of a team, serve clients and customers, teach others new skills, exercise leadership behavior, negotiate, and work with others from diverse backgrounds
- Identify such current trends in the lodging industry as delivery systems and functions
- Operate effectively, suggesting appropriate modifications of existing systems to improve products or services and develop new or alternate systems
- Demonstrate ethical behavior and self-management in personal and professional activities
- Perform basic mathematical computations accurately and appropriately, especially with regard to hotel and guest accounting, night audits, and cost controls for hotel and food operations within the hotel
- Describe and apply basic marketing, sales, and merchandising methods in hospitality operations

Graduates of the Hotel Management program at GCC are qualified for employment as supervisors in small hotels and inns as trainees and assistants in large hotels, and as salespersons and front office agents. Students in this program are responsible for purchasing uniforms, books, and knives. A physical examination and travel to internship / work experience sites are required. As part of the course requirements, students participate in a 400-hour work experience program. Individuals who wish to continue their studies following graduation may transfer courses in this program to similar programs at the baccalaureate level. For more information, call the Hospitality Management Program Coordinator, Stephen Fries, at (203) 285-2175 or e-mail at (sfries@gatewayct.edu).

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK		Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	IDS 106	Critical Thinking - Business	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
HSP* 100	Introduction to the Hospitality Industry	3
HSP* 101	Principles of Food Preparation	3
HSP* 109	Food Safety Certification	1
HSP* 134	Hospitality Customer Relations	3
HSP* 237	Hospitality Marketing	3
Gen Ed - WC I	ENG* 101 Composition	3
	Total Semester Credit Hours	16

Second Semester

Course #	Title	Credits
HSP* 117	Beverage Management	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
Gen Ed - CALT	IDS 106 Critical Thinking - Business	3
Gen Ed - OC	BBG* 210 Business Communication	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
HSP* 211	Food and Beverage Cost Control	3
HSP* 231	Hospitality Law	3
ACC* 113	Principles of Accounting I	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - SK	Choose any course in BIO*, CHE*, EAS*, EVS*, PHY*	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
HSP* 244	Meetings, Conventions, and Special Events Mgmt.	3
HSP* 246	Hotel Accounting/Front Office Management	3
HSP* 295	Internship/Work Experience I	3
BMG* 220	Human Resources Management	3
Gen Ed - SP	PSY* 111 General Psychology I	3
	Total Semester Credit Hours	15

Summer

Course #	Title	Credits
HSP* 298	Internship/Work Experience II	1
	Total Semester Credit Hours	1
	Total Credits	62

Students seeking both the A.S. degree in Hotel Management and the A.S. degree in Restaurant and Food Service Management must complete all of the requirements of the Hotel Management degree as well as:

Course #	Title	Credits
BES* 218	Entrepreneurship	3
HSP* 112	Advanced Food Preparation	4
HSP* 249	Food Writing	3
Electives*	Restricted (choose two) BMG* 202 Principles of Management BOT* 220 Computerized Communication HSP* 202 Catering & Event Management	6

MEETINGS, CONVENTIONS AND SPECIAL EVENTS MANAGEMENT

Certificate

This certificate is designed for students seeking careers in the growing field of meeting planning. It will also develop and update the skills of those presently in the field. The certificate emphasizes the management of and services for meetings, conventions, trade shows, and special events. Students will be prepared for positions in such areas as independent or entry-level corporate meeting planning; conference, trade show, and association management; and convention/meeting services in the hotel industry. The certificate will also enable the veteran meeting planner to obtain college credentials in his/her profession. Furthermore, it gives administrative assistants and others who plan meetings as part of their regular jobs a formal opportunity to learn about this industry and enhance their planning skills. For more information, call the Hospitality Management Program Coordinator, Stephen Fries, at (203) 285-2175 or e-mail at (sfries@gatewayct.edu).

PROGRAM REQUIREMENTS

Course #	Title	Credits
BBG* 210 or COM* 171	Business Communication or Fundamentals of Human Communication	3
BMK* 215	Principles of eBusiness	3
HSP* 100	Introduction to the Hospitality Industry	3
HSP* 231	Hospitality Law	3
HSP* 237	Hospitality Marketing	3
HSP* 244	Meetings, Conventions and Special Events Management	3
Elective +	Restricted	3
Total Credit Hours		21

+ Restricted Electives: CSA* 135, CSA* 140, BOT* 220

(F) Offered fall semester

(S) Offered spring semester

HUMAN SERVICES

HUMAN SERVICES

Associate in Science

The field of Human Services is dynamic and challenging. The concept of human services stresses care for the whole individual and his or her relation to the environment. The sequential courses develop knowledge of personality patterns and behavior, roles and functions of community resources, and skills in each curriculum option. The program prepares students for employment in a variety of social service settings, including mental health services, schools, children and family services, community action programs, health and welfare planning, elderly services, and the criminal justice system.

Curricula prepare students for entry into the job market and for transfer into baccalaureate degree programs. Field experience is an integral part of the Human Services curriculum. It exposes students directly to clients in community service settings to apply the theories and skills learned in the classroom. The field experience and seminar course must be taken during the same semester. In the various degree programs, students are eligible for field placement once they complete 24-35 credits toward the degree and are able to demonstrate a sufficient level of competence and skill.

Prior to each semester Human Services students are expected to consult with the Program Coordinator, Kim Shea at 203.285.2116 or e-mail at (kshea@gatewayct.edu) before registering for courses.

HUMAN SERVICES PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Effectively organize, acquire, and present information in written and spoken form
- Use effective verbal and nonverbal interpersonal relationship skills when working with people
- Identify human service agencies and programs within Greater New Haven, Connecticut, and the national social services system
- Recognize and respond to cultural diversity and the diverse challenges facing certain populations served by human services
- Act professionally with clients and agency personnel in human service settings
- Identify basic problems that human service workers encounter and the most useful strategies for resolution
- Behave ethically according to professional human services standards

HUMAN SERVICES CAREER

Associate in Science

The Human Services Career course of study is designed for students who plan to enter the job market or who are already employed by a human services agency.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK	BIO* 110 or BIO* 115	Principles of the Human Body or Human Biology	3-4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Aesthetic Dimension Historical Knowledge Oral Communication Scientific Reasoning	AD HK OC SR		Choose one course in AD, HK, OC, or SR	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - SK	BIO* 110 Principles of the Human Body or BIO* 115 Human Biology	3-4
Gen Ed - WC I	ENG* 101 Composition	3
HSE* 101	Introduction to Human Services	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
SOC* 101	Principles of Sociology	3
Total Semester Credit Hours		15-16

Second Semester

Course #	Title	Credits
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
POL* 111	American Government	3
Gen Ed - SP	PSY* 111 General Psychology	3
SOC* 111 or SOC* 210	Child, Family, School and Community or Sociology of the Family	3
Elective	Restricted (see below)	3
Total Semester Credit Hours		15

Third Semester

Course #	Title	Credits
PSY* 105	Group Dynamics	3
PSY* 245	Abnormal Psychology	3
Gen Ed	Choose one course in AD, HK, OC, or SR	3
Electives	Restricted (see below)	6
Total Credit Hours		15

Fourth Semester

Course #	Title	Credits
HSE* 271	Field Work Seminar	3
HSE* 281	Human Services Field Work	3
Gen Ed - CALT	PHL* 111 Ethics	3
PSY* 233	Theories, Methods, Practice of Counseling and Therapy	3
Elective	Restricted (see below)	3
Total Credit Hours		15
Total Program Credits		60-61

Restricted Electives: CSA* 105, PSY* 122, PSY* 209, PSY* 210, SOC* 114, any CJS course, any DAR* course, any HSE* course (above 101). Please contact the Program Coordinator for additional options.

HUMAN SERVICES TRANSFER

Associate in Science

This course of study prepares students for transfer into a four-year college while training them in human services and developing the skills necessary in entry-level positions. Students wishing to transfer are strongly encouraged to obtain catalogs from the four-year college(s) under consideration to ensure the transferability of credits.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra or higher	3
Scientific Knowledge & Understanding	SK	BIO* 115	Human Biology	4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Aesthetic Dimension	AD		Choose one course in Aesthet- ic Dimension	3
Total General Education				22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - WC I	ENG* 101 Composition	3
HIS* 101 or HIS* 102	Western Civilization I or Western Civilization II	3
HSE* 101	Introduction to Human Services	3
Gen Ed - QR	MAT* 137 Intermediate Algebra or higher	3-4
SOC* 101	Principles of Sociology	3
	Total Semester Credits	15-16

Second Semester

Course #	Title	Credits
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
POL* 111	American Government	3
Gen Ed - SP	PSY* 111 General Psychology	3
SOC* 111 or SOC* 210	Child, Family, School and Community or Sociology of the Family	3
Elective	Restricted (see below)	3
	Total Semester Credits	15

Third Semester

Course #	Title	Credits
Gen Ed - SK	BIO* 115 Human Biology	4
Gen Ed - CALT	PHL* 111 Ethics	3
PSY* 105	Group Dynamics	3
PSY* 245	Abnormal Psychology	3
SOC* 117	Minorities in the U.S.	3
	Total Semester Credits	16

Fourth Semester

Course #	Title	Credits
ANT* 105	Cultural Anthropology	3
HSE* 271	Field Work Seminar	3
HSE* 281	Human Services Field Work	3
Gen Ed - AD	Choose one course in Aesthetic Dimension	3
Elective	Restricted (see below)	3
	Total Semester Credits	15
	Total Program Credit Hours	61

Restricted Electives: CSA* 105, ECN* 102, ENG* 281, any HSE* higher than 101, POL* 102, THR* 110, any studio art or music.

HUMAN SERVICES

Certificate

The Human Service Certificate curriculum is designed for the professional who is already employed in the field of Human Services. For more information, contact Kim Shea, Program Coordinator at (203) 285-2116 or e-mail at (kshea@gatewayct.edu).

PROGRAM REQUIREMENTS

First Semester

Course #	Title	Credits
COM* 171	Fundamentals of Human Communication	3
ENG* 101	Composition	3
HSE* 101	Introduction to Human Services	3
PSY* 111	General Psychology I	3
SOC* 101	Principles of Sociology	3

Second Semester

Course #	Title	Credits
HSE* 247	Supervisors' Seminar (S)	3
POL* 111	American Government	3
PSY* 105	Group Dynamics	3
PSY* 245	Abnormal Psychology	3
Elective	Restricted (see below)	3

BIO 113, DAR* (any), PSY* 209, 122, 210, SOC* 114, CJS* (any), HSE* above 101)
(S) Offered spring semester

HUMAN SERVICES: GERONTOLOGY OPTION

Associate in Science

This option prepares students for entry-level positions working with the elderly and for transfer to a four-year college. The option presents the demographic, social, biological, and psychological changes occurring in elderly people and how these changes determine the skills and services needed to work in gerontology.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology	3
Quantitative Reasoning	QR	MAT* 109 or higher	Quantitative Literacy	3
Scientific Knowledge & Understanding	SK	BIO* 113	Physiology of Aging	3
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Aesthetic Dimension Historical Knowledge Oral Communication Scientific Reasoning	AD HK OC SR		Choose one course in either AD, HK, OC, or SR (Students should consult with Program Coordinator)	3
				21

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - SK	BIO* 113 Physiology of Aging	3
Gen Ed - WC I	ENG* 101 Composition	3
HSE* 101	Introduction to Human Services	3
Gen Ed - QR	MAT* 109 Quantitative Literacy (or higher)	3
SOC* 101	Principles of Sociology	3
	Total Semester Credits	15

Second Semester

Course #	Title	Credits
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
HSE* 247	Supervisors Seminar	3
Gen Ed - CALT	PHL* 111 Ethics	3
Gen Ed - SP	PSY* 111 General Psychology	3
PSY* 209	Psychology of Aging	3
	Total Semester Credits	15

Third Semester

Course #	Title	Credits
POL* 111	American Government	3
PSY* 245	Abnormal Psychology	3
SOC* 114	Sociology of Aging	3
Elective	Restricted (see below)	6
	Total Semester Credits	15

Fourth Semester

Course #	Title	Credits
HSE* 271	Field Work Seminar	3
HSE* 281	Human Service Field Work	3
PSY* 233	Theories, Methods, Practice of Counseling and Therapy	3
Elective	Restricted (see below)	3
Gen Ed	Choose one course in AD, HK, OC, or SR	3
	Total Semester Credits	15
	Total Program Credit Hours	60

Restricted Electives: CSA* 105, any HSE* higher than 101, PSY* 201, PSY* 210, any DAR* course.

GERONTOLOGY

Certificate

The gerontology certificate curriculum meets the continuing educational needs of providers and users of services to older citizens. Applicants may be employees in the field of gerontology or elderly citizens themselves, hospital administrators, or students enrolled in other programs at the College. For more information, contact Kim Shea, Program Coordinator at (203) 285-2116 or e-mail at (kshea@gatewayct.edu).

PROGRAM REQUIREMENTS

Course #	Title	Credits
BIO* 113	Physiology of Aging	3
PSY* 209	Psychology of Aging (S)	3
SOC* 114	Sociology of Aging (F)	3
Electives	Restricted (see below)	6
Total Credit Hours		15

Electives: HSE* 247 or PSY* 210

(F) Offered fall semester

(S) Offered spring semester

THERAPEUTIC RECREATION

Certificate

This program prepares students to work as Therapeutic Recreation Directors under Connecticut State Regulations. With a steadily growing health care field, employment opportunities for Therapeutic Recreation Directors continue to increase. Students can pursue opportunities working with a variety of populations including Alzheimer's and dementia, autism, short-term rehabilitation, home care and individuals with a variety of physical and mental disabilities. For more information, contact Kim Shea, Program Coordinator at (203) 285-2116 or e-mail at (kshea@gatewayct.edu).

THERAPEUTIC RECREATION PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates will be able to:

- Identify the purpose, service goals and outcomes of the therapeutic recreation profession
- Identify and analyze the skills necessary to provide appropriate interventions to individuals with special needs
- Demonstrate ability to write measurable goals and behavioral objectives for individuals with special needs
- Demonstrate knowledge of assessment, planning, implementation and evaluation skills needed for professional documentation
- Evaluate the different models for program delivery and recognize their strengths and weaknesses in relation to working with diverse populations with special needs

PROGRAM REQUIREMENTS

Course #	Title	Credits
BIO* 113	Physiology of Aging	3
HSE* 151	Introduction to Therapeutic Recreation Services	3
HSE* 152	Programming in Therapeutic Recreation (F)	3
HSE* 153	Methods and Materials in Therapeutic Recreation (S)	3
HSE* 247	Supervisors' Seminar (S)	3
Elective	See Below	3
Total Credit Hours		18

Electives: PSY* 209, PSY* 210, or SOC* 114

(F) Offered fall semester

(S) Offered spring semester

YOUTH WORKER

Certificate

This certificate supports the professional development of people who work with youth, ages 12 and up. The program facilitates an understanding of adolescent development and the diverse ways in which adolescents learn about and experience the world. Courses prepare youth workers to assist youth, colleagues, organizations, and communities. Students learn about valuable local, state, and national youth development projects and resources.

Field experience is an integral part of the Youth Worker curriculum and is coordinated with the seminar assignments. The field experience and seminar courses must be taken during the same semester. For more information, contact Kim Shea, Program Coordinator at (203) 285-2116 or e-mail at (kshea@gatewayct.edu).

PROGRAM REQUIREMENTS

Course #	Title	Credits
COM* 171	Fundamentals of Human Communication	3
DAR* 101	Public Health Issues: Substance Use & Prevention	3
ENG* 101	Composition	3
HSE* 101	Introduction to Human Services	3
HSE* 228	Youth Worker Seminar	3
HSE* 271	Field Work Seminar I	3
HSE* 281	Human Services Field Work I	3
PSY* 105	Group Dynamics	3
SOC* 101	Principles of Sociology	3
Elective	Computer Literacy	3
Elective	Restricted (see below)	3
Total Credit Hours		33

Restricted Electives: ECE* 101 or SOC* 210

INTERDISCIPLINARY PEACE, COLLABORATION & CONFLICT

INTERDISCIPLINARY PEACE, COLLABORATION & CONFLICT

Certificate

The Interdisciplinary Peace, Collaboration, and Conflict Certificate (IPCC) promotes the knowledge and skills leading to student success in meeting educational and workplace goals. Interactive traditional and online instruction and external service learning internships give students the opportunities to recognize their capacity to understand personal and global conflict and to use strategies that support emotional health and nonviolence. The Interdisciplinary Peace, Collaboration, and Conflict Certificate builds capacity in our communities to prevent and sustain a culture of nonviolence instead of reacting to it. Our faculty, staff and students are involved in many local and statewide organizations that focus on the fields of peace education and collaborative conflict resolution. The Certificate promotes and coordinates services and educational opportunities to reduce and eliminate violence.

INTERDISCIPLINARY PEACE, COLLABORATION & CONFLICT OUTCOMES

Upon successful completion of all program requirements, students will be able to:

- Recognize the value of creative, collaborative and innovative approaches to problem-solving and acknowledging differing points of view
- Respond critically to ethical issues while applying standards of scholarship
- Apply a multi-scalar perspective to peace issues including nonviolence; human rights; economic well-being; truth and justice
- Apply a multi-scalar perspective to peace practices including alternative dispute resolution and mediation; reconciliation; peace building and peace making, peace keeping
- Clearly communicate peace and conflict concepts in both oral and written forms. Respond promptly to rhetorical situations, utilize and evaluate sources, construct logical arguments, apply language conventions and formulate effective writing strategies
- Effectively use relevant technologies to solve problems, complete projects, make informed decisions
- Access, evaluate, and identify information appropriate to needs and audience, synthesize information and evaluate ethical and social issues associated with the use of information technologies

PROGRAM REQUIREMENTS

Course #	Title	Credits
HUM* 125	Introduction to Peace and Conflict Studies	3
PHL* 111	Ethics	3
HSE* 212	Mediation	3
IDS 292	Service Learning Internship	3
Elective +	Restricted	3
Total Credit Hours		15

+ Restricted Electives: ANT* 105, CJS* 101, CJS* 102, ENG* 202, ECE* 176, HIS* 253, HUM* 130, PSY* 105, or (LGL* 198), Introduction to Paralegal)

LIBERAL ARTS AND SCIENCES

LIBERAL ARTS AND SCIENCES

Associate in Arts

The Associate in Arts degree in Liberal Arts and Sciences (LAS) is designed for students who wish to complete a rigorous course of study in preparation for transfer to a baccalaureate degree program. A broadly integrated curriculum will provide students with an essential understanding of traditional discipline areas, as well as the academic skills necessary to engage them. Students will become familiar with techniques of inquiry in humanities, mathematics, natural sciences, and social sciences, allowing them to continue their education with confidence toward a 4-year degree in the discipline of their choice.

Courses which satisfy the requirements for an Associate's degree in the Liberal Arts and Sciences at Gateway are in many cases the same as those taught in the first two years of the Bachelor's degree program at receiving schools. With an LAS degree, students may pursue a professional degree (e.g., in education, business, science, law, medicine, social work, etc.) or a liberal arts degree at the bachelor's level (e.g., in English, philosophy, natural science, or mathematics, etc.). In order to ensure maximum transfer credit to the college or university of choice, students are strongly encouraged to study the catalog of the institution to which they intend to transfer and consult directly with its admissions office. Students should also confer each semester with the LAS program coordinator, or a qualified transfer advisor as they proceed.

Students considering transfer within the Connecticut State Colleges and Universities should consider a CSCU Pathway Transfer A.A. Degree: [Discipline] Studies. Visit www.ct.edu/transfer for more information.

For more information, contact the Program Coordinator, Dr. Lauren Doninger, at LDoninger@gatewayct.edu.

LIBERAL ARTS AND SCIENCES PROGRAM OUTCOMES

- Upon successful completion of all program requirements, students will be able to:
- Communicate effectively orally and in writing
- Demonstrate an understanding of the human experience from an historical perspective
- Draw from multiple disciplines and recognize the difference between reliable and unreliable sources in conducting an argument, and use reliable sources to think and argue critically and logically
- Employ scientific and quantitative reasoning skills to solve problems
- Articulate aesthetic and ethical aspects of human endeavor
- Analyze sociocultural context on the behavior of individuals and groups

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 137 or higher	Intermediate Algebra or higher	3
Scientific Knowledge & Understanding	SK		Choose one course in Scientific Reasoning	3-4
Critical Analysis/Logical Thinking	CALT	PHL* 101 or PHL* 111	Introduction to Philosophy or Ethics	3
Historical Knowledge	HK		Choose one course in Historical Knowledge	3
Total General Education				21-22

PROGRAM REQUIREMENTS

In order to transfer as efficiently as possible and complete your baccalaureate degree without needed to take extra credits, all course selections should be made based on intended transfer institution and intended major. Seek advising.

Course Area	Courses	Credits
Foreign Language	FRE*/ITA*/SPA* 102 or higher Requirements may be waived for bilingual students and students who have completed level II of a foreign language in high school. Credits may be filled with open elective (consider transfer institution requirements and seek advising).	3
Scientific Reasoning	Choose one course in Scientific Reasoning with a lab	4
Aesthetic Dimension	ART* 101, ART* 102 or MUS* 101	3
Oral Communication	COM* 173	3
Liberal Arts and Sciences Electives	Students are strongly encouraged to seek advisement and to carefully consider transfer issues and intended baccalaureate major. LAS elective course prefixed: ANT*, ART*, BIO*, CHE*, COM*, EAS*, ECN*, ENG*, EVS*, FRE*, GEO*, HIS*, HUM*, ITA*, MAT*, MUS* (non-performance), PHL*, PHY*, POL*, PSY*, SGN*, SOC*, SPA*, THR*	15
Open Electives	Students are strongly encouraged to seek advisement and to carefully consider transfer issues.	12
Total Program Credit Hours		40
Total Degree Credit Hours		61

Liberal Arts and Sciences Transfer Opportunities

Gateway Community College Liberal Arts and Sciences students are able to transfer seamlessly to nearly any college/university for which they are qualified. Students have successfully transferred to, and graduate from colleges across the state and nation, including many top-tier institutions, and Ivy League schools. Requirements of baccalaureate institutions vary greatly as do the award of transfer credits. Therefore, students should select a transfer institution and major early, work with their Admissions Office, and meet with the Liberal Arts and Sciences program coordinator or a qualified transfer advisor to ensure maximum transfer credit of their course selections.

Connecticut State University System (Central, Eastern, Southern, and Western)

Students with an associate degree from a Connecticut Community College are guaranteed admission to any Connecticut State University. However, admission to competitive majors is not guaranteed. Students may be better served with the CSCU Pathway Transfer A.A. Degree: [Discipline] Studies. Visit www.ct.edu/transfer for more information.

Southern Connecticut State University

Students graduating with a degree in Liberal Arts and Sciences may transfer to SCSU having satisfied the Southern Liberal Education Program (LEP – their general education core), provided they have taken the correct math course, and in some cases, specific courses required by certain majors which are included in SCSU's LEP. The LEP LAS graduates will have the SCSU foreign language requirement waived. Capstone must be completed at SCSU. Southern provides active, regular advising at Gateway and two blocks away at Southern on the Green (900 Chapel Street, New Haven).

Pathway to Teaching – Southern Connecticut State University (SCSU)

The Pathway to Teaching is designed for Liberal Arts and Sciences students who intend to become certified elementary or secondary teachers in Connecticut. The Pathway prepares students to apply to the School of Education at SCSU and transfer seamlessly. Students interested in becoming elementary school teachers should contact Carmelita Valencia-Daye (cvalencia-daye@gatewayct.edu). Students interested in becoming a middle or high school teacher should contact Lauren Doninger (ldoninger@gatewayct.edu).

University of Connecticut

The Guaranteed Admission Program (GAP) is a transfer agreement between Connecticut Community Colleges and the University of Connecticut that guarantees admission to the University in the College of Liberal Arts and Sciences, College of Agriculture, Health and Natural Resources (select majors), or the School of Business. First time students who have attempted no more than 30 transferable credits may apply to GAP. Students must graduate from GCC with a minimum cumulative grade point average of 3.0 (3.3 for School of Business) and an associate degree in a Liberal Arts and Sciences. Former UConn degree-seeking students are not eligible to participate in GAP. Visit <http://admissions.uconn.edu/content/transfer/gap>. To complete the required application and begin the GAP advising process, see Dr. Lauren Doninger (Ldoninger@gatewayct.edu).

University of Bridgeport

Gateway Community College and the University of Bridgeport (UB) have an articulation agreement that guarantees admission to UB and provides substantial scholarships based on GPA. GCC students must have completed their associate's degree and have earned a 2.5 GPA to be guaranteed admission. Program pathways are specified in the articulation agreement. UB will accept all GCC general education courses as equivalent to UB core curriculum or electives. There is no application fee and students will receive joint GCC and UB advising. Students participating in the UB articulation are eligible for the UB accelerated degree program – IDEAL. To complete the application and begin the dual-admission advising process, see Dr. Lauren Doninger (Ldoninger@gatewayct.edu). Visit www.bridgeport.edu.

University of New Haven

Gateway Community College and the University of New Haven (UNH) have an articulation agreement that guarantees admission to UNH and provides substantial scholarships based on GPA. There is no application fee and students will receive joint GCC and UNH advising. With careful planning, students can transfer seamlessly. Visit www.newhaven.edu.

Albertus Magnus College

Gateway Community College and Albertus Magnus College (AMC) have an articulation agreement that guarantees admission with junior standing to all AA and AS degree graduates. The agreement includes the traditional AMC undergraduate program. AMC provides guaranteed scholarships based on GPA. There is no application fee and students will receive joint GCC and AMC advising. Visit www.albertus.edu.

NURSING

NURSING

Associate in Science

The Connecticut Community College Nursing Program (CT-CCNP) is an innovative associate degree program of study offered at six Connecticut Community Colleges. Gateway Community College offers evening classes with day and evening clinical experiences. The common nursing program offers a four-semester curriculum designed to prepare registered nurses to function in the professional role utilizing current standards of nursing practice. In addition, students within the program have the same admission and policy standards, which allows for greater student flexibility.

The Nursing Program is a four-semester program which, upon successful completion, awards an Associate in Science Degree. The curriculum is built upon courses from the social and biological sciences, liberal arts, and nursing. These courses provide the foundation for the practice of nursing. Six core values (critical thinking, safe and competent practice, caring, professionalism, communication, and holistic care) provide the framework for organizing the nursing curriculum.

A graduate of the nursing program is awarded an Associate in Science degree and is eligible to take the National Council Licensing Examination for Registered Nurses (NCLEX-RN).

Graduates can apply for licensure through the Connecticut Department of Public Health.

The graduate is prepared to function as an entry-level practitioner in health care settings such as general or specialty hospitals, extended care facilities, doctors' offices, and clinics.

Approval and Accreditation

All of the programs are individually approved by the Connecticut State Board of Examiners for Nursing with the consent of the Commissioner of the Connecticut Department of Public Health and are accredited by the Accreditation Commission for Education in Nursing (ACEN) located at 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; P: 404-975-5000, www.acenursing.org.

The Role of the Associate Degree Graduate within the Scope of Nursing Practice

The Nursing Program will provide the graduate with the knowledge and technical skills to practice in a safe, effective and competent manner within the legal and ethical framework for an entry-level Registered Nurse. The scope of practice for the Associate Degree graduate is to provide and manage care for a diverse group of individuals, families and communities in collaboration with members of the health care team consistent with the CT-CCNP core values.

For more information, please contact Mary Beth Banks, Enrollment Services Assistant, at MBanks@gatewayct.edu.

Advisement, Application Process, Admission Requirements

Please refer to the Nursing Information Packet that can be found in the nursing section on the Gateway Community College website - www.gatewayct.edu.

NURSING - END OF PROGRAM STUDENT OUTCOMES

Upon successful completion of the Nursing Program, the graduate will:

1. Integrate the principles of the natural, physical, social, biological and behavioral sciences, and nursing theory to provide holistic care to individuals, families, and groups across the wellness-illness continuum
2. Integrate nursing process and critical thinking skills for decision-making in nursing practice
3. Provide safe and competent care to individuals, families and groups utilizing evidence-based practice, quantitative reasoning and technological proficiency
4. Integrate effective communication skills through professional interactions with individuals, families, groups, and the health care team
5. Create an environment where therapeutic interventions reflect a respect for human dignity
6. Collaborate as a member of a multidisciplinary health team
7. Integrate accountability and responsibility for practice within the legal and ethical standards of the nursing profession
8. Function in the professional role utilizing current standards of nursing practice.

PROGRAM OF STUDY

The following program of study reflects a full-time curriculum plan that students enrolled in the nursing program are required to complete for graduation. Many students make the decision to enroll in the nursing program on a part-time basis, taking the general education courses prior to the nursing courses. Non-nursing courses must be taken in the semester indicated in the plan of study below or may be taken earlier; nursing courses must be taken in the stated sequence.

The admission and pre-requisite requirements of BIO*211: Anatomy & Physiology I, BIO*212: Anatomy & Physiology II, and ENG*101: English Composition are credits (11 credits) that are part of the total 68 credits required for graduation. BIO*211 and ENG*101 must be completed prior to submitting an application; BIO*212 may be in progress and the applicant may be accepted pending successful completion with a grade of C+ or higher. Please refer to the Nursing Information page 172 of this packet for a complete list of admission requirements.

A grade of **C** is required for all co-requisite courses in the nursing plan of study unless a higher grade is required for admission to the program. Co-requisite courses must be satisfactorily completed before or during the semester in which they are scheduled in the curriculum. Students who fail to complete required co-requisite courses may be dismissed from the program.

ADMISSION REQUIREMENTS	<u>Credits</u>		<u>Credits</u>
+BIO*211: Anatomy & Physiology I	4		
+ENG*101: English Composition	3		
PRE-REQUISITE REQUIREMENTS:			
+BIO*212: Anatomy & Physiology II	4		
FIRST SEMESTER		SECOND SEMESTER	
NUR*101: Introduction to Nursing Practice	8	NUR*102: Family Health Nursing	8
+BIO*235: Microbiology	4	NUR*103: Pharmacology for Families Across the Life Span	1
+PSY*111: General Psychology	3	+PSY*201: Life Span Development	3
		+SOC*101: Principles of Sociology	3
THIRD SEMESTER		FOURTH SEMESTER	
NUR*201: Nursing Care of Individuals and Families I	9	NUR*203: Nursing Care of Individuals and Families II	8
NUR*202: Pharmacology for Individuals and Families with Intermediate Health Care Need	1	NUR*204: Pharmacology for Individuals Families, & Groups with Complex Health Care Needs	1
+ENG*102: English Composition & Literature	3	NUR*205: Nursing Management and Trends	2
		+Elective: Humanities++^ or Fine Arts	3

Total Program Credits - 68 credits (General Education Credits - 30 credits; Nursing Credits - 38 credits)

+ There may be a prerequisite course that must be successfully completed prior to taking the course.

++ Norwalk Community College requires one interdisciplinary course to fulfill core curriculum requirements

^ Naugatuck Valley Community College requires COM*100 to fulfill core curriculum requirements.

RETAIL MANAGEMENT/FASHION MERCHANDISING

RETAIL MANAGEMENT/FASHION MERCHANDISING

Associate in Science

Retail and fashion are exciting and vital industries in our economy. This program prepares students for careers with retail, wholesale, and manufacturing organizations in buying, merchandising, fashion coordination, and sales promotion. Practical training is provided through field work experiences, including New York City. The program courses may be transferred to bachelor's degree programs. For more information, contact the Program Coordinator, Rose Luglio at 203.285.2198 or rluglio@gatewayct.edu

RETAIL MANAGEMENT/FASHION MERCHANDISING PROGRAM OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Identify core concepts of retail management and fashion merchandising and their role in society and the global economy.
- Describe the legal and ethical environments of the retail and fashion industries.
- Demonstrate information literacy through research skills and the use of technology.
- Demonstrate analytical, problem-solving, and decision-making skills applicable to retail management and fashion merchandising.
- Apply effective written and oral communication skills to business situations.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	PSY* 111	General Psychology I	3
Quantitative Reasoning	QR	MAT* 109 or higher	Intermediate Algebra	3
Scientific Knowledge & Understanding	SK		Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Critical Analysis/Logical Thinking	CALT	BES* 218	Entrepreneurship	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				21-22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
BMK* 201	Principles of Marketing	3
BMK* 220	Sales	3
BMK* 255	Fashion Analysis	3
Gen Ed - QR	MAT* 109 Quatitative Literacy (or higher)	3
Gen Ed - WC I	ENG* 101 Composition	3
	Total Credit Hours	15

Second Semester

Course #	Title	Credits
BMK* 103	Principles of Retailing	3
BMK* 257	Textiles	3
BMK* 295	Field Experience I	3
CSA* 135	Spreadsheet Applications	3
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Credit Hours	15

Third Semester

Course #	Title	Credits
ACC* 110 or ACC* 113	Basic Accounting or Principles of Financial Accounting	3
Gen Ed - OC	Business Communication	3
BMK* 215	Principles of eBusiness	3
Gen Ed - CALT	BES* 218 Entrepreneurship	3
BMK* 241	Principles of Advertising	3
	Total Credit Hours	15

Fourth Semester

Course #	Title	Credits
BMK* 296	Field Experience II	3
Gen Ed - SP	PSY* 111 General Psychology I	3
Gen Ed - SK	Choose one course in BIO*, CHE*, EAS*, EVS*, PHY*	3-4
Electives	Business	6
	Total Credit Hours	15
	Total Program Credit Hours	60-61

RETAIL MANAGEMENT / FASHION MERCHANDISING

Certificate

The certificate program is designed to offer an abbreviated study in retailing and fashion merchandise to prepare for work in these industries or to build upon an existing degree to provide additional career opportunities. Students may complete the program in two semesters. Students should check with their advisor during the scheduling process to make sure courses are taken in proper sequence and any prerequisites have been met. Students will be able to apply the credits earned towards an AS degree in Retail Management and Fashion Merchandising. For more information, contact the Program Coordinator, Rose Luglio, at 203.285.2198 or rluglio@gatewayct.edu.

RETAIL MANAGEMENT / FASHION MERCHANDISING CERTIFICATE OUTCOMES

Upon successful completion of all program requirements, graduates should be able to:

- Understand the basic theory and practice of retail management and merchandising
- Understand competition and its relationship to private enterprise
- Explain the marketing concept for retailers and fashion manufacturers
- Understand the importance of planning to retail and fashion organizations
- Read, understand, and prepare standard types of business communications

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
BMK* 210	Principles of Marketing	3
BMK* 215	Principles of eBusiness	3
BMK* 241	Principles of Advertising	3
BMK* 255	Fashion Analysis	3
	Total Semester Credit Hours	12

Second Semester

Course #	Title	Credits
BES* 218	Entrepreneurship	3
BMK* 103	Principles of Retailing	3
BMK* 257	Textiles	3
	Total Semester Credit Hours	9
	Total Credit Hours	21

SCIENCE

ENVIRONMENTAL SCIENCE AND TOXICOLOGY

Associate in Science

The Environmental Science and Toxicology program offers students a broad educational approach to the many careers available to them upon graduation. The growth in the number of businesses in the environmental science and toxicology fields has resulted in a high demand for qualified technicians. Employment opportunities exist in such areas as field services, laboratory services, regulatory, fish, wildlife and natural resource management, information management systems (including Geographic Information Systems), pollution prevention, remediation, safety and health, solid and hazardous waste, water and wastewater, air pollution, and public health protection. For additional information, please contact Department Chairperson, R.E.Tremblay at rtremblay@gatewayct.edu or Counselor John Mullane at (203) 285-2095 or e-mail at (jmullane@gatewayct.edu).

ENVIRONMENTAL SCIENCE AND TOXICOLOGY PROGRAM OUTCOMES

Upon successful completion of this degree program, graduates should be able to:

- Understand contemporary environmental issues in the social sciences, humanities, and natural sciences
- Know federal, state, and local laws, regulations, and standards affecting environmental science, toxicology, and forensic science operations
- Apply concepts of chemistry, biology, physics, and mathematics to environmental science, toxicology, and forensic science
- Take and analyze for pollutants and toxins air, water, and soil samples in the field and in the laboratory
- Identify career opportunities in the environmental science, toxicology, and forensic science fields
- Summarize the basic concepts of public health and occupational health and safety
- Use computers for data processing, information management, and research in environmental science, toxicology, and forensic science
- Understand and apply basic concepts of effective oral and written communication and documentation
- Understand basic concepts of human relations and group dynamics
- Work effectively both individually and as a member of a group
- This program can be used to meet the recently upgraded requirements for wastewater treatment plant operator licensure by the CT Department of Health Services. Students interested in transferring to a four-year institution may do so through this program. Arrangements for transfer should be made before registering for the freshman year. For information, call Math/Science department chair, R.E. Tremblay at (203) 285-2185 or e-mail at (rtremblay@gatewayct.edu) or Counselor John Mullane at (203) 285-2095 or e-mail at (jmullane@gatewayct.edu).

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 137 or MAT* 175	Intermediate Algebra or College Algebra and Trigonometry	3
Scientific Knowledge & Understanding	SK	BIO* 105 or BIO* 121	Introduction to Biology or General Biology	4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Oral Communication	OC	COM* 171	Fundamentals of Human Communication	3
Total General Education				22

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
CET* 116	Computer Applications for Technology	3
Gen Ed - WC I	ENG* 101 Composition	3
EVS* 100 or EVS* 114	Introduction to Environmental Science or Environmental Science	3-4
Gen Ed - QR	MAT* 137 Intermediate Algebra or MAT* 175 College Algebra and Trigonometry	3
Gen Ed - SP	Choose one course in Social Phenomena	3
	Total Semester Credit Hours	15-16

Second Semester

Course #	Title	Credits
Gen Ed - SK	BIO* 105 Introduction to Biology or BIO* 121 General Biology	4
CHE* 121	General Chemistry I	4
Gen Ed - OC	COM* 171 Fundamentals of Human Communication	3
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
EVS* 200	Toxicology	3
	Total Semester Credit Hours	17

Third Semester

Course #	Title	Credits
CHE* 122	General Chemistry II	4
MAT* 167	Principles of Statistics	3
PHY* 121	General Physics I	4
Gen Ed - CALT	PHL* 111 Ethics	3
	Total Semester Credit Hours	14

Fourth Semester

Course #	Title	Credits
CHE* 231	Quantitative Chemical Analysis w/ Environmental Appls.	4
EVS* 296	Internship	4
Electives	Restricted (see below)	6 - 7
	Total Semester Credit Hours	14-15
	Total Program Credits	60-62

Restricted Electives: BIO* 121, BIO* 122, BIO* 235, CHE* 211, CHE* 212, EAS* 102, EAS* 106, EAS* 14, ENV* 110, MAT* 186, MAT* 254, MAT* 256, PHY* 122, PHY* 221, PHY* 222, POL* 208, WMT* 101, WMT* 102, WMT* 103, WMT* 105

ENVIRONMENTAL SCIENCE AND TOXICOLOGY

Certificate

The Environmental Science and Toxicology certificate prepares students for entry-level technician positions in the fields of environmental science, toxicology, and forensic science or to continue their studies beyond the certificate to receive a two- or four-year degree.

ENVIRONMENTAL SCIENCE AND TOXICOLOGY CERTIFICATE PROGRAM OUTCOMES

Upon completion of this certificate program, graduates should be able to:

- Know federal, state, and local laws, regulations, and standards affecting environmental science operations
- Apply chemistry, biology, physics, and mathematics to environmental science, toxicology, and forensic science
- Take and analyze for pollutants and toxins air, water, and soil samples in the field and in the laboratory
- Identify career options in the environmental science, toxicology, and forensic science fields
- Explain the basic concepts of public health and occupational health and safety

PROGRAM REQUIREMENTS

Course #	Title	Credits
BIO* 105	Introduction to Biology	4
CHE* 121	General Chemistry I	4
CHE* 122	General Chemistry II	4
CHE* 231	Quantitative Chemical Analysis w/Environmental Appls.	4
MAT* 137	Intermediate Algebra	3
EVS* 100 or EVS* 114	Introduction to Environmental Science or Environmental Science	3 - 4
EVS* 200	Toxicology	3
Electives	Restricted (see below)	3-4
	Total Semester Credit Hours	28-30

Restricted Electives: BIO* 121, BIO* 122, BIO* 235, CHE* 211, CHE* 212, EAS* 102, EAS* 106, EAS* 14, ENV* 110, MAT* 186, MAT* 254, MAT* 256, PHY* 122, PHY* 221, PHY* 222, POL* 208, WMT* 101, WMT* 102, WMT* 103, WMT* 105

NATURAL SCIENCES AND MATHEMATICS

Associate in Science

The Natural Sciences and Mathematics program prepares qualified students to work at research facilities as laboratory or research assistants and/or continue their studies in the sciences at a four-year institution. For more information, contact Mark Bruno at (203) 285-2353 or e-mail mbruno@gatewayct.edu.

NATURAL SCIENCES AND MATHEMATICS PROGRAM OUTCOMES

Upon successful completion of all requirements, graduates should be able to:

- Explain the methodology used in scientific research
- Recognize ethical issues and understand the social responsibility involved in scientific decision making
- Communicate both orally and in writing
- Prepare, conduct, document, and interpret scientific experiments using the laboratory manual as a legal document
- Understand the basic principles of the natural and physical sciences
- Understand the basic principles of algebra, trigonometry, and pre-calculus
- Create, compile, and run a computer program
- Incorporate an interdisciplinary approach to investigating scientific problems
- Generate research documents using the Internet

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP		Choose one course in Social Phenomena	3
Quantitative Reasoning	QR	MAT* 172 or MAT* 175	College Algebra or College Algebra and Trigonometry	3
Scientific Knowledge & Understanding	SK	CHE* 121	General Chemistry	4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Scientific Reasoning	SR	CHE* 122	General Chemistry II	4
Total General Education				23

SUGGESTED COURSE SEQUENCE

First Semester

Course #	Title	Credits
Gen Ed - SK	CHE* 121 General Chemistry I	4
COM* 171	Fundamentals of Human Communication	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 172 College Algebra or MAT* 175 College Algebra and Trigonometry	3
Gen Ed - SP	Choose one course in Social Phenomena	3
	Total Semester Credit Hours	16

Second Semester

Course #	Title	Credits
Gen Ed - SR	CHE* 122 General Chemistry II	4
Gen Ed - WC II	ENG* 102 Literature and Composition or ENG* 200 Advanced Composition	3
MAT* 186	Pre-Calculus	4
Elective	Math or Science	4
	Total Semester Credit Hours	15

Third Semester

Course #	Title	Credits
BIO* 121 or BIO* 211	General Biology or Anatomy & Physiology I	4
MAT* 254	Calculus I	4
PHY* 121	General Physics I	4
Elective	Math or Science	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
BIO* 122 or BIO 212	General Biology II or Anatomy & Physiology II	4
Gen Ed - CALT	PHL* 111 Ethics	3
PHY* 122	General Physics II	4
Elective	Math or Science	3
	Total Semester Credit Hours	14
	Total Credit Hours	60

TECHNOLOGY

CLEAN WATER MANAGEMENT

Certificate

The Clean Water Management Certificate will train students to meet the skill and knowledge specifications required by higher level water pollution control facility operators in one of the more than 100 public and private plants in the state following the guidelines of the CT Department of Environmental Protection (DEP). The program will provide classroom and laboratory-based academic preparation for the Class I, II, III and IV Wastewater Treatment Plant Operator certification examinations administered by the DEP. Specialized wastewater courses may be offered at local municipal wastewater treatment plants. For more information, contact Eric Flynn at (203) 285-2371 or e-mail eflynn@gatewayct.edu).

Learning Outcomes:

- Working knowledge of wastewater treatment operations including preliminary, primary, secondary, tertiary, nutrient removal and disinfection treatment as well as the handling and disposal of sludge/biosolids;
- Working knowledge of the levels of treatment necessary to protect aquatic life and human health in Long Island Sound and other Connecticut surface waters and groundwaters;
- Working knowledge of the laboratory test methods necessary to ensure the proper operation of wastewater treatment plants, protect surface and groundwater quality as well as human health, and meet all state and federal regulatory and permit requirements;
- Knowledge to become eligible to take and pass the Class I, II, III or IV CT DEP Wastewater Treatment Plant Operator Certification Examinations.

PROGRAM REQUIREMENTS

First Semester

Course #	Title	Credits
CWM* 106	Introduction to Utility Management	3
CWM* 108	Chemistry, Biology & Mathematics of Clean Water	4
CWM* 110 or CWM* 112	Clean Water I or Clean Water II	3
Elective	CWM / ENV / EVS / WMT	3
	Total Semester Credit Hours	13

Second Semester

Course #	Title	Credits
CWM* 112 or CWM* 114	Clean Water II or Clean Water III	3
ENV* 110	Environmental Regulations	3
Elective +	CWM / ENV / EVS / WMT	3
Elective ++	Biology	4
	Total Semester Credit Hours	13
	Total Credit Hours	26

SOLAR TECHNOLOGY

Certificate

The Solar Technology Certificate will teach students operational skills and will impart a basic understanding of photovoltaic (solar electric), solar thermal (water/air/heating/effects of wind), and passive solar equipment, including course work in electricity and electronics. Contextualized instruction in related academic math and computer skills will enable program graduates to compare and contrast, estimate the costs, evaluate performance, and understand the overall effectiveness of various types of solar installations. Successful graduates will be eligible for the North American Board of Certified Energy Practitioners (NABCEP) PV Entry-Level Exam. For information, please contact Eric Flynn at (203) 285-2371 or e-mail eflynn@gatewayct.edu.

Learning Outcomes:

- Working knowledge of the benefits and limitations of a solar energy system and conducting an economic assessment of its return on investment;
- Basic understanding of state and federal regulations and permit requirements in the energy systems field;
- Understanding of the importance of safety in an energy system environment;
- Knowledge of solar technology field to become eligible for the NABCEP entry-level "Certificate of Knowledge" exam
- Knowledge of solar electrical work to become eligible for the Connecticut Solar PV licensing exams (PV-1, PV-2);
- Knowledge of solar electrical work to become eligible for the Connecticut Solar Thermal licensing exams (ST-1, ST-2)

First Semester

Course #	Title	Credits
EET* 110	Electric Circuits I	4
ENV* 100	Introduction to Alternative Energy Sources	3
ENV* 181	Solar Thermal Systems	3
MEC* 234	Electromechanical Controls	4
	Total Semester Credit Hours	14

Second Semester

Course #	Title	Credits
CAD* 126	Electronics Graphics/CAD	3
CET* 116	Computer Applications for Technology	3
EET* 136	Electronics I	4
ENV* 182	Solar PV Systems I	3
	Total Semester Credit Hours	13
	Total Credit Hours	27

WATER MANAGEMENT

Certificate

The Water Management Certificate covers the operation of water treatment plants from both ground and surface water sources as well as the water distribution systems that deliver the treated water to customers. It assures an adequate supply of water for domestic, commercial, industrial, and public use. Two main areas of water management are water treatment and water distribution. Connecticut continually needs qualified individuals in the water treatment and distribution areas to fill positions in the increasing number of plants. Requirements for advanced certification to qualify for such positions presently include formal course work. Gateway's Water Management Certificate program offers a sequence of courses to prepare students for the Connecticut Department of Health certification examinations. For more information, contact Wesley Winterbottom at (203) 285-2354 or e-mail at wwinterbottom@gatewayct.edu.

Successful completion of the program provides the necessary education requirements to take the CT Department of Public Health's highest class water industry license examinations (Class IV Water Treatment and Class III Distribution). If successful, graduates are licensed as Operators-in-Training; OIT licenses become full licenses after work experience requirements are met. CT DPH licenses are recognized by most other states.

PROGRAM REQUIREMENTS

First Semester

Course #	Title	Credits
WMT* 101	Water Treatment and Distribution	6
CWM* 106	Introduction to Utility Management	3
	Total Semester Credit Hours	9

Second Semester

Course #	Title	Credits
ENV* 110	Environmental Regulations	3
WMT* 102 or WMT* 103	Special Topics in Water Treatment * Special Topics in Water Distribution *	3
	Total Semester Credit Hours	6
	Total Credit Hours	15

* If both the CT DPH Class IV Water Treatment and Class III Water Distribution Operator-in-Training Examinations are to be taken, it is highly recommended that both of these classes be taken.

FIRE TECHNOLOGY AND ADMINISTRATION

Associate in Science

The program in Fire Technology and Administration trains and educates competent leaders in fire protection, prevention, and administration. It also provides training and education for insurance companies and industries involved in fire prevention and protection.

Fire technologists work in career and volunteer fire departments; local, state, and federal government agencies; industry, architectural and construction firms, and insurance organizations. They must recognize the need for fire prevention activities, the necessity of educating both children and adults in fire safety, and the importance of enforcing fire prevention codes.

Because fire technologists encounter a broad spectrum of problems and must be well versed in many subjects, the work of the fire technologist is seldom routine.

The Associate in Science degree in Fire Technology and Administration aligns with the National Fire Academy (NFA) standardized fire science courses under the Fire and Emergency Service Higher Education (FESHE) model. The goal of the FESHE initiative is to ensure a clear and consistent path for professional development for members of the fire service. Colleges and Universities can seek recognition from the NFA by meeting the curriculum for their associate or bachelor's degree programs. For more information email DMarcarelli@gatewayct.edu.

GENERAL EDUCATION REQUIREMENTS

Competency Area	Code	Course #	Course(s) Required	Credits
Written Communication I	WC	ENG* 101	Composition	3
Written Communication II	WC	ENG* 102 or ENG* 200	Literature & Composition or Advanced Composition	3
Social Phenomena/Knowledge/ Understanding	SP	ECN* 101	Macroeconomics	3
Quantitative Reasoning	QR	MAT*115, MAT* 137 or or higher	Math for Science & Technology, Intermediate Algebra (or higher)	3
Scientific Knowledge & Understanding	SK	CHE* 111	Concepts of Chemistry	4
Critical Analysis/Logical Thinking	CALT	PHL* 111	Ethics	3
Oral Communication	OC	BBG* 210	Business Communication	3
Total General Education				22

PROGRAM REQUIREMENTS

First Semester

Course #	Title	Credits
FTA* 112	Computer Applications for Technology	3
FTA* 116	Building Construction	3
Gen Ed - WC I	ENG* 101 Composition	3
Gen Ed - QR	MAT* 115, MAT* 137 (or higher)	3
Gen Ed - OC	BBG* 210 Business Communication	3
	Total Semester Credit Hours	15

Second Semester

Course #	Title	Credits
FTA* 118	Fire Prevention and Inspection	3
FTA* 122	Fire Behavior and Combustion	3
FTA* 126	Safety and Survival	3
Gen Ed - SK	CHE* 111 Concepts of Chemistry	4
Gen Ed - WC II	ENG* 102 Literature & Composition or ENG* 200 Advanced Composition	3
	Total Semester Credit Hours	16

Third Semester

Course #	Title	Credits
FTA* 210	Water Supply & Hydraulics	3
FTA* 216	Municipal Fire Administration	3
FTA* 219	Fire Investigation I	3
Gen Ed - SP	ECN* 101 Macroeconomics	3
Gen Ed - CALT	PHL* 111 Ethics	3
	Total Semester Credit Hours	15

Fourth Semester

Course #	Title	Credits
FTA* 212	Legal Aspects of Emergency Services	3
FTA* 217	Occupational Safety and Health for Emergency Services	3
FTA* 227	Fire Protection Systems	3
FTA* 229	Fire Investigation II	3
FTA* 230	Strategy & Tactics	3
	Total Semester Credit Hours	15
	Total Credit Hours	61

COURSE DESCRIPTIONS

Courses with an asterisk (*) have been converted to the Community College System Common Course Numbers.

❖❖❖* 298 Special Topics Courses

1-6 S.H.

Provides students the opportunity to enroll in courses that address a specific need or demand within a particular discipline. For specific course content, please consult the semester course schedule. Special Topics courses may not be used to meet program requirements; however, they do carry elective credit in the specific discipline or as a general elective. A Special Topics course may or may not be transferable to other institutions. Students should seek the consent of their faculty advisor prior to selecting a Special Topics course. Prerequisites: Please consult semester course schedule.

ACCOUNTING

ACC* 100 Basic Accounting

3 S.H.

Covers the fundamental concepts of accounting. Provides an overview of key topics in financial and managerial accounting. Examines the use of accounting reports by business managers, investors, creditors, and other stakeholders. Topics include financial statements, the accounting cycle, accounting for service businesses, merchandising operations, cash and payroll, internal controls and cost behavior. Supplemented with software applications. Note: this course is not open to students who have completed ACC* 113 or higher with a grade of C- or better.

ACC* 113 Principles of Financial Accounting I

3 S.H.

Examines the structure of accounting and the accounting equation. Studies the basic essentials which include journalizing and posting transactions; preparing the trial balance; preparing financial statements and journalizing and posting adjusting and closing entries. Introduces the basic concepts of asset and liability measurement, both current and long-term, and revenue determination by examination of specific accounts. Corporate organizations and retained earning accounts are studied.

ACC* 117 Principles of Managerial Accounting

3 S.H.

Presents basic concepts and practice of accounting's role in providing information to managers to assist in planning, control, and decision making. Topics include cost accounting systems, cost behavior relationships, analysis for managerial decisions, and the budget process. Prerequisite: ACC* 113.

ACC* 125 Accounting Computer Application I

3 S.H.

Use accounting software to complete the accounting cycle. Topics include cash receipts, cash disbursements, accounts receivable, accounts payable, and payroll taxes. Various software packages will be presented, but emphasis will be on Quickbooks. Prerequisites: ACC* 113 or BOT* 165.

ACC* 241 Federal Taxes I

3 S.H.

Interprets and applies laws in preparing federal income tax returns for individuals. Prerequisite: ACC* 113.

ALLIED HEALTH

HLT* 103 Investigations in Health Careers

3 S.H.

Designed to assist students in meeting the expectations of a health care curriculum and career. Students will become familiar with rigors of higher education and the specific skills needed to maximize their opportunity for academic and clinical success. 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.

HLT* 107 Methods of Learning in a Clinical Curriculum

3 S.H.

Designed to assist traditional and non-traditional first year college students to meet the expectations of a curriculum in health related fields. The intent is to familiarize the students with the rigors of higher education and to provide specific skills which will maximize the students' opportunity for academic and clinical success. The course will include a comprehensive overview of the duties and responsibilities associated with clinical education and clinical competency. Interdisciplinary learning strategies, correlating clinical and didactic education, life management skills, work ethics and critical thinking skills so critical for all health care providers will be emphasized. Participation in field work and classroom visits are required.

ANTHROPOLOGY

ANT* 105 Introduction to Cultural Anthropology (SP)

3 S.H.

The student of people's interactions in communities, behaviors, beliefs, and institutions. It examines theories of how cultures are created and searches for deeply embedded patterns of meanings cross cultures. Compares and studies our own patterns and behaviors in an effort to gain a better understanding of how local and global communities interact. Pre-requisite: Eligibility for ENG* 101.

ARCHITECTURE

ARC* 133 Technical Drafting

3 S.H.

Introduces the principles of engineering drawing. Covers the use of drafting instruments, good lettering practices, geometric construction, orthographic projection, sectional and auxiliary views, surface developments, machine screw threads, dimensioning, fits, and tolerances. Introduces geometric dimensioning and tolerancing. Two hours of lecture / two hours of laboratory.

ART

ART* 101 Art History I (AD)

3 S.H.

Surveys art and architecture from prehistoric times through the Middle Ages. Presents art as a fundamental aspect of human existence during a wide range of periods and cultures. Includes the art of indigenous cultures in Africa and the Americas, as well as the art of the ancient world. Emphasizes history and formal appreciation of art through the use of text, slides, reproductions, and original works. Requires museum trips.

ART* 102 Art History II (AD)

3 S.H.

Surveys art and architecture from the Renaissance to the late nineteenth century. Surveys the Renaissance in Italy and Northern Europe and the Baroque, Rococo, Romantic, Impressionist, and Post-Impressionist periods. Emphasizes history and formal appreciation of art through the use of text, slides, reproductions, and original works. Requires museum trips.

ART* 103 Art History III

3 S.H.

Surveys modern and contemporary art and architecture from the mid nineteenth century to the present. Emphasizes history, issues, and formal appreciation of art through the use of text, slides, reproductions, and original works. Requires museum and gallery visits. Prerequisite: ART* 101 or 102.

ART* 109 Color Theory

3 S.H.

Studies the interaction of color. Works with collage and paints to formulate presentations ranging from fundamental problem solving to individual expression. Emphasizes the use of color and its properties. Requires field trips and outside assignments. (6 studio hours)

ART* 111 Drawing I

3 S.H.

Introduces traditional drawing materials and techniques and examines drawing from life, composition, and design. Students work with a variety of subjects, including still life, interior, landscape, and human form. Requires sketchbook, outside assignments, and museum visits. (6 studio hours)

ART* 112 Drawing II

3 S.H.

Expands the fundamentals of drawing acquired in Drawing I. Focuses on the structure and development of drawing as a form of artistic expression. Includes figure drawing, sketchbook, outside assignments, and museum trips. Prerequisite: ART* 111 or instructor's permission. (6 studio hours)

ART* 113 Figure Drawing I

3 S.H.

Applies the knowledge acquired in Drawing I and II. Concentrates on traditional and contemporary approaches to the representation of the figure. Focuses on the costumed and nude figure as well as portraiture. Requires outside assignments and museum trips. (6 studio hours) Prerequisite: ART* 111 or instructor's permission.

ART* 121 Two Dimensional Design

3 S.H.

Investigates elements of art and principles of two-dimensional design and the nature of design. Explores space, shape, color, line, texture, and value, beginning with simple relationships and building toward more complex systems of composition. Requires outside assignments and museum visits. (6 studio hours)

ART* 122 Three Dimensional Design

3 S.H.

Investigates the elements and principles of three-dimensional design, emphasizing forms and spatial organization. Studies the various types of three-dimensional forms found in both art and nature. Explores the use of various materials, tools, and techniques used to create three-dimensional forms. Requires outside assignments and museum visits. (6 studio hours)

ART* 131 Sculpture I**3 S.H.**

Introduces principles and materials that facilitate student response to three-dimensional forms. Stresses the concepts of modeling, carving, construction, portrait sculpture, and casting. Requires museum and gallery visits. (6 studio hours)

ART* 132 Sculpture II**3 S.H.**

Sculpture II builds on Sculpture I by presenting more challenging work. Applies knowledge acquired in Sculpture I and concentrates on traditional approaches to the representation of the human form. Requires outside assignments and museum visits. (6 studio hours) Prerequisite: ART* 131 or instructor's permission.

ART* 141 Photography I**3 S.H.**

Explores the fundamentals of still photography and processing, basic camera techniques, and dark room procedures. The course emphasizes examining photographic images and making pictures. Picture-making assignments cover camera operation and stress making deliberate artistic choices during picture taking. Most picture taking will be done outside of class time. Lab instruction will include black and white darkroom techniques, workshops, and demonstrations. Students are required to supply their own 35 mm SLR camera. (6 studio hours)

ART* 142 Photography II**3 S.H.**

Builds on skills learned in Photography I by applying those skills to more challenging work. This is primarily a black and white photography course with an introduction to color. Combines picture-taking projects and darkroom printing techniques with the study of artistic photography. Includes lectures with slides and text. Requires outside assignments. Students are required to supply their own 35 mm SLR camera. (6 studio hours) Prerequisite: ART* 141 or instructor's permission.

ART* 151 Painting I**3 S.H.**

Introduces basic oil painting methods and procedures. Emphasizes composition, paint handling, and color. Explores still life, interior scenes, and landscape in both group and individual projects. Includes study of master works from various periods. Requires outside assignments and museum visits.

ART* 152 Painting II**3 S.H.**

Builds on knowledge acquired in Painting I. Presents more challenging work including the figure. Encourages the pursuit of individual expression by stressing a painting sequence that works toward a personal statement. (6 studio hours) Prerequisite: ART* 151.

ART* 167 Printmaking I**3 S.H.**

An introductory studio course in the methods and materials of printmaking: etching, woodblock printing, linoleum printing, collagraph, monotype, and photo-transfer. The basic elements of art will be articulated through these printmaking methods. Prerequisites: ART* 111 and ART* 121.

ART* 176 Digital Video Art I**3 S.H.**

Investigates digital video as an extension of the fine arts. Formal attributes which make up the language of video including time, sound, content, and composition will be investigated as tools of expression and devices for creating meaning. Basic production techniques such as story boarding, cinematography, lighting, and editing will be acquired through creative problem solving. Through both a survey of historical and contemporary video art and in responding to collective and individual assignments, students will become critically observant and sensitive to video as a time-based medium. Digital video art's relationship to fine arts as well as to other media is covered.

ART* 251 Painting III**3 S.H.**

Applies knowledge acquired in Painting I and II. Concentrates on traditional and contemporary approaches to the representation of the figure. Focuses on the nude and costumed figure and portraiture. Requires outside assignments and museum visits. (6 studio hours) Prerequisite: ART* 151 or instructor's permission.

ART* 261 Web Design I**3 S.H.**

Introduces students to web design concepts using programs such as Adobe Photoshop, Illustrator, and Dreamweaver along with utilizing HTML coding and Macromedia. Students will dissect and investigate websites in order to gain knowledge and critical insight into the design of websites. (6 studio hours) Pre- or co-requisite: GRA* 149.

ART* 293 Internship in Art I**3 S.H.**

Provides students with the opportunity to gain "real-life" experience in Studio Art/Graphic Design. The student is required to work 120 hours during the semester. Hours will be arranged by mutual consent of the student and the supervisor.

ART* 299 Independent Study**3 S.H.**

Provides the opportunity to pursue, with greater depth, individual studio or research projects. Must be arranged in the semester prior to registration. Requires advance departmental approval and supervision by the art instructor. Prerequisites: Instructor's permission and sophomore standing.

AUTOMOTIVE

AUT* 110 GM Engine Repair

3 S.H.

Focuses on basic engine theory, nomenclature, and skills necessary to service and repair current model year General Motors engines. Upon completion of the course, students should be able to identify engine problems and make repairs to return an automobile to satisfactory operating condition. One hour of lecture / four hours of laboratory.

AUT* 112 GM Specifications

2 S.H.

Includes the selection, use, and care of specialized shop tools and manuals. Describes the many manipulation skills needed in simple mechanical operation. The course is designed for students with no previous experience as well as for advanced students who desire further knowledge. Four hours of laboratory.

AUT* 114 GM Electrical Systems

3 S.H.

Introduces GM ASEP program students to automotive electrical theory and repair in accordance with NATEF standards. Presents content specified in the current GM dealership electrical curriculum. Includes content covered in ASE exam A6 Electrical/Electronic Systems. Two hours lecture / three hours lab. Pre-requisite: AUT* 112.

AUT* 116 GM Suspension and Steering

3 S.H.

Enables the student to study and understand the diagnosis and repair of General Motors steering and suspension systems, including wheel alignment. Provides a thorough knowledge of wheel and tire problems and repair. One hour of lecture / four hours of laboratory.

AUT* 118 GM Braking Systems

3 S.H.

Introduces GM ASEP program students to automotive braking system theory and repair in accordance with NATEF standards. Presents content specified in the current GM dealership brakes curriculum. Includes content covered in ASE exam A5 Brakes. Two hours lecture / three hours lab. Pre- or co-requisite: AUT* 112.

AUT* 130 Power Plant

3 S.H.

Covers in both theory and practice, the automotive engine and its' subsystems. Students will gain the skills necessary to service and repair current automotive engines. Students will learn to diagnose engine problems and repair them properly. One hour of lecture/four hours lab.

AUT* 132 Automotive Systems & Shop Practices

3 S.H.

This course surveys all of the vehicle systems. Students will be introduced to safety and shop practices. Additional emphasis will be on the lube maintenance and vehicle inspection process. One hour lecture/four hours lab.

AUT* 134 Electrical/Electronic Systems

3 S.H.

Covers in both theory and practice, automotive electrical and electronic systems. Students will study the most updated automotive electronic systems and become familiar with electrical circuits, alternators, starters, batteries, and electrical components. Theory, operation, diagnosis, and repair procedures will be covered. Emphasizes lecture and related laboratory experiences in the diagnosis and service of automotive electrical systems and their components. One hour lecture/four hours lab.

AUT* 136 Steering and Suspension Systems

3 S.H.

Covers in both theory and practice, the diagnosis and repair of automotive steering and suspension systems including vehicle alignment. A comprehensive presentation of automotive wheel and tire concerns and their repair will be examined. Theory, machines, operations, diagnosis, and repair procedures will be covered. One hour lecture/four hours lab.

AUT* 138 Braking Systems

3 S.H.

Covers in both theory and practice, all automotive hydraulic braking systems. It covers all types of disc and drum brakes and repair procedures. Modern traction control and stability control systems will be explored. Theory, operation, diagnosis and repair procedures will be covered. One hour lecture/four hours lab.

AUT* 140 Honda Power Plant

4 S.H.

Covers in both theory and practice, the automotive power plant and its' subsystem and the skills necessary to service and repair current Honda/Acura engines. Two hours lecture/six hours lab.

AUT* 141 Honda Express Service

3 S.H.

Provides the student with fundamentals of operation and maintenance procedures including researching vehicle service information. Students will learn basic automotive shop safety, tool and equipment use. Upon completion of the course, students should be able to safely and accurately perform Honda's A1-B1 vehicle inspection and maintenance service with efficiency and 100% accuracy. Two hours lecture/four hours lab.

AUT* 144 Honda Electrical/Electronic Systems**4 S.H.**

Covers in both theory and practice, automotive electrical and electronic systems. Students will study the most updated Honda/Acura electronic systems and be familiar with electrical circuits, alternators, starters, batteries, and all automotive electrical components. Theory, operation, diagnosis, and repair procedures will be covered. Emphasizes lecture and related laboratory experiences in the diagnosis and service of Honda/Acura electrical systems and their components. Two hours lecture/six hours lab. Pre-requisite: AUT* 141

AUT* 146 Honda Steering and Suspension Systems**4 S.H.**

Covers both in theory and practice, the diagnosis and repair of Honda/Acura steering and suspension systems including alignment. Includes a complete presentation of automotive wheel and tire problems and how to repair them. Theory, operation, diagnosis, and repair procedures will be covered. Two hours lecture/six hours lab.

AUT* 148 Honda Braking Systems**4 S.H.**

Covers in both theory and practice, all Honda/Acura hydraulic brake systems, all types of disc and drum brakes and repair procedures. Honda/Acura traction control and stability control systems will be explored. Theory, operation, diagnosis, and repair procedures will be covered. Two hours lecture/six hours lab.

AUT* 159 ASE Prep & Shop Practices**1 S.H.**

Presents all aspects of systems pertaining to the G1 and A5 ASE exam. Test taking skills that are tailored to the ASE test will be explored. Theory, operation, and study and practice evaluations will be taught. Course surveys all vehicle systems. Students will be introduced to safety and shop practices as well as lube maintenance and vehicle inspection process. One hour lecture / one hour lab.

AUT* 160 Internship I**1 S.H.**

Students participate in a fifteen-hour course to review basic automotive training and to complete all paper work for the ten-week summer dealer internship. Prerequisite: Completion of Semester I courses.

AUT* 161 GM Internship 1A**1 S.H.**

Students participate in three weeks of practical training at either a GM dealership or AC Delco repair facility during their freshman fall semester. Students will reinforce automotive skills and theory acquired during the freshman fall semester. All automotive students are required to attend an Internship Orientation session prior to starting their internship.

AUT* 162 GM Internship 1B**1 S.H.**

Students participate in four weeks of practical training at either a GM dealership or AC Delco repair facility during their freshman winter intersession. Students will reinforce automotive skills and theory acquired during the freshman fall semester. All automotive students are required to attend an Internship Orientation session prior to starting their internship.

AUT* 163 GM Internship 1C**1 S.H.**

Students participate in three weeks of practical training at either a GM dealership or AC Delco repair facility during their freshman winter intersession. Students will reinforce automotive skills and theory acquired during the freshman fall semester. All automotive students are required to attend an Internship Orientation session prior to starting their internship.

AUT* 170 Practicum I**4 S.H.**

Designed to provide students supervised practical application of previously studied theory. An opportunity to focus on the development of professional and technical competencies as well as on-the-job training. Students are responsible for finding their own placement. Each credit equates to roughly one hundred hours of experience.

AUT* 171 GM Internship 2**4 S.H.**

Students participate in 12 weeks (approximately 400 hours) of practical training at either a GM dealership or AC Delco repair facility during their freshman summer semester. Students will reinforce automotive skills and theory acquired during the freshman spring semester.

AUT* 180 Diesel Technology**3.5 S.H.**

Provides students up to date information on the construction, operation, service and repair of diesel engines. In addition to detailing the fundamentals of operation, this course will cover engine control systems, fuel management, and emissions control systems. Two hours lecture/three hours lab.

AUT* 181 Honda Practicum I**1 S.H.**

Designed to provide students supervised practical application of previously studied theory. An opportunity to focus on the development of professional and technical competencies as well as on-the-job training. Students are responsible for finding their own placement. Each credit equates to roughly one hundred and ten hours of experience.

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- AUT* 201 GM Engine Performance** **3 S.H.**
Introduces GM ASEP program students to fuel and emission system theory and repair in accordance with NATEF standards. Presents content specified in the current GM dealership engine performance curriculum. Includes content covered in ASE exam A8 Engine Performance. Two hours lecture / three hours lab. Pre-requisite: AUT* 112.
- AUT* 203 GM Manual Drivetrain** **3 S.H.**
Introduces GM ASEP program students to manual drivetrain theory and repair in accordance with NATEF standards. Presents content specified in the current GM dealership manual drivetrain curriculum. Includes content covered in ASE exam A3 Manual Drivetrain. Two hours lecture / three hours lab. Pre-requisite: AUT* 112.
- AUT* 205 GM Automatic Drivetrain** **3 S.H.**
Introduces GM ASEP program students to automatic drivetrain theory and repair in accordance with NATEF standards. Presents content specified in the current GM dealership automatic drivetrain curriculum. Includes content covered in ASE exam A2 Automatic Drivetrain. Two hours of lecture / three hour of laboratory. Prerequisite: AUT* 203.
- AUT* 207 GM Climate Control and Safety Systems** **3 S.H.**
Introduces GM ASEP program students to climate control and safety system theory and repair in accordance with NATEF standards. Presents content specified in the current GM dealership safety curriculum. Includes content covered in ASE exam A6 and A7. Two hours of lecture / three hours of laboratory. Pre-requisite: AUT* 112.
- AUT* 226 Service, Parts, Dealer Operations** **3 S.H.**
Presents the overall operation of the service and parts departments. The skills developed in this class can be applied to enhance the knowledge base of the student who has the technical skills, but needs the larger industry focus to complete the well-rounded student. Students will prepare for the C1, P2, & P4 ASE exams.
- AUT* 231 Engine Management Systems** **3 S.H.**
Covers in both theory and practice, basic performance and emissions theory and nomenclature, as well as the skills necessary to service and repair computerized automotive fuel and ignition systems. Theory, operation, diagnosis, and repair procedures will be covered. One hour lecture/four hours lab.
- AUT* 233 Manual Drivetrain Systems** **3 S.H.**
Covers in both theory and practice, proper procedures for the diagnosis and repair of automotive manual drive transmissions and transaxles. Places particular emphasis on clutches, drive (half) shafts, and universal joints, along with rear axle and four-wheel drive components. Theory, operation, diagnosis, and repair procedures will be covered. One hour lecture/four hours lab.
- AUT* 235 Automatic Drivetrain Systems** **3 S.H.**
Covers in both theory and practice, the transference of engine power through the transmission to the final drive units on both front and rear wheel drive cars. Includes maintenance and repair of automatic transmission, drive shaft assemblies and differentials. Transmission/transaxle mechanical, hydraulic and electrical operation. Service, overhaul, mechanical/electrical diagnosis procedures will be covered. Use and application of diagnostic equipment. Theory, operation, diagnosis, and repair procedures will be covered. One hour lecture/four hours lab.
- AUT* 237 Climate Control & Restraint Systems** **3 S.H.**
Presents in both theory and practice, the proper procedures for the diagnosis and repair of air conditioning systems, heating, and engine cooling systems, operating systems, and related controls. Also covers the diagnosis and repair of restraint components and systems. Theory, operation, diagnosis, and repair procedures will be covered. One hour lecture/four hours lab.
- AUT* 238 Advanced Electrical Diagnosis & Performance Tuning** **3 S.H.**
Covers advanced electrical theory, diagnosis, and repair. An overview of various hybrid systems will be presented. Investigation of high performance applications of automotive upgrades. Students will receive training theory, hands-on repair and diagnosis of modern hi-tech power plants and gasoline powered vehicles with an emphasis on performance. One hour lecture/four hours lab. Pre-requisite: AUT* 134.
- AUT* 241 Honda Engine Management Systems** **3 S.H.**
Presents both in theory and practice, basic performance and emissions theory and nomenclature, as well as the skills necessary to service and repair computerized automotive fuel and ignition systems on Honda and Acura vehicles. Theory, operation, diagnosis, and repair procedures will be covered. Two hours lecture/six hours lab.
- AUT* 243 Honda Manual Drivetrain Systems** **4 S.H.**
Covers in both theory and practice, proper procedures for the diagnosis and repair of Honda/Acura manual drive transmissions and transaxles. Particular emphasis on clutches, drive (half) shafts, and universal joints, along with rear axle and four-wheel drive components. Theory, operation, diagnosis, and repair procedures will be covered. Two hours lecture/six hours lab.
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AUT* 244 Honda Advanced Electrical Systems**4 S.H.**

Covers advanced electrical theory, diagnosis, and repair of Honda/Acura vehicles. An overview of various hybrid systems will be presented. Investigation of high performance applications of automotive upgrades. Students will receive training theory, hands-on repair and diagnosis of modern hi-tech powerplans and gasoline powered vehicles with an emphasis on performance. Two hours lecture/six hours lab. Prerequisite: AUT* 144.

AUT* 245 Honda Automatic Drivetrain Systems**4 S.H.**

Covers both in theory and practice, the transference of engine power through transmission to final drive units on both front and rear wheel drive Honda/Acura vehicles. Includes maintenance and repair of automatic transmissions, drive shaft assemblies and differentials, transmission/transaxle mechanical, hydraulic, and electrical operation. Service, overhaul, mechanical/electrical diagnosis procedures and use and application of diagnostic equipment will also be covered. Theory, operation, diagnosis, and repair procedures will be covered. Two hours lecture/six hours lab.

AUT* 247 Honda Climate Control & Restraint Systems**4 S.H.**

Presents in both theory and practice, the proper procedures for the diagnosis and repair of Honda/Acura air conditioning systems, heating, and engine cooling systems, operating systems, and related controls. Also covers the diagnosis and repair of restraint components and systems. Theory, operation, diagnosis, and repair procedures will be covered. Two hours lecture/six hours lab.

AUT* 258 Honda Master Automobile Service Technology**5 S.H.**

Covers advanced automotive systems. Heavy emphasis will be placed on safety and proper use of tools and equipment. Information acquisition will be presented. Theory, operation, diagnosis, and repair procedures will be covered. Three hours of lecture / four hours of laboratory. Prerequisites: AUT* 251, 252, 253, 254.

AUT* 260 Internship III**2 S.H.**

Students participate in 5 weeks of additional practical training (200 hours) at a dealership or automotive repair facility. All automotive students are required to attend an Internship Orientation session prior to starting their internship.

AUT* 261 GM Internship 3A**1 S.H.**

Students participate in three weeks of practical training at either a GM dealership or AC Delco repair facility during their sophomore fall semester. Students will reinforce automotive skills and theory acquired during the sophomore fall semester. All automotive students are required to attend an Internship Orientation session prior to starting their internship.

AUT* 263 GM Internship 3C**1 S.H.**

Students participate in three weeks of practical training at either a GM dealership or AC Delco repair facility during their sophomore spring semester. Students will reinforce automotive skills and theory acquired during the sophomore fall semester. All automotive students are required to attend an Internship Orientation session prior to starting their internship.

AUT* 270 Practicum II**2 S.H.**

Designed to provide students supervised practical application of previously studied theory. An opportunity to focus on the development of professional and technical competencies as well as on-the-job training. Students are responsible for finding their own placement. Each credit equates to roughly one hundred hours of experience.

AUT* 271 GM Internship 4**3 S.H.**

Students participate in ten weeks of practical training at either a GM dealership or AC Delco repair facility during their sophomore summer semester. Students will reinforce automotive skills and theory acquired during the sophomore spring semester. All automotive students are required to attend an Internship Orientation session prior to starting their internship.

AUT* 272 Practicum III**3 S.H.**

Designed to provide students supervised practical application of previously studied theory. An opportunity to focus on the development of professional and technical competencies as well as on-the-job training. Students are responsible for finding their own placement. Each credit equates to roughly one hundred hours of experience.

AUT* 280 Internship V**6 S.H.**

Students participate in 16 weeks of advanced practical training (640 hours) at a dealership or garage to learn advanced automotive electrical/electronic and fuel injection experience. All automotive students are required to attend an Internship Orientation session prior to starting their internship.

AUT* 281 Honda Practicum II**1 S.H.**

Designed to provide students supervised practical application of previously studied theory. An opportunity to focus on the development of professional and technical competencies as well as on-the-job training. Students are responsible for finding their own placement. Each credit equates to roughly one hundred and ten hours of experience.

AUT 282 Advanced Fuel Injection Systems **3.5 S.H.**
Covers advanced fuel injection system theory, nomenclature, and diagnosis and repair, and includes OBDII, scan diagnostics, emission control systems, exhaust gas analyzer, and digital storage oscilloscopes. Two hours of lecture / three hours of laboratory. Prerequisite: AUT* 141, AUT* 201, or AUT* 231.

AUT* 283 Honda Practicum III **2 S.H.**
Designed to provide students supervised practical application of previously studied theory. An opportunity to focus on the development of professional and technical competencies as well as on-the-job training. Students are responsible for finding their own placement. Each credit equates to roughly one hundred and ten hours of experience.

AUT* 284 Honda Practicum IV **1 S.H.**
Designed to provide students supervised practical application of previously studied theory. An opportunity to focus on the development of professional and technical competencies as well as on-the-job training. Students are responsible for finding their own placement. Each credit equates to roughly one hundred and ten hours of experience.

AUT* 285 Honda Practicum V **1 S.H.**
Designed to provide students supervised practical application of previously studied theory. An opportunity to focus on the development of professional and technical competencies as well as on-the-job training. Students are responsible for finding their own placement. Each credit equates to roughly one hundred and ten hours of experience.

BIOLOGY

BIO* 100 Basic Biology (SK) **3 S.H.**
A one-semester course in Biology that introduces students to the chemical and cellular bases of life, diversity and classification of life and the mechanisms that different organisms require for survival and reproduction. Also introduces the basis principles of inheritance and evolution as well as interactions with other organisms and their environment.

BIO* 105 Introduction to Biology (SR & SK) **4 S.H.**
Deals with the chemical and cellular bases of life, cell structure and function, growth, diversity and classification, life cycles of plant and animal representatives. Principles of genetics, organic evolution, and ecology. Involves fieldwork and dissection. Three hours of lecture / three hours of laboratory. Pre-requisite: Eligible for ENG* 101.

BIO* 110 Principles of the Human Body (SK) **3 S.H.**
Introduces students to the basic structures and functions of the human body. An overview of chemical and cellular processes will be covered. Explores the major organs and systems. Students will gain insights into how their own bodies work. Lecture only.

BIO* 113 Physiology of Aging (SK) **3 S.H.**
Studies the physical aging process of older individuals to give the student knowledge of age-related cognitive and physical changes and the impact those changes have on the social and psychological functioning of the individual.

BIO* 115 Human Biology (SR & SK) **4 S.H.**
Deals with the structure of the body in relation to function in both health and disease. The laboratory exercises explore the human body's biological systems. Involves dissection. Three hours of lecture / three hours of laboratory.

BIO* 121 General Biology I (SR & SK) **4 S.H.**
Deals with basic chemistry, the molecular and cellular bases of life, metabolism, and the growth and reproduction of cells. Covers the molecular and chromosomal bases of heredity and evolution. Details of Prokaryotes, Protista, and Fungi are included. Involves some fieldwork and dissection. Prerequisites: High school biology, BIO* 100, BIO* 105, or instructor's permission. Three hours of lecture / three hours of laboratory.

BIO* 122 General Biology II (SR & SK) **4 S.H.**
Builds on concepts in General Biology. Deals with the diversity and classification of life, plant and animal structures, functions and evolution, animal behavior and the immune system, and the interaction between various forms of life and their environments. Involves some fieldwork and dissection. Prerequisite: BIO* 121 or instructor's permission. Three hours of lecture / three hours of laboratory.

BIO* 211 Anatomy and Physiology I (SR & SK) **4 S.H.**
Covers human body structure and function, emphasizing the basic concepts of chemistry and cells, tissues and the integumentary, skeletal, joint, muscular, and nervous systems. Laboratory work parallels the material covered in lecture. Dissection is required. Prerequisite: BIO* 105. Three hours of lecture / three hours of laboratory.

BIO* 212 Anatomy and Physiology II (SR & SK)**4 S.H.**

Builds on the knowledge learned in BIO* 211. Covers the endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems. Laboratory work parallels the material covered in lecture. Prerequisite: BIO* 211 with a grade of C or better. Dissection is required. Three hours of lecture / three hours of laboratory.

BIO* 213 Human Cadaver Anatomy (SR & SK)**4 S.H.**

Explores the human anatomy integrating online course work and human cadaver dissection. Prerequisite: BIO* 211 and BIO* 212 with a grade of B+ or higher.

BIO* 217 Survey of the Human Cadaver**1 S.H.**

Surveys a prosected human cadaver. All organ systems are studied with special reference to clinical significance.

BIO* 235 Microbiology (SR & SK)**4 S.H.**

Considers the general characteristics of microorganisms, emphasizing host-parasite relationships, details of morphology and physiology, and the control of epidemiological problems. Emphasizes human and animal pathogens. Laboratory work parallels the material covered in lectures and provides experience in microbial techniques. Prerequisites: BIO* 105 or BIO* 121 or 122 or BIO* 211 or 212 or instructor's permission.

BIOMEDICAL ENGINEERING TECHNOLOGY

BME* 110 Biomedical Technology**2 S.H.**

Introduces the interdisciplinary nature of the Biomedical Engineering Technology program through engineering and medical terminology. Presents hospital and industrial policies, procedures, and codes with an emphasis on safety. Introduces biomedical instrumentation, control systems, and the man-machine interface.

BME* 112 Biomedical Electrical Circuits**5 S.H.**

Presents electrical circuits for biomedical instrumentation. Introduces and develops concepts of voltage, resistance, current, and power in DC and AC circuits. Analyzes RLC circuits in DC and AC circuit applications. Presents Thevenin, maximum power transfer, and superposition theorems. Introduces electromagnetism and its effects. Four hours of lecture / two hours of laboratory.

BME* 114 Biomedical Electronics (Course has not been offered in the past two years)**5 S.H.**

Presents electronics for biomedical instrumentation. Stresses reliability and safety. Introduces electron tubes and solid-state devices. Presents design and application of amplifiers, oscillators, high input impedance devices, and precision timers. Introduces and develops power supply design, voltage regulation, and high power-high speed switching. Four hours of lecture / two hours of laboratory. Prerequisite: BME* 112.

BME* 116 Physiological Systems**4 S.H.**

Examines human anatomy and physiology, using chemical, mechanical, and electrical system models. Presents biopotential generation and regulatory control systems. Develops computer simulations of physiological events. Three hours of lecture / two hours of laboratory.

BME* 210 Biomedical Instrumentation (CALT)**4 S.H.**

Presents the principles, applications, and design of biomedical instrumentation. Includes discussion of measuring, monitoring therapeutic, and clinical laboratory equipment. Presents imaging techniques and computers. Three hours of lecture / two hours of laboratory. Prerequisite: EET* 136.

BME* 212 Biomedical Equipment Design (CALT)**4 S.H.**

Develops instrumentation standards and construction techniques for biomedical equipment. Design of the documentation and hardware/software for a biomedical instrumentation system. Uses commercial instrumentation systems for analysis and testing. Two hours of lecture / four hours of laboratory. Prerequisite: BME* 210.

BME* 214 Advanced Biomedical Instrumentation**4 S.H.**

Presents applications of data acquisition and analysis, imaging, and control systems. Develops microprocessor- and computer-based instrumentation. Systems studied include Medical Networking, Expert Systems, Fiberoptics, Lasers, and Tomography. Three hours of lecture / three hours of laboratory. Prerequisite: BME* 210.

BME* 220 Biomedical Practicum**3 S.H.**

Applies safety, calibration, and troubleshooting techniques to practical situations. Also provides on-site practical experience in a hospital. Prerequisites: Approval of Program Coordinator.

BUSINESS (GENERAL)

BBG* 101 Introduction to Business**3 S.H.**

Introduces the principles and practices of business management. Applies management principles to various types of business and industrial organizations and organizational problems.

BBG* 115 Business Software Applications**3 S.H.**

Stresses the usefulness of computers in business. Students will learn in this hands-on course how to use word processing software for writing and editing, data base software to organize and search for information, and spreadsheet software to perform calculations on tables of numbers.

BBG* 200 Principles of Business Statistics**3 S.H.**

Presents the statistical techniques appropriate for dealing with problems in business and social science. Students will learn basic statistical concepts and methods of solving statistical problems, becoming familiar with those problems on a microcomputer. Considers the measures of central tendency and dispersion, index numbers, time series, probability, statistical inference, regression and correlation analysis, and decision-making theory. Prerequisites: Sufficient score on the placement exam or MAT* 137 or higher or instructor's permission.

BBG* 210 Business Communication (OC)**3 S.H.**

Emphasizes basic communication skills in a business environment. After a review of grammar, punctuation and sentence structure, students will plan, organize, and edit several forms of business communications, including memos, letters, resumes, and reports. Oral presentations are part of the curriculum. Social networking for business purposes and its various uses is also discussed; students evaluate the advantages and potential risks. Prerequisite: Eligibility for ENG* 101.

BBG* 231 Business Law I**3 S.H.**

Provides knowledge and understanding of fundamental legal principles and their application to business transactions. Stresses laws relating to administrative regulations, consumer protection, environmental protection, torts and crimes, and contracts.

BBG* 232 Business Law II**3 S.H.**

Emphasizes laws relating to personal property, bailments, sales, negotiable instruments, agency and employment, and business organizations. Prerequisite: BBG* 231.

BBG* 240 Business Ethics**3 S.H.**

Introduces students with little or no background in philosophy or ethics to traditional and contemporary ethical theory. This course critically examines both the theories and applications of moral problems in business. Topics include employee rights and responsibilities, pay equity and comparable worth, whistle blowing, trade secrets and confidentiality, conflict of interest, discrimination and sexual harassment, pollution, consumer protection, professional ethics, truth-telling in business dealings, social responsibility of business, and fiduciary responsibility to stockholders and stakeholders. Prerequisite: ENG* 101.

BBG* 294 Business Internship**3 S.H.**

Provides an opportunity for students to gain experience in business and industry. Students will be required to spend a minimum of five hours per week at their internship site. Furthermore, in-class sessions will be held during the semester for orientation and evaluation purposes. Prerequisites: fifteen earned credits in Business courses, ENG* 101, a minimum GPA of 2.75. Students will be interviewed during the semester prior to taking this course. Instructor's permission required for registration.

BUSINESS (ENTREPRENEURSHIP)

BES* 218 Entrepreneurship (CALT)**3 S.H.**

Introduces students to what entrepreneurship is and how to realize the dream of starting a business by developing an entrepreneurial mindset. Emphasis is placed on how and where to start, feasibility and competitive analyses, market research, customer validation, legal forms or organization, capital acquisition, and other start-up issues. Students will learn the business model canvas approach and how to write a business plan. The skills learned can be applied to developing entrepreneurial initiatives for non-profits, social ventures, and entrepreneurial initiatives in existing larger businesses and organizations. Pre-requisite: Eligibility for ENG* 101

BES* 219 Management and Growth – Small Business**3 S.H.**

Focuses on concepts, processes, and techniques for managing and growing a small business, whether it is a for-profit, non-profit, or social venture. Topics include marketing to attract new customers and keep existing customers, human resource management, and financial management to maintain proper financial records, budgetary decisions, cash flow, and payment of taxes and loans to maintain profitability. Students who want to own and grow their own businesses should take this course.

BES* 239 Business Plan**3 S.H.**

Prepares student to launch a business. Builds upon BES* 218 to take their business concept to the next level and develop a model and plan to launch a business. Will be hands-on where the student will take the role of the senior executive of the business. Pre-launch actions in marketing, legal, financial, and operations will be determined. Prerequisite: BES* 218. Pre- or Corequisites: ACC* 100 or ACC* 113 and BMK* 201.

BES* 295 Launch a Business (LAB)**3 S.H.**

Designed for students who are ready to launch a business, have an established business, or are working in a family-owned business. Students will execute pre-launch plans and build a MVP (Minimum Viable Product or Service), prepare and conduct a marketing campaign, file legal documents, obtain start-up funding, select a location, and operate the business part-time to discover a sustainable business model. The experiential learning approach will be used in this course where the students will create and operate their own small businesses. Students will be mentored by the instructor and other outside business experts. Prerequisite: BES* 218 or permission of the instructor

BUSINESS (FINANCE)

BFN* 110 Personal Finance (CALT)**3 S.H.**

Examines the basic principles and important concepts of personal finance. Includes personal budgeting, consumer credit, insurance, real estate, personal income taxes, retirement, investments, and safeguarding of assets. Prerequisite: Eligibility for ENG* 101

BFN* 126 Principles of Insurance**3 S.H.**

Examines the history, economics, and social values of insurance. Compares various contracts and coverage; studies the structure of the insurance industry; emphasizes principles such as sales, underwriting, claims, rate making and government regulations. Meets the education prerequisite for Connecticut Property and Casualty Insurance Broker examination.

BFN* 201 Principles of Finance**3 S.H.**

Surveys sources of short-, intermediate- and long-term funds for a business. Discusses stocks, bonds, investment, working capital, banking policy of systems, urban financing, and government financing. Prerequisites: ACC* 113, ACC* 117, CSA* 135, ECN* 101, 102, MAT* 166 or instructor's permission.

BUSINESS (MANAGEMENT)

BMG* 110 Public Utility Management**3 S.H.**

Introduces the management of water, gas, electric, and wastewater utilities. Introduction to utility management, planning regulations, finance, operation and maintenance, safety, public relations, customer service, environmental health and safety, legal and ethical issues. Designed to prepare individuals to meet the initial certification Continuing Education Unit Certification Requirements of the Connecticut Department of Health Services and the Connecticut Department of Energy and Environmental Protection. Also appropriate for practicing professionals who may desire to broaden and update their knowledge and skills.

BMG* 201 Principles of Supervision**3 S.H.**

Develops supervisory ability and judgment through a presentation of the principles and techniques of effective supervision. Topics include communication, motivation, training, personnel selection, disciplining, counseling, and controlling performance. Uses both case and incident study methods.

BMG* 202 Principles of Management**3 S.H.**

Introduces the study of management, which is both a discipline and a process. Major topic areas include the evolution and scope of management, decision making, planning, organizing, leading, and controlling. Emphasizes the importance of managing in a global environment and understanding the ethical implications of managerial decisions.

BMG* 203 Leadership**3 S.H.**

Provides an in-depth examination of the nature and importance of leadership concepts and principles as applied to organizational effectiveness. Leadership research, practice, and skills are emphasized in light of modern theories and applications. This course utilizes personal inventories, journals, service opportunities, discussion, and critical reflection to develop leadership skills and build an understanding of the role of leadership in organizations.

BMG* 210 Organizational Behavior**3 S.H.**

Presents the concepts and principles of modern management theory and practice as they apply to organizations. Emphasizes the functions of planning, organizing, directing, and controlling along with staffing and communications.

BMG* 216 Rates and Revenues**3 S.H.**

Covers the legal basis, principles, and concepts of public utility regulation and provides an overview for those new to regulatory policies. Determination of revenue, utility business models, and the ratemaking process are included. Students must be capable of critical business thinking and evaluation before enrolling in this course. Students should already be able to explain and apply basic public utility management skills. Prerequisites: C- or better in BMG* 110, BMG* 202, IDS 106.

BMG* 219 Asset & Infrastructure Management**3 S.H.**

Covers basic information, problems, and solutions associated with infrastructure and asset management. Topics include evaluation, preservation, and rehabilitation of existing infrastructures, repair materials, strategies, risk, fiscal and management concerns. Comprehensive knowledge of the fundamental processes and techniques required to establish an effective infrastructure asset management program will be provided. Systematic and risk-based processes for making decisions concerning the management and renewal of the utility's physical assets including infrastructure, fixed plant, and mobile equipment. Students should already be able to explain and apply basic public utility management skills. Prerequisites: C- or better in BMG* 110, BMG* 202, IDS 106.

BMG* 220 Human Resources Management**3 S.H.**

Introduces the legal and social function of Human Resource Management in today's dynamic business environment. Topics include personnel, planning, recruitment, testing, training, compensation, motivation, appraisals, discipline, and career management.

BMG* 221 Customer Relations**3 S.H.**

Introduces the fundamentals of developing best practices for internal customer service and the impact on external customer service. Explores the basic elements of setting internal expectations for service delivery, hands-off within the customer supply chain, and the five Ws of a hand-off (who, what, when, where, and why). Students should already be able to explain and apply basic public utility management skills. Prerequisites: C- or better in BMG* 110 and IDS 106.

BMG* 227 Risk Management**3 S.H.**

Covers risk management policies, business property risks, family property, and liability risks. Analyzes and discusses actual cases. Prerequisite: BFN* 126.

BUSINESS (MARKETING)

BMK* 103 Principles of Retailing**3 S.H.**

Explores the fundamentals of retailing and its scope and significance in our marketing system. Among the topics covered are the distinguishing characteristics of retailing, store classification, operations planning, location analysis, layout and design, the retail price, future trends, and retailing careers.

BMK* 201 Principles of Marketing**3 S.H.**

Presents the fundamentals of marketing and marketing theory. Emphasis will be on theories relevant to marketing and the business environment, marketing and the social environment, product strategies, distribution, promotion, and pricing.

BMK* 215 Principles of eBusiness**3 S.H.**

Presents the fundamentals of eBusiness focusing on e-marketing. Covers the concepts, tools, and strategies for exploring and understanding the opportunities and challenges associated with eBusiness.

BMK* 220 Sales**3 S.H.**

An introduction to the principles, methods, and techniques of selling and the application of these principles through individual sales demonstrations. Topics include creating value in the buy-seller relations, prospecting, sales call planning, communicating the message, closing the sale, as well as how to motivate, compensate and train sales people.

BMK* 230 Advertising and Promotion**3 S.H.**

Discusses special practices in retail advertising and sales promotion. Includes strategic promotional planning, preparing a media-wide retail promotional campaign, visual merchandising, and publicity. Discusses effective techniques in the preparation of retail copy.

BMK* 241 Principles of Advertising**3 S.H.**

Provides an overview of advertising and promotion from an IMC (integrated marketing communications) perspective. The economic, social and legal aspects of advertising will be covered. Focus will be on market research, market segmentation, media strategy planning, promotional messages, advertising media selection and metrics. Pre or Corequisite: BMK* 201.

BMK* 242 Retail Buying**3 S.H.**

Introduces the basic principles of buying merchandise for resale, sources of supply, determining and selecting suitable merchandise, negotiating for merchandise, basic buying considerations, and other related activities.

BMK* 255 Fashion Analysis**3 S.H.**

Analyzes the economic, psychological, and sociological factors in the development of fashion. Students obtain a knowledge of fashion terminology, fashion designers, color, line, design, and the stages in the fashion cycle. Studying the historical development of costume, from the Egyptian period through the twentieth century, helps the student interpret and discuss fashion trends.

BMK* 257 Textiles**3 S.H.**

Provides a background in and selling information for various textile products. Discusses standards for identifying high quality products and how to care for them. Focuses on materials, construction, methods of manufacturing, and basic styles in order to analyze the appeal of merchandise to customers.

BMK* 285 Current Marketing Topics**3 S.H.**

Designed to provide students with an understanding of the fundamentals of social media marketing and how it has grown into a powerful tool for marketers. Surveys the landscape of social media and how it can be used effectively and efficiently. Topics include social media platforms, social media marketing strategies, social media marketing mix, social communities, social publishing, social entertainment, social commerce, social media for consumer insights, and social media metrics. Pre- or Corequisite: BMK* 201.

BMK* 295 Field Experience I**3 S.H.**

Provides opportunity for students to gain experience in the fashion and retail industries, knowledge of a store's, manufacturer's, or other organization's policies, systems and job responsibilities and ethics. Students will be required to spend a minimum of 6 hours per week at their work site (paid or unpaid) as well as online and in-class discussions. Prerequisite: Eligibility for ENG* 101, minimum GPA of 2.5 and instructor's permission.

BMK* 296 Field Experience II**3 S.H.**

Provides the opportunity for students to build on the experience gained in Field Experience I or gain new experience in the fashion and retail industries. Gain knowledge of a store's, manufacturer's, or other organization's policies, systems, and job responsibilities and ethics. Students will be required to spend a minimum of 6 hours per week (approximately 90 hours total) at their work site (paid or unpaid) as well as online and in-class discussions. Pre- or Corequisite: BMK* 295, minimum GPA of 2.5 or instructor permission.

BUSINESS (REAL ESTATE)

BRE* 201 Real Estate Principles (Course has not been offered in past two years)**3 S.H.**

Covers land, business and market ownership, leases, advertising, financing, and mortgages. Aids the student in taking the Connecticut examination for agent or broker licensing.

BUSINESS OFFICE TECHNOLOGY

All Business Office Technology courses may be taken as a business or computer elective.

BOT* 111 Keyboarding for Information Processing I**3 S.H.**

Presents the keyboard and correct stroking techniques by means of the touch method and word processing computer software packages. Practical applications include simple tabulations, letters, memoranda, and short reports. Note: May not be taken concurrently with BOT* 137.

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- BOT* 112 Keyboarding for Information Processing II** **3 S.H.**
Improves on the skills developed in the beginning course and introduces a variety of production problems, including correspondence, tabulations, business forms, and reports. Prerequisite: BOT* 111. Note: may not be taken concurrently with BOT* 111.
- BOT* 137 Word Processing Applications (Word)** **3 S.H.**
Introduces students to the concepts of word processing and hands-on experience with computers and popular word processing software. Prerequisite: BOT* 111. Note: May not be taken concurrently with BOT* 111.
- BOT* 165 Small Business Office Accounting** **3 S.H.**
Provides students with knowledge of basic accounting procedures. Topics covered include preparation of financial reports, recording daily transactions, banking procedures, payroll preparation, and accounting applications on a computer. Recommended for students in career or one-year certificate programs only.
- BOT* 181 Medical Coding I** **3 S.H.**
Provides students with an in-depth study of basic International Classification of Disease, 9th rev. Clinical Modification (ICD-9-CM) and Current Procedural Terminology (CPT-4) coding. Diagnoses, procedures, signs, and symptoms will be studied and coded by students using the assigned textbook. The flow of medical records from the physician's office to hospital discharge will be tracked for insurance, risk management, and case study purposes.
- BOT* 182 Medical Coding II** **3 S.H.**
Continues the concepts introduced in Medical Coding I using International Classification of Disease, Clinical Modification (ICD-9-CM) and Current Procedural Terminology (CPT-4). Students will utilize medical records and case histories to code the diagnoses and procedures according to the level of care received in the appropriate medical facilities. Prerequisite: BOT* 181.
- BOT* 215 Word Processing Applications II (Word)** (Course has not been offered in the past two years) **3 S.H.**
Concentrates on applications and projects to promote competency with microcomputers using popular word processing software. Emphasizes recording, formatting, editing, and temporary and permanent revising. Prerequisite: BOT* 137 or instructor's permission.
- BOT* 217 Desktop Publishing (BOT 218)** (Course has not been offered in past two years) **3 S.H.**
Presents the concepts and applications of desktop publishing. Using personal computers and state-of-the-art software, students will learn the fundamentals of using desktop publishing to create newsletters, brochures, reports, fliers, and resumes. Prerequisite: Knowledge of Microsoft Windows and touch keyboarding (35 wpm).
- BOT* 219 Integrated Microsoft Office** **3 S.H.**
Students will work independently to solve production problems of increasing complexity using Microsoft Office (Word, Excel, Access, and PowerPoint). Prerequisites: CSA* 140. (Offered spring only)
- BOT* 220 Computerized Communication (Microsoft PowerPoint, e-mail, Internet)** **3 S.H.**
Provides students with hands-on experience using the Internet, e-mail and Microsoft PowerPoint presentation and voice-recognition software. In this activity-oriented course, students will use state-of-the-art software and hardware to develop skills in these areas. Prerequisite: Knowledge of Microsoft Windows.
- BOT* 251 Administrative Procedures** **3 S.H.**
Includes letter composition, keyboarding rough drafts, handling incoming and outgoing mail, records management, preparing itineraries and reports, telephone etiquette, business ethics and etiquette. Prerequisite: BOT* 137 or instructor's permission.
- BOT* 271 Legal Document Production** (Course has not been offered in past two years) **3 S.H.**
Helps students achieve the ability to type legal documents correctly and efficiently. Includes keyboarding legal terminology with speed and accuracy, understanding the use of legal documents, and knowing how to produce legal documents and correspondence. Offered in the fall semester of odd years (2005, 2007, etc.). Prerequisite: BOT* 112 and BOT* 137 or instructor's permission.
- BOT* 272 Legal Administrative Procedures** (Course has not been offered in past two years) **3 S.H.**
Applies keyboarding skills to prepare legal papers and correspondence and presents the court system and the sources of laws, law office ethics, non-court documents, litigations, and appeals. Offered in the fall semester of odd years (2005, 2007, etc.). Prerequisites: BOT* 112 and BOT* 137 or instructor's permission.
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BOT* 279 BOT Administrative Practicum**4 S.H.**

Provides on-the-job experiences in the offices of the College, area businesses, local lawyers' or doctors' offices or hospitals. Students are required to work a total of 125 hours during the semester. Hours will be arranged by mutual consent of the student and employer. In addition to the 125 hours, in-class session will be held which will involve online tutorials emphasizing soft-skills training. Additional meetings will be held during the semester for orientation and evaluation purposes. Note: Students must meet with an instructor during the semester prior to taking this course. Instructor's permission required for registration. Prerequisites: BOT* 251; BOT* 271 (legal) and BOT* 282 (medical) or instructor's permission. Minimum overall GPA 2.5 or higher.

BOT* 280 Medical Transcription and Document Production**3 S.H.**

Introduces medical terms and develops transcription techniques to produce acceptable copy within a time frame that meets real employment requirements. Enlarges medical vocabulary through the study of prefixes and suffixes used in general medicine. Prerequisite: BOT* 137 or instructor's permission.

BOT* 282 Medical Administrative Procedures**3 S.H.**

Presents the duties and responsibilities of the medical administrative assistant, including medical office ethics, how to deal with patients, health insurance, medical office software, telephone techniques, and filing. Prerequisite: BOT* 137 or instructor's permission.

BOT* 287 Foundations/Management of Medical Insurance**3 S.H.**

Designed to develop those abilities and skills that will enable students to define and explain the types of health insurance policies, contracts, and guideposts. Comparisons and analysis of insurance forms and application information are included. Emphasis will be placed on legal issues and medical record confidentiality. Prerequisite: HIM* 101 with a grade of C or better. (Offered spring only)

BOT* 291 Electronic Health Records**3 S.H.**

Provides a comprehensive understanding of the history, theory, and functional benefits of Electronic Health Records (EHR). Through practical, hands-on learning activities, students will learn how to scan, import, and convert health information into specialized EHR applications. Students will learn to review electronic health records for timeliness, completeness, accuracy, and appropriateness. Emphasis will be placed on the need for strict adherence to patient confidentiality laws, authorized release of information, and data security. Skills acquired in this course can be applied to the medical office, clinic, or medical records department of a hospital. Recommended preparation: basic computer proficiency. Prerequisite: HIM* 101 with a grade of C or better. (Offered fall only)

BOT* 295 Administrative Practicum**3 S.H.**

Provides on-the-job experience in the offices of the College, area businesses, local lawyers' or doctors' offices or hospitals. Students are required to work a total of 125 hours during the semester. Hours will be arranged by mutual consent of the student and employer. In-class sessions are held during the semester for orientation and evaluation purposes. Prerequisite: BOT* 251; Legal: BOT* 271 and BOT* 272; Medical: BOT* 280 and BOT*282. Note: Students must meet with instructor during the semester prior to taking this course. Instructor's permission required for registration.

CHEMISTRY

CHE* 101 Introductory Chemistry (SK)**3 S.H.**

Surveys important chemical theories and applications, including the atomic structure of matter, chemical bonding and energy changes, gas laws, stoichiometry, solutions, electrochemistry, organic chemistry, and biochemistry. Prerequisite: MAT* 115 or 137 or 137S or higher or placement in MAT* 142 or higher. Students wishing to transfer should take MAT* 137 or higher.

CHE* 111 Concepts of Chemistry (SR & SK)**4 S.H.**

Serve either as a survey course or as a preparatory course for general chemistry. Intended for students with little or no background in Chemistry or for students who need to meet a readmission requirement for nursing or other allied health programs. Also serves students who require a laboratory science course. Discusses fundamental principles, theories, and laws of chemistry, including organic chemistry and biochemistry. Three hours of lecture / three hours of laboratory. Prerequisite: MAT* 115 or 137 or 137S or higher or placement in MAT* 142 or higher. Students wishing to transfer should take MAT* 137 or .

CHE* 121 General Chemistry I (SR & SK)**4 S.H.**

Presents the fundamental principles of chemistry, including atomic structure, stoichiometry, chemical bonding, chemical reactions, and chemical and physical changes. Laboratory experiments consist of the basic techniques used for chemical analysis and chemical reactions. Three hours of lecture / three hours of laboratory. Prerequisite: MAT* 115 or 137 or 137S or higher or placement in MAT* 142 or higher. Students wishing to transfer should take MAT* 137 or Higher.

CHE* 122 General Chemistry II (SR & SK)**4 S.H.**

Builds on the knowledge learned in General Chemistry I. Includes reaction rates, electrochemistry, equilibrium conditions, pH, buffers and energy effects in chemical reactions. Three hours of lecture / three hours of laboratory. Prerequisite: CHE* 121.

CHE* 211 Organic Chemistry I**4 S.H.**

Presents bonding, formulation, and molecular shapes of organic molecules. Presents nomenclature, preparation, and creations of alkanes, cycloalkanes, alkenes, alkynes, and aromatics. Explains reaction mechanisms when necessary. The laboratory portion features the basic reaction and preparation techniques used in organic chemistry. The laboratory exercises investigate either the preparation or the reaction of the aforementioned chemical species. Three hours of lecture / four hours of laboratory. Prerequisite: CHE* 122 or instructor's permission.

CHE* 212 Organic Chemistry II**4 S.H.**

Builds on the knowledge learned in Organic Chemistry I, presenting the nomenclature, preparation, and creation of alcohols, ethers, aldehydes, ketones, carboxylic acids, esters, amines, and biomolecules. Explains reaction mechanisms when necessary. The laboratory exercises investigate either the preparation or the reaction of the aforementioned chemical species. Other laboratory exercises include using modern instrumentation to identify organic compounds. Three hours of lecture / four hours of laboratory. Prerequisite: CHE* 211 or instructor's permission.

CHE* 220 Biochemistry (SR & SK)**4 S.H.**

Provides an overview of the principal themes of biochemistry. The organization of amino acids, lipids, carbohydrates, and nucleic acids are addressed through a discussion of their hierarchical structure and their assembly into essential complexes in biological systems. Protein function is examined through the study of enzyme kinetics, the characterization of major metabolic pathways, and the interconnectivity of these pathways in tightly regulated networks. Three hours lecture/three hours lab. Prerequisites: BIO* 121, CHE* 121, CHE* 122 or instructor's permission.

CHE* 231 Quantitative Chemical Analysis with Environmental Applications (SR & SK)**4 S.H.**

Provides both theoretical and practical instruction in the fundamental principles of quantitative chemical analysis. Through both lecture and laboratory instruction, students will become proficient in how to perform a range of methods and techniques that are commonly applied in analytical settings. Students will be instructed in the use of statistics to evaluate the precision and accuracy of measurements. This knowledge will aid in assessing experimental data and will serve as a foundation for future work involving instrumental techniques. Emphasis will be placed on the specific methods employed for the analysis of toxic substances and environmental pollutants. Three hours lecture/three hours lab. Prerequisites: CHE* 121 and CHE* 122.

CLEAN WATER MANAGEMENT

CWM* 106 Introduction to Utility Management**3 S.H.**

Introduces areas of water and clean water (aka wastewater) including organization, planning, public relations, customer service, finances, environmental health and safety, security, operations and maintenance, human resources, information system and services, legal issues, support services, competition, continual improvement management and crisis communication.

CWM* 108 Chemistry, Biology & Mathematics of Clean Water**4 S.H.**

Provides the biology, chemistry and mathematics knowledge necessary to succeed in subsequent courses covering the operation and maintenance of municipal wastewater facilities. Emphasis is placed on application to municipal wastewater facilities with a goal of preparing students to successfully pass Class I, II and IV Wastewater Certification Examinations administered by the Connecticut Department of Environmental Protection.

CWM* 110 Clean Water I**3 S.H.**

Introduces the safe and effective operation of wastewater treatment plants including preliminary, primary, and secondary treatment and disinfection.

CWM* 112 Clean Water II**3 S.H.**

Introduces the safe and effective operation of wastewater treatment plants including security, surface and groundwater quality standards, sludge/biosolids handling, effluent disposal, biological processes and cycles, plant safety and maintenance, pumps, laboratory testing of wastewater and permits, records and reports. Two hours lecture/two hours lab. Prerequisite: CWM* 110, DEP Class 1 License or permission of instructor.

CWM* 114 Clean Water III **3 S.H.**
Introduces the safe and effective operation of wastewater treatment plants including odor control, nitrogen and phosphorous removal, wastewater reclamation and recycling, instrumentation and residual solids management. Two hours lecture/two hours lab. Co-requisite: CWM* 112, DEP Class 2 license or permission of instructor.

COMMUNICATIONS

COM* 101 Introduction to Mass Communication **3 S.H.**
Surveys the American mass media and communication complex. The focus will be on the various print and electronic mass media industries and the impact of mass communication on our society. Introduces the various forms of communication media, the role of media as it informs, entertains and persuades. Designed as an introductory course for those students who plan to major in communication and for those who want to be informed about the development of the influence of modern mass media. Prerequisite: Eligible for ENG* 101.

COM* 106 Introduction to Broadcasting (Course has not been offered in two years) **3 S.H.**
Surveys broadcasting in the United States from its beginning to the present. Emphasizes the physical nature of the medium, the historical accidents of its origin and growth, the economic basis of its operation, and the role of the broadcaster in our society.

COM* 107 Mass Communication and Advertising (Course has not been offered in two years) **3 S.H.**
Examines the social and economic aspects of advertising and consumer psychology, including the role of mass communication and advertising in marketing strategies. Presents legal restrictions, advertising practices, and issues and emphasizes the organization of the advertising industry today.

COM* 121 Journalism I **3 S.H.**
Examines the role of the newspaper in our changing society and introduces the practical aspects of newspaper production. Includes assignments in reporting, editorializing, feature writing, and editing. May require students to participate in the production of collegewide periodicals. Prerequisite: ENG* 101 or instructor's permission.

COM* 141 Television Production I **3 S.H.**
Introduces the art, practice, theory and history of television production. Both experienced and non-experienced students will benefit from this course through study, hands-on production and editing techniques, workshops and actual studio practice during which students will work on actual live and taped programs.

COM* 171 Fundamentals of Human Communication (OC) **3 S.H.**
Emphasizes effective communication skills through a balance of theory and practice in interpersonal, small group, and public speaking contexts. Stresses verbal and non-verbal communication, critical listening, and the processes of preparing and delivering oral presentations. Prerequisite: Eligibility for ENG* 101.

COM* 172 Interpersonal Communication **3 S.H.**
Develops oral communication skills in personal, family, and business relationships through practical applications and exercises. Provides an understanding of self and others. Examines assertiveness and interactive strategies.

COM* 173 Public Speaking (OC) **3 S.H.**
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. Prerequisite: Eligible for ENG* 101.

COM* 174 Advanced Public Speaking **3 S.H.**
Builds on the theory and practice of public speaking. Designed for professionals, advanced communication students, and for students needing to improve their presentation skills beyond an entry-level course. Prerequisite: COM* 173.

COM* 208 Mass Media and Society **3 S.H.**
Surveys the components of mass communication. Introduces the nature and complexity of mass media by examining its role in the political, economic, and social fabric of society.

COM* 299 Independent Study **3 S.H.**

COMPUTER AIDED DRAFTING *

CAD* 108 CAD Introduction**3 S.H.**

Introduces the procedures and techniques of Computer-Aided Design (CAD). Lectures cover production of orthographic and simple isometric drawings from basic entities and editing commands. One hour of lecture / four hours of laboratory. All classes are conducted in a computer laboratory. Corequisites: CET* 116 or equivalent and ARC*133 or equivalent.

CAD* 124 CAD: Electrical**1 S.H.**

Introduces students to the computer-aided drawing software of MultiSim and OrCAD. Students produce a variety of electrical and electronic schematics and diagrams. Students also learn to apply the principles of graphing to engineering technology. Three hours of laboratory. (CAD* 126 Electrical Graphics/CAD can be substituted for this course.)

CAD* 126 Electronics Graphics/CAD**3 S.H.**

Introduces the concepts and practical applications of computer-aided design for electrical and electronic circuits, using software such as MultiSim and OrCAD. Also introduces the simulation of electrical and electronic circuits. Three hours of lecture in a laboratory setting. CAD* 126 can be substituted for CAD* 124.

CAD* 200 3D CAD Modeling**4 S.H.**

Improves students' CAD competencies by presenting additional techniques and specialized commands. Two hours of lecture / four hours of laboratory. All classes are conducted in a computer laboratory. Prerequisite: CAD* 108 or equivalent.

CAD* 220 Parametric Design**3 S.H.**

Introduces the Solid Works parametric mechanical design software. Focuses on parametric modeling and includes topics such as the design process, rapid prototyping, and mechanism analysis. Students will design 3D solid parts, sheet metal parts, and assemblies and develop 2D documentation from them. Students will participate in individual and group design projects as appropriate. (Prior knowledge of CAD or permission of instructor required)

CAD* 271 CAD Solids Mechanical Pro-Engineer**3 S.H.**

Introduces the basic Pro-Engineer software operation including part creation, drawing and assembly. 3D objects are made and orthographic drawings are created. Pro-Engineer is 3D solid modeling software from parametric technology.

COMPUTER ENGINEERING TECHNOLOGY *

CET* 110 DC/AC Circuits**5 S.H.**

Presents the fundamental concepts of electric circuit behavior. Students will also learn basic DC and AC circuit analysis involving resistive, inductive, and capacitive elements and how reactance, resonance, and transformer relationships affect AC circuit response. Four hours of lecture / two hours of laboratory. Prerequisite: MAT* 095 or higher level math class.

CET* 116 Computer Applications for Technology**3 S.H.**

Introduces technology-driven reporting requirements for text, data and graphics, virtual instrumentation, computer simulations for technology problem solving, and determination of computer tools for technology issues. Stresses technical report preparation, including graphical and tabulated analysis of data, with appropriate calculations and conclusions displayed in a variety of formats. Computer skills used to access and apply technical information will also be included. Two hours of lecture / two hours of laboratory.

CET* 118 Advanced Computer Applications for Technology**3 S.H.**

Introduces technology-driven reporting requirements for text, data and graphics, virtual instrumentation, computer simulations for technology problem solving, and determination of computer tools for technology issues. Stresses technical report preparation, including graphical and tabulated analysis of data, with appropriate calculations and conclusions displayed in a variety of formats. Advanced computer skills used to access, transfer and apply technical information will also be included. Two hours of lecture / two hours of laboratory.

CET* 120 Computer Electronics**5 S.H.**

Surveys hardware and software computer elements beginning with semiconductor devices and theory. Topics covered include general and special purpose diodes and related circuits, rectifier circuits, clipping and clamping circuits, transistors (including BJT, FET and UJT), and amplifier, oscillator, power supply, and voltage regulation circuits. This course concludes with an introduction to op-amps and their basic applications. Four hours of lecture / two hours of laboratory. Prerequisite: CET* 110 or equivalent.

CET* 124 Structured Programming**4 S.H.**

Covers structured programming techniques as tools for problem solving in engineering and technology applications. Emphasizes program development, structure, and testing. Lab assignments reinforce the topics discussed in lecture. Three hours of lecture / two hours of laboratory. Pre or corequisite: CET* 116

CET* 126 Computer Servicing**4 S.H.**

Presents an overview of a microprocessing system with emphasis on hardware design, operation, troubleshooting, and servicing. The lab provides practical experience with electronic troubleshooting techniques. Actual servicing will take place on a basic microcomputing system. Three hours of lecture / two hours of laboratory. Pre or corequisite: CET* 116

CET* 145 Fundamentals of Voice and Cabling**4 S.H.**

Introduces students into the various hardware aspects of establishing communication links between computers and/or other end devices (printers, fax machines, telephony systems, video systems, data transmission systems). There is a growing need for experienced and knowledgeable voice and data cabling installation, maintenance, repair, and plant layout design technicians. Will utilize the Cisco program or similar title as a foundation, but will supplement this program with college-level report writing, laboratory experimentation, and theoretical analysis of the practical information contained in the Cisco on-line curriculum program. Two hours lecture / four hours of laboratory.

CET* 210 Computer Systems Software**4 S.H.**

Investigates the computer's hardware-software interface. Topics include CPU architecture and programming, interfacing with I/O devices, memory management, file systems, and an introduction to networking. Laboratory assignments include installation and troubleshooting of system software for stand-alone and networked devices. Three hours of lecture / two hours of laboratory. Pre or corequisite: CET* 116

CET* 220 Digital/Data Communications**4 S.H.**

Presents the fundamentals of digital and data communications, including serial and parallel transmission methodologies, media, protocol standards, and system architecture. Three hours of lecture / three hours of laboratory. Prerequisites: EET* 136 and EET* 256.

CET* 270 Computer Engineering Technology Practicum**3 S.H.**

Provides students with experience within the Computer Engineering Technology workplace. Students will gain knowledge and experience through technical training working closely with others to service users and customers under the supervision of a team leader, supervisor, or proctor. Students are required to attend four weeks of class prior to performing 50 hours of internship over the remainder of the semester. Uniforms, some travel and physical work may be required. Prerequisites: CET* 126 & CET* 210.

COMPUTERS (APPLICATIONS)

CSA* 105 Introduction to Software Applications**3 S.H.**

Provides an introduction to IBM-compatible microcomputers, a basic understanding of Windows and the Internet, and an in depth coverage of the use of the microcomputer as an office productivity tool. Covers creating and editing word processing documents, spreadsheets and computerized visual presentations. Also covers file management using the Microsoft Windows operating system. This course assumes no prior computing experience and is open to all students except those majoring in computer science.

CSA* 135 Spreadsheet Applications (Excel)**3 S.H.**

Provides students with the hands-on experience necessary to create, print, modify, and enhance electronic spreadsheets. This course also covers creating and printing charts; using formulas with absolute addresses and function formulas; Goal Seek; Solver; using and filtering Data Lists; creating Pivot Charts; using Outlines, Subtotals, and Lookup functions; and preparing *what-if* alternatives. Prerequisite: Eligible for MAT* 095 or sufficient score on placement exam or permission of Program Coordinator or MAT* 095 or higher.

CSA* 140 Database Applications (Access)**3 S.H.**

Provides students with hands-on experience entering and editing data, working with and customizing forms, creating and using queries, creating and customizing printing reports and mailing labels, and creating and relating tables using database software.

CSA* 295 Computer Science Applications Practicum**3 S.H.**

Exposes students to real business programming that involves installing a brand new system. This project is typical of what would be expected from an entry-level programmer in business. Students will be responsible for the entire program development cycle for each of three new programs. Furthermore, students will be required to coordinate each of the parts into one integrated system. Prerequisite: CSC* 208.

CSA* 296 CWE - Computer Applications**3 S.H.**

Places senior Computer Science students in positions where they can use the technical skills acquired in this program. Assignments may be in an educational or corporate environment. It is strongly recommended that students interested in securing internships take advanced courses in subjects such as: Visual BASIC, networking, and 'C' language. All of the organizations participating in our program require that interns earn excellent grades in advanced courses in the internship area prior to placement. Both the number and the type of internships vary from year to year and the most qualified applicants are awarded the internships available. Students are responsible to the department for proper documentation of their work assignments and a final report summarizing the overall work experience. The student will work a minimum of eight hours per week. Prerequisite: 24 earned credits in Computer Science courses; minimum QPA of 3.25; completion of CSC* 208; and formal notification of approval of internship application.

COMPUTERS (COMPUTER SCIENCE)

CSC* 101 Introduction to Computers**3 S.H.**

Introduces the fundamental components common to all computer systems, including a comprehensive overview of contemporary computer terminology and concepts. Utilizes the College's computer resources for solving problems. Topics studied include the use of word processing, electronic spreadsheets, Microsoft Windows, the Internet, and other popular software packages.

CSC* 110 Computer Logic and Problem Solving**3 S.H.**

Presents the fundamentals of computer problem-solving techniques. Stresses flow-charting and algorithm development. Three hours of lecture / two hours of laboratory. Pre or co-requisite: CSA* 105 or CSC* 101.

CSC* 124 Programming Logic & Design with Python**3 S.H.**

Introduces structured programming concepts using Python and assumes no prior programming experience (for any language). Topics include data types, input/output from both the console and data files, arithmetic, comparison and logical operators, selection statements, looping, functions and arrays. Students should be comfortable working with simple algebraic equations and have basic file and folder management skills on a personal computer. Prerequisite: MAT* 137 or higher.

CSC* 150 Database Applications and Design - Using SQL**4 S.H.**

Presents relational database concepts and organization. Students will learn to use SQL to query and change these databases and generate the output needed. Furthermore, students will design their own databases using one or more of the dominant relational databases, such as ACCESS or ORACLE. Three hours of lecture / two hours of laboratory.

CSC* 207 Introduction to Visual Basic I**4 S.H.**

Presents both the design and implementation of computer programs using Microsoft Visual Basic for Windows. Students will build applications, work with controls, and design forms. Three hours of lecture / two hours of laboratory. Prerequisites: CSC* 101 or CSA* 105.

CSC* 208 Advanced Visual Basic**4 S.H.**

Covers the benefits of on-line systems while concentrating on Visual Basic as the supportive software. Topics will be related to the operating environment, screen layouts and design, program components, input, output, file commands, and maintenance control. Using Visual Basic, students will build applications for the interactive control of file maintenance, including inquiry, adds, deletes, updates, and browse. Students have control of the complete cycle of program development. Three hours of lecture / two hours of laboratory. Prerequisite: CSC* 207.

CSC* 215 Programming with Object Oriented C++**4 S.H.**

Introduces computer programming using C++. Each student will design, test, debug, and document several programs during the semester. Three hours lecture/two hours lab. Prerequisite: CSA* 105 or CSC* 101..

CSC* 223 Introduction to Java Programming**4 S.H.**

Presents the fundamentals of Java programming as an object-oriented language. Topics include classes, objects, data structures, event handling, graphical user interfaces, control structures, and methods. Three hours of lecture / two hours of laboratory. Prerequisite: CSA* 105 or CSC* 101.

CSC* 250 Systems Analysis and Design**3 S.H.**

Introduces systems analysis and design concepts and techniques. Using a case study method, students will conduct systems surveys, create feasibility studies, and design typical computer systems used in business and industry. Uses case studies to individualized student projects, reports, and PC systems. Prerequisite(s): CSC* 101 or CSA* 105 or departmental permission.

CSC* 257 Web Development with PHP**4 S.H.**

Introduces the fundamentals of programming with PHP; a widely used scripting language that is especially suited for creating dynamic websites and can be embedded into HTML. Three hours lecture/two hours lab. Prerequisite: CST* 152.

CSC* 262 Programming Mobile Devices I**3 S.H.**

Introduces students to the various platforms in use on small and mobile devices. Platforms include Apple iPhone; Google Android OS; Microsoft Windows Mobile and others. Students will create applications for each platform using specialized development environments. Three hours lecture/two hours lab.

CSC* 263 Programming Mobile Devices II**3 S.H.**

Builds on the knowledge gained in CSC* 262 by enabling the student to specialize in development on a single device. The device is chosen prior to offering the class. All aspects of the development are covered in the context of the device. Three hours lecture/two hours lab. Prerequisite: CSC* 262.

COMPUTER SCIENCE (TECHNOLOGY)

CST* 127 Server Operating System**4 S.H.**

Analyzes the use of operating systems as a computer resource manager. It covers installation, configuration, maintenance and performance tuning of the operating system. Students will work on servers using the Microsoft Windows operating system. Also covers managing users and groups, computers and printers, file server management, and file system security. Microsoft Active Directory Services is a major topic in this course. Prerequisite: CST* 133.

CST* 133 Networking Fundamentals I**4 S.H.**

Presents the necessary knowledge and skills to complete the basic network management tasks of system administration in a Windows environment. Designed with frequent lab exercises, students will learn network fundamentals including the OSI layer, topology, TCP/IP (IPv4 & IPv6), network security, and troubleshooting procedures. Network hardware such as routers, hubs, switches, racks and cabling are introduced. Three hours lecture/two hours lab. Corequisite: CSC* 101.

CST* 149 Computer Network Hardware**4 S.H.**

Provides students with the technical knowledge and skills to maintain, troubleshoot and service Microsoft server and network equipment. Designed with frequent lab exercises to provide students with ample "hands-on" experience with the hardware and software components of a Windows network. Students will disassemble, reassemble, troubleshoot, and load device drivers for PC and server type computers. Also covers network hardware such as routers, switches, racks, uninterruptable power supplies, and tape drives. Three hours lecture/two hours lab. Prerequisite: CST* 133.

CST* 152 Introduction to Web Page and Design**4 S.H.**

Discusses effective design of Web pages, emphasizing clarity, organization, text, images, and links. Students will work with an HTML editor and an Internet browser to test and view pages. Students will use JavaScript to create, maintain, and update Web pages. Tags, objects events, input methods, table creation, and rollover images are among the JavaScript topics that will be covered. Three hours of lecture / two hours of laboratory. Prerequisite: CSA* 105 or CSC* 101.

CST* 180 Networking I**4 S.H.**

Serves as the first course in a series of four courses that provide classroom and laboratory experience in current and emerging networking technology. This series will empower students to enter the workforce and/or further their education and training in the computer networking field. Topics include the functions of the ISO/OSI reference model, data link and network addresses, the function of a MAC address, data encapsulation, the different classes of IP addresses and subnetting, and the functions of the TCP/IP network-layer protocols. Students learn how to plan, design, and install an Ethernet LAN using an extended or hierarchical star topology; select, install, and test cable; and determine wiring closet locations. Three hours of lecture / two hours of laboratory.

CST* 181 Networking II**4 S.H.**

Serves as the second course in a series of four courses that provide classroom and laboratory experience in current and emerging networking technology. This series will empower students to enter the workforce and/or further their education and training in the computer networking field. Instruction includes, but is not limited to, safety, networking, network terminology and protocols, network standards, LANs, WANs, OSI models, ethernet, Token Ring, Fiber Distributed Data Interface, TCP/IP Addressing Protocol, dynamic routing, routing, and the network administrator's role and function. Three hours of lecture / two hours of laboratory. Prerequisite: CST* 180.

CST* 182 Networking III**4 S.H.**

Serves as the third course in a series of four courses that introduces new content and extends previously learned networking skills. This series will empower students to enter the workforce and/or further their education and training in the computer networking field. Instruction introduces and extends the student's knowledge of and practical experience in skills related to configuring LANs, WANs, Novell Networks, Internet work Packet Exchange (IPX) routing, Interior Gateway Routing Protocol (IGRP) protocols, and network troubleshooting. Three hours of lecture / two hours of laboratory. Prerequisite: CST* 181.

CST* 183 Networking IV**4 S.H.**

Serves as the fourth course in a series of four courses that introduces new content and extends previously learned networking skills. This series will empower students to enter the workforce and/or further their education and training in the computer networking field. Instruction introduces and extends students' knowledge of and practical experience with Wide Area Networks (WANs), Integrated Services Data Networks (ISDN), Point-To-Point Protocols (PPP), and Frame Relay design, configuration, and maintenance. Develops practical experience and skills related to configuring WANs, ISDN, PPP, Frame Relay protocols, and network troubleshooting. Three hours of lecture / two hours of laboratory. Prerequisite: CST* 182.

CST* 188 Networking Fundamentals II**4 S.H.**

A continuation of CST* 133, this course provides the student with knowledge and skills to administer Local Area Networking concepts beyond the client/server topics of CST* 133. More advanced information on routers, switches, wireless technology, cable management and the new Internet Protocol standard (IPv6) will be discussed. The process of designing and installing a Network are also discussed. Three hours lecture/two hours lab. Prerequisites: CST* 127 and CST* 149.

CST* 196 Protocol Analysis**3 S.H.**

An advanced course intended for networking students who already grasp the general concepts of data communications and networking. Network architectures will be discussed from an OSI model perspective of the networking protocol stack, and a detailed analysis of the protocol will ensue using traces taken with the protocol analyzer. Prerequisites: CST* 133 or CST* 180 or CST* 234.

CST* 234 Network+**3 S.H.**

Prepares students to take the Network+ certification exam from the Computing Technology Industry Association (CompTIA). The Network+ exam provides a challenging test of networking knowledge and skills. This course provides all the information needed to perform key networking installation, configuration, and administration tasks. Prerequisite: CSC* 101.

CST* 259 JavaScript**4 S.H.**

Complements the CST* 152, Introduction to Web Page and Design course. Utilizes JavaScript programming techniques to enhance and animate the static HTML web pages learning in CST* 152 into vibrant and active web pages. Students will work with variables, functions, arrays, conditional operators, various object models, strings, event handlers and forms. Prerequisite: CST* 152.

CST* 273 Security Management Practices**3 S.H.**

Covers 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 of individuals involved in security, develop security policies, and utilize management tools used to identify threats, classify assets, and rate vulnerabilities. Prerequisites: CSA* 105, CSC* 101 or CET* 116 and ENG* 101.

CST* 280 Network Security**3 S.H.**

Delivers a comprehensive introduction to network security issues, concepts, and technology. Addresses the core technologies of access control, cryptography, digital signatures, authorization, network firewalls, and network security services. Covers issues in security policy and risk management. Examines in depth firewalls, intrusion detection/prevention, and packet analysis, including email, database, Internet, and Intranet security. Prerequisite: CSC* 101.

CST* 284 Malware and Intervention**3 S.H.**

Provides the student with theoretical and practical issues surrounding computer viruses as well as intervention. It discusses malicious code, viruses, worms, backdoors, and Trojan horses on how they are introduced, how they function and how to intervene. It also discusses user-mode and kernel-mode rootkits. Prerequisite: CSC* 101.

CST* 285 Attacks and Counter Measures**3 S.H.**

Provides an overview of the actors, motives, and methods used in the commission of computer-related crimes. It describes the methods used by organizations to prevent, detect, and respond to these crimes. Offers overviews of Windows (client/server). Prerequisite: CSC* 101.

CST* 287 Cryptography Fundamentals**3 S.H.**

Surveys cryptographic concepts and algorithms and their application to data security. Techniques include: private key cryptosystems, public key cryptosystems, and hash functions. Commonly used algorithms include: DES; 3DES; IDEA; RSA; Diffie-Hellman; MD5; SHA; and DSS. Covers other algorithms that provide confidentiality, message authentication, key exchange, and digital signatures in applications such as client-server authentications, email security and web security. Prerequisite: CSC* 101.

CST* 289 Cyber Forensics**3 S.H.**

Provides students with the basic theoretical and practical foundations of investigating computer related or assisted crimes. Digital forensics will be discussed and outlined emphasizing computer forensics. Students will learn how to acquire digital evidence from storage media, authenticate the digital evidence, and analyze it. Topics covered include: deleted file recovery, ante-forensics, rules of evidence, law as it related to computer crimes, computer crime scene search and seizure, email forensics, and network forensics. Prerequisite: CSC* 101.

CRIMINAL JUSTICE

CJS* 101 Introduction to Criminal Justice**3 S.H.**

Surveys the evolution, principles, concepts, and practices of law enforcement. The course examines the structure and organization of courts in the administration of criminal justice in the U.S.A. Topics include the American model of criminal justice, police and the community, police and the constitution, and the American legal system.

CJS* 102 Introduction to Corrections**3 S.H.**

A study of the history, philosophy, and evolution of corrections. The course examines the following processes used by our courts: probation, parole, treatment programs, and rehabilitation models. Punishment and the functions of our jails and prisons are examined. Additional topics include plea-bargaining, speedy trial, sentencing, prisoner's rights, victimization, and juvenile justice.

DANCE

DAN* 141 Dance: Mind, Body, Spirit**3 S.H.**

Introduces the processes and materials involved in creating dances. It also requires students to discuss and analyze their own original choreography as well as that of other students. Spontaneity and trust in one's intuitive movement response is encouraged through structures that explore the creative process in dance. An appreciation of dance history and the pioneering spirit of modern dance giants will be studied.

PRE-DENTAL HYGIENE

DNT* 105 Introduction to Dental Hygiene I**1 S.H.**

Provides students with a survey of contemporary issues encountered by health care professionals. Emphasis is placed upon personal oral self care, dental specialties, ethical and legal aspects of dentistry, an introduction to oral pathology, disease transmission, and infection control, principles and techniques of disinfection and sterilization, and an introduction to the dental hygiene treatment appointment.

DNT* 106 Introduction to Dental Hygiene II**1 S.H.**

Continues the study of Dental Hygiene I (DNT* 105) and provides students with a survey of contemporary issues encountered by dental health care professionals. Emphasis is placed on professional standards, health promotion, disease prevention, review of dental specialties and ethical issues that are encountered by dental hygienists. Prerequisite: DNT* 105

DIAGNOSTIC MEDICAL SONOGRAPHY

DMS* 100 Principles of Sonography**4 S.H.**

Introduces the principles of diagnostic medical sonography. Lectures will include sonographic cross-sectional anatomy, medical terminology, professional and ethical behavior, patient care, equipment and controls, basic acoustic physics, and scanning protocols. Students will learn how to recognize anatomy on sonographic images and will perform basic sonographic exams in the on-campus clinical lab. Prerequisites: (Acceptance into the DMS Program; BIO* 211, BIO* 212, ENG* 101, MAT* 175, PHY 111.

DMS* 120 Abdomen/Small Parts Sonography I**3 S.H.**

Focuses on the sonographic appearance of disease processes in the abdomen and in superficial organs. Instruction will cover indications for testing, patient history, laboratory values, a review of normal anatomy, the grayscale and Doppler appearance of pathology, and necessary scanning modifications when pathology is noted. Differential diagnoses, treatments, patient outcomes, and the use of other imaging modalities will also be discussed. Prerequisite: DMS* 100. Corequisites: DMS* 121 and DMS* 122.

DMS* 121 Obstetrics and Gynecology Sonography I**3 S.H.**

Focuses on the sonographic appearance of the non-gravid and gravid female pelvis. The appearance of gynecological pathologies and the application of Doppler will be covered. The normal and abnormal developing fetus in the first trimester will be included with a review of embryology. Discussion will include correlation with laboratory findings and related imaging, patient outcomes, and formulation of differential diagnoses. Ultrasound measurements, protocols, and techniques specific to gynecological and obstetrical sonography will be discussed. Prerequisite: DMS* 100. Corequisites: DMS* 120, DMS* 122.

DMS* 122 Clinical Practicum I**2 S.H.**

Students will be assigned to a clinical site for approximately 224 hours (two days per week throughout the semester). With supervision, students will assist with patient care, patient interviews, and sonographic exams. Prerequisite: DMS* 100. Co-requisites: DMS* 120, DMS* 121.

DMS* 123 Vascular Sonography I**3 S.H.**

Educates the student in the fundamentals of vascular sonography and pathology. Instruction will cover vascular embryology, hemodynamics, color and spectral Doppler, imaging protocols, pathophysiology, etiology of disease, and congenital and acquired variants and abnormalities. Focus will be on extracranial and extremity venous and arterial studies. Students will demonstrate proper techniques while performing vascular testing in the on-campus clinical lab. Prerequisites: DMS* 120, DMS* 121, DMS* 122. Corequisites: DMS* 124, DMS* 125.

DMS* 124 Sonographic Physics and Instrumentation I**4 S.H.**

Covers the principles of sonographic physics. Instruction includes sound waves, transducers, processing, recording, resolution, hemodynamics, Doppler principles, artifacts, biological effects, and quality assurance. Students will become proficient in optimizing techniques using the principles of sonographic physics in order to obtain high-quality diagnostic sonographic images. Prerequisites: DMS* 120, DMS* 121, and DMS* 122. Corequisites: DMS* 123 and DMS* 125.

DMS* 125 Clinical Practicum II**2 S.H.**

Students will be assigned to a clinical site for approximately 224 hours (two days per week throughout the semester). Students will perform complete sonographic exams with supervision, optimize the sonographic images, use advanced Doppler functions, and identify when artifacts and/or pathology are present. Prerequisites: DMS* 120, DMS* 121, and DMS* 122. Corequisites: DMS* 123, DMS* 124.

DMS* 220 Clinical Internship I**4 S.H.**

Students will be assigned to a clinical site for approximately 432 hours (five days per week throughout the course). With supervision, students will independently conduct patient interviews and perform sonographic exams. Students will identify common pathology, describe sonographic findings, and begin to formulate differential diagnoses. Prerequisites: DMS* 123, DMS* 124, DMS* 125.

DMS* 221 Abdomen/Small Parts Sonography II**3 S.H.**

Focuses on the sonographic appearance of disease processes in pediatrics, male pelvic organs, the gastrointestinal system, and superficial structures. Instruction will cover indications for testing patient history, laboratory values, a review of normal anatomy, the grayscale and Doppler appearance of pathology, and necessary scanning modifications when pathology is noted. Differential diagnoses, treatments, patient outcomes, and the use of other imaging modalities will also be discussed. Prerequisite: DMS* 120. Corequisites: DMS* 222, DMS* 223.

DMS* 222 Vascular Sonography II**3 S.H.**

A continuation of Vascular Sonography I and educates the student in advanced vascular sonography and pathology. Instruction will cover intracranial and visceral vascular anatomy and pathophysiology, vascular variants, embryology, pharmacology, etiology of disease, physiological vascular testing, surgical procedures, vascular imaging modalities, analysis of waveforms, and statistics. Prerequisite: DMS* 220. Corequisites: DMS* 221, DMS* 223.

DMS* 223 Clinical Practicum III (CALT)**3 S.H.**

Students will be assigned to a clinical site for approximately 336 hours (three days per week throughout the semester). Students will review requisitions, conduct patient interviews, perform advanced sonographic exams with supervision and apply critical thinking skills to identify complex sonographic pathologies, adjust scanning technique and protocol, analyze sonographic findings, and formulate differential diagnoses. Prerequisite DMS* 220. Corequisites: DMS* 221, DMS* 222.

DMS* 224 Clinical Internship II**1 S.H.**

Students will be assigned to a clinical site for approximately 104 hours (five days per week throughout the course). Students will review requisitions, conduct patient interviews, perform advanced sonographic exams with supervision and apply critical thinking skills to analyze the findings and formulate differential diagnoses. Prerequisites: DMS* 221, DMS* 222, DMS* 223.

DMS* 225 Obstetrics and Gynecology Sonography II**3 S.H.**

Focuses on the sonographic appearance of obstetrical abnormalities in the second and third trimester. Laboratory values, patient history, differential diagnosis and outcomes will be presented. The role of ultrasound in maternal and fetal management will be discussed. Instruction will include prenatal testing, procedures, fetal monitoring, therapy and Doppler applications. Abnormalities specific to multigestations will also be presented. Students will become skilled in recognizing fetal abnormalities. Prerequisite: DMS* 224. Corequisites: DMS* 226, DMS* 227.

DMS* 226 Advanced Sonography Seminar**3 S.H.**

Explores the advanced uses of sonographic technology, including 3D/4D, elastography, contrast agents, and radiofrequency ablation. Sterile technique and the role of the sonographer in guided interventional procedures will be discussed. Indications, risks, and benefits of procedures will be covered, as well as associated disease processes. Protocols for FAST exams in the Emergency Department will be reviewed and sonography for detection of foreign bodies will be introduced. This course will incorporate journal articles and the student will perform a literature review on an advanced sonographic technology or a new emerging trend for their capstone project.

Prerequisite DMS* 224. Corequisites: DMS* 225, DMS* 227.

DMS* 227 Clinical Practicum IV**3 S.H.**

Students will be assigned to a clinical site for approximately 336 hours (three days per week throughout the semester). With indirect supervision, students will perform a variety of sonographic studies at the clinical site with entry-level competence. Students will consistently obtain high quality diagnostic images in a reasonable timeframe while optimizing all technical controls, documenting all pathology, modifying the standard protocol as needed, and ensuring that all documentation is complete. Students will consistently complete sonographer's worksheets and present cases to the interpreting physician. Prerequisite DMS* 224. Corequisites: DMS* 225, DMS* 226.

DRAFTING (See architecture)

DRUG AND ALCOHOL RECOVERY COUNSELOR

DAR* 101 Public Health Issues: Abuse & Addiction**3 S.H.**

Students will explore key topic areas in the addictions field such as: models and theories of addiction and recovery; history of legislation and regulation; self-help and evidenced-based approaches to recovery. This course provides a comprehensive overview of public health problems related to substance misuse, abuse and dependence. Study areas include trends in substance use, co-occurring disorders, process addictions, relevant national drug policies, the role of the media, HIV/AIDS and other contagions, domestic violence, fetal alcohol spectrum disorder and costs to society. Students will be introduced to the prevention, harm reduction, and treatment continuum and its application to a public health model. Pre- or corequisite ENG* 101.

DAR* 111 Addiction Counseling I**3 S.H.**

Students will learn, practice, and develop counseling skills such as attending, reflecting, active listening, and confrontation. This course presents the fundamental theories of addiction counseling and the relationship of theory to skills. Students reflect on their roles as counselors and define the qualities, knowledge, and skills essential to become a competent, ethical, culturally-aware counselor-in-training. Combines didactic and experiential learning. Pre- or corequisite ENG* 101.

DAR* 112 Group Counseling: Theory & Techniques**3 S.H.**

Introduces the concepts and theories of group counseling, group dynamics, and group developmental stages. Students learn about different types of groups and how groups can be used to treat addiction in a multicultural environment. Students learn to distinguish between and work with group processes and content. Students have the opportunity to examine their own performances as group members and facilitators. Combines didactic and experiential learning. Prerequisite: DAR* 111 and pre- or corequisite ENG* 101 or higher or permission of coordinator.

DAR* 114 Introduction to Family Systems**3 S.H.**

Presents an overview of the family. Focuses on families with addictions by investigating the family as a system, the family life cycle, multicultural perspectives of family, and family roles and rules. Introduces family counseling theories, goals, strategies, and techniques. Students learn how to complete a genogram and how to use this tool as a counseling strategy. Prerequisite DAR* 111 and pre- or corequisite ENG* 101.

DAR* 117 Substance Abuse Prevention**3 S.H.**

Provides a comprehensive overview of the prevention field. The course will explore prevention theory and research, models of prevention, performance domains for prevention certification, ethics, cultural competencies, application of theory and research to program planning. Pre or co-requisite: ENG* 101 or permission of coordinator.

DAR* 119 Addiction Counseling in a Correctional Setting**3 S.H.**

Provides an examination of addiction treatment across the spectrum of correctional settings. Students will understand the link between addiction and criminal behavior as well as the avenues for entering recovery via the correctional system. Focused study will investigate the evidenced-based treatment approaches that addictions counselors in correctional settings must be capable of implementing. Combines didactic and experiential learning opportunities. Prerequisite DAR* 111 and pre or corequisite ENG* 101 or higher.

DAR* 158 Biology of Addiction**3 S.H.**

Studies how and why drug abuse impacts both the human body and society. Students are introduced to the process of neurotransmission and learn how each class of psychoactive substances alters neurotransmission and homeostasis. The course examines the consequences of short- and long-term substance use, abuse, and addiction on all major bodily systems and the fetus. Pre- or corequisite ENG* 101.

DAR* 212 Multicultural Addiction Counseling**3 S.H.**

Students will be introduced to major concepts essential to the understanding of culture, race, and diversity within the context of addiction counseling. Students will develop awareness of their own and others' cultural communication styles as well as values and beliefs regarding the use of substances. Students will practice conducting culturally competent assessments, recovery plans, and counseling skills for the treatment of substance use disorders. Combines didactic and experiential learning opportunities. Prerequisite: DAR* 111 and pre- or corequisite ENG* 101 or higher or permission of coordinator.

DAR* 213 Addiction Counseling II**3 S.H.**

Provides an overview of the major counseling theories and figures, including Gestalt, Reality, Person-Centered, and Rational-Emotive. Addresses the techniques and professional practices related to each theory. Theory and practice will focus on such current evidence-based treatment models as Cognitive-Behavioral, Motivational Interviewing, and Solution-Focused. Students apply basic counseling skills developed in DAR* 111 to a variety of evidence-based models and explore the theories and techniques most appropriate to specific treatment settings, client populations, and cultures. Combines didactic and experiential learning. Prerequisite: DAR* 111 and pre- or corequisite ENG* 101 or higher or permission of coordinator.

DAR* 220 Co-Occurring Disorders Counseling**3 S.H.**

Students will be introduced to major concepts essential to the understanding of co-occurring substance use disorders and mental health disorders. Students will develop awareness of the unique challenges that face clients who are struggling with multiple diagnoses. Students will practice conducting competent assessments, recovery plans, counseling skills and continuum of care issues relevant to the recovery process for this special population. Combines didactic and experiential learning. Prerequisite: DAR* 111 and pre- or corequisite ENG* 101 or higher or permission of coordinator.

DAR* 251 Counseling Internship I**6 S.H.**

Provides students with the experience of 225 hours per semester in a substance use disorder treatment facility, weekly seminar and other approved activities under the joint supervision of the DARC program and a credentialed supervisor at the facility. Students will observe the treatment process from intake to discharge. Students will observe, practice, and develop competency in the 8 domains of addiction counseling. As students develop increased competence, they will progress from active observers to co-counselors, and then to counselors. To enhance the field experience, students will continue academic study during a weekly seminar. Students will be expected to reflect on their fieldwork, participate in clinical supervision as well as peer group interaction and continue their research in support of counseling theories. Prerequisites: DAR* 101, DAR* 111, DAR* 112 and DAR* 158; ENG* 101 with a "C" or better within five years and permission of the program coordinator. Internship classes must be completed in consecutive semesters. If a student is unable to complete DAR* 252 in the spring following DAR* 251, DAR* 251 will need to be taken again. **(This is the selective admission component of the DARC program which begins in the fall semester).**

DAR* 252 Counseling Internship II**6 S.H.**

Continues DAR* 251; students extend their field placements, working fifteen hours per week in the same substance use disorder treatment facility. Students refine their counseling skills and assume increased responsibility for implementing the 8 domains. During the semester, students function as a primary addiction counselor for one or more clients. The classroom component of this internship prepares students for the certification exam and case presentation and allows ongoing personal reflection and growth. Prerequisites: DAR* 251 and permission of the DARC program coordinator. DAR* 252 must be taken in the spring semester immediately following DAR* 251.

EARLY CHILDHOOD EDUCATION**ECE* 101 Introduction to Early Childhood Education****3 S.H.**

A study of the historical, philosophical and social perspectives of early education and care. The importance of child development from birth to age eight years is emphasized. Students will observe children and early education and care settings. The course acquaints students with trends in educational settings, curriculum planning based on the knowledge of developmentally appropriate teaching practices and explores the role of the teacher in an early childhood learning environment. Pre-requisite: eligible for ENG* 063 or higher.

ECE* 103 Creative Experiences/Children**3 S.H.**

Provides a variety of art experiences suitable for young children. Includes experimentation with and the use of various media, techniques, and methods. Emphasis is placed on the role of creative experiences in early childhood development. The selection of and approach to art experiences, media, and materials is related to the conceptual framework of the course. This ensures that the adult students are directly involved in the creative experience and can effectively lead others to it.

ECE* 106 Music and Movement for Children**3 S.H.**

Explores young children's musical growth through singing, rhythmic and dramatic play, use of classroom instruments, recorded music, and the study of children's natural fundamental movements. Teaching strategies will be analyzed through videotapes and film.

ECE* 109 Science and Math for Children**3 S.H.**

Prepares teachers to introduce science to young children in the classroom and in the field. Teachers also answer questions on the natural world. Approximately one-third of this course consists of field trips. Topics include ecology, geology, astronomy, and meteorology.

ECE* 110 Using Computers in ECE**3 S.H.**

Covers the design and use of microcomputers, including the selection of software used in a variety of regular and special education settings.

ECE* 121 First Aid, CPR, and Medication Administration**1 S.H.**

Trains students to handle many basic medical emergencies and outlines procedures to follow in assisting an injured or suddenly ill person until professional emergency medical services can be obtained. It also familiarizes students with the legal aspects of First Aid, CPR, and Medication Administration. Examples are derived from real life situations.

ECE* 123 Introduction to Family Support and Respite Care**4 S.H.**

Provides students with the special needs background, communication skills, attitudes, and techniques that will enable them to provide respite for families in crisis. Students learn the laws and dynamics of working with social services agencies to determine families that can benefit from respite care. Students are required to spend fifty hours demonstrating their proficiency in a practical setting. Students are also required to obtain certification in First Aid, CPR, and Medication Administration.

ECE* 141 Infant and Toddler Growth and Development**3 S.H.**

Prepares students to care for and teach infants and toddlers. Topics include typical infant and toddler development, developmental domains, and curriculum development and adaptation.

ECE* 142 Developmental Interventions for Infants and Toddlers at Risk**3 S.H.**

Presents typical and atypical infant and toddler development. Current issues and trends in family-centered care will be discussed. Intervention techniques and various applications and environments for intervention will be reviewed.

ECE* 176 Health, Safety & Nutrition**3 S.H.**

Examines the relationship between health, safety and nutrition and child development. Emphasis will be on the strategies needed to implement a safe, healthy and nutritionally sound program. Community agencies and resources that benefit children and families will be explored.

ECE* 180 CDA Credential Preparation**3 S.H.**

Designed for childcare providers who wish to obtain a Child Development Associate (CDA) Credential. Students study the national standards for evaluation and accreditation by the Council of Early Childhood Professional Recognition and become familiar with the Direct Assessment System. Students analyze the CDA Competencies and Functional Areas and their integration into child development theory and practice. Coursework assists students to develop their professional resource file, complete other necessary documentation, and prepare for the final assessment process. Students will apply for the CDA Credential with one of the following endorsements: center-based preschool, center-based infant/toddler, family day care, or home visitor.

ECE* 181 CDA Credential Preparation II**3 S.H.**

Designed for childcare providers who are preparing for their Child Development Associate (CDA) Credential through the Council for Professional Recognition in Washington, D.C. under its present requirements. The student will attend a weekly seminar and a minimum 30 hours of fieldwork in a licensed early childhood setting. Course instructor will conduct onsite observation visits.

ECE* 205 Creative Activities and Media**3 S.H.**

Provides teachers of young children an in-depth involvement in the art experience and an understanding of how art is integral to the curriculum for young children. Emphasizes integrating art experiences with number concepts, reading readiness, literature, social studies, science, and music and movement. Trips to an art gallery and an artist's studio supplement classroom experiences. Prerequisite: ECE* 103.

ECE* 206 Administration and Supervision of Early Childhood Programs**3 S.H.**

Explains the leadership role in the administration and supervision of private, public, and federally funded schools. Addresses the various philosophies, comprehensive programs, methods of managing staff and effective programs, regulations and efficient means of enforcement, and institutional facilities and equipment in a school.

ECE* 210 Observations, Participation and Seminar**3 S.H.**

Promotes objectivity in observing and interpreting children's behavior, allowing observation of developmental characteristics and increasing awareness of typical and atypical patterns of behavior. Observation and participation placements for the study of young children are provided at the GCC Early Learning Center and at area preschools. Students observe and participate in their respective placement locations for sixty hours to gain experience and competency working with young children. Weekly seminars devoted to issues in observing and understanding children's development expand students' observation and participation experiences. Prerequisite: PSY* 122.

ECE* 212 Administrative Leadership in Early Childhood Programs**3 S.H.**

Examines the multi-dimensional roles of the early childhood program administrator. Emphasis will be on effective leadership and the impact of communication and interpersonal skills, decision-making and participatory management tools, how to conduct effective meetings, formation of partnerships with families, child welfare advocacy, and strategic approaches to initiating and implementing change.

ECE* 213 Finance for Early Childhood Program**3 S.H.**

Focuses on the financial aspects of administering an early childhood program. It will explain and discuss the various aspects of budgeting including tools that are commonly used in all businesses as well as tools that are specific to ECE programs. It will address the "trilemma" inherent to programs with strategies to think about balancing cost, quality and affordability.

ECE* 231 Early Language and Literacy Development**3 S.H.**

Introduces language and literacy development in young children. Students explore early childhood language arts curricula, including speaking, listening, writing, and reading skills. The influence of a child's cultural background and experiences on emerging literacy development is explored. The teacher's role in creating and fostering an environment that engages children in developmentally appropriate language arts experiences will be covered. Course content includes specific strategies for teaching reading and other literacy skills, the role of school-family partnerships in developing literacy, identification of students who are at risk, and reading assessment methods.

ECE* 241 Methods and Techniques for Infant/Toddler**3 S.H.**

Presents both the theoretical knowledge and practical skills necessary to create an infant/toddler curriculum in an inclusive environment. It provides information on how the playful interaction of infants/toddlers with their surroundings helps them to discover what the world is made of, how it works, and what they can do with their emerging skills. Students learn how the routines and organization of a child's inside-outside environment facilitate a child's learning. The successful student will demonstrate a knowledge of program planning and implementation, and an understanding of the role of the physical environment in creating quality development programs for typical and atypical infants and toddlers.

ECE* 295 Student Teaching**6 S.H.**

Provides guided observation of, participation in, and supervised student teaching at NAEYC-accredited centers or kindergartens. The purpose of student teaching is to apply child development theory to a learning environment and to work with children under close supervision. Students will manage a classroom independently and plan, organize, implement, and evaluate classroom activities. Students will complete a minimum of 200 hours of student teaching. Weekly seminars devoted to communicating issues in Early Childhood Education and the teaching experience of students will extend the student teaching experience. Prerequisites: ECE* 101, 210, 231, PSY* 122, SOC* 111.

ECE* 299 Independent Study in Early Childhood Education**3 S.H.****EARLY CHILDHOOD SPECIAL EDUCATION**

ECS* 107 Introduction to Exceptional Children I**3 S.H.**

Familiarizes the student with the trends, issues, psychological and behavioral characteristics of exceptional learners and their education. Emphasis will be placed on classroom practices as well as the history, laws, concepts, practices and terminologies used by professionals in the field. The completion of a portfolio is required. Students are also expected to participate in a 25 hour practicum in a National Association for the Education of Young Children (NAEYC) accredited setting.

ECS* 112 Introduction to Early Childhood Special Education **3 S.H.**
Focuses on early intervention for infants and toddlers from birth through age two and on preschool special education for three- to five-year-old children with disabilities, developmental delays, or serrations in development. This course presents successful interventions for various kinds of children and families. Furthermore, it presents federal legislation pertaining to Early Childhood Special Education that provides funding for the services that young children with disabilities and their families need.

ECS* 113 Creative Art/Play for Exceptional Children **3 S.H.**
Provides adaptive experiences in two- and three-dimensional art activities using everyday materials with an emphasis on process over product. Emphasizes the integration of art projects with math, reading, literature, social studies, and music. Demonstrations, workshop sessions, and visits to art galleries supplement classroom experiences.

ECS* 207 Introduction to Exceptional Children: Seminar II **3 S.H.**
Introduces the field of early childhood special education and offers an overview of typical and atypical child development including programs for and assessment of young children with special needs. Emphasizes the use of play to facilitate the development of cognitive, language, motor, social, and emotional skills.

ECS* 230 Student Teaching Special Education **6 S.H.**
Students will complete a minimum of 200 hours under the supervision of a supervising teaching to develop skills in management, environmental planning, and curriculum development. Student teachers will assume some of the teaching responsibilities for the class as they develop daily activities with individual education plans (IEPs) that include class management and assessment. Students will also be required to attend weekly seminars to explore the relationship between pedagogical theory and research, and their relationship to practice in tpical and atypical classrooms. Connections will be drawn in the areas of professionalism; preparing, implementing, and evaluating instructional objectives, educational curricula and strategies; and student engagement and classroom environment. Pre-rerequisites: ECS* 107, ECS* 112, ECS* 225, PSY* 122; co-requisite: ECS* 207.

EDUCATION

EDU* 201 Introduction to Teaching Professions **3 S.H.**
Provides prospective high school, middle school and art teachers with an introduction to the teaching profession. Students are required to spend a minimum of 40 hours of fieldwork in an approved classroom. Emphasis is placed on the human development during the middle and high school years and theories, history, philosophies, and processes relevant to teaching and learning as a profession. Patterns of learning and unique ways of learning will be explored. Focuses on social-economic, political and ecological factors and their impact on student's learning. Students will have opportunities to observe in multicultural and inclusive classrooms and the opportunity to evaluate their readiness and aptitude to be a teacher.

EDU* 202 Principles of Education **3 S.H.**
Provides prospective teachers with an introduction to the teaching profession. Students are required to spend a minimum of 40 hours of fieldwork in an approved classroom. Emphasis is placed on the varied roles that teachers play; the history and philosophy of education; current themes in education; learning theories; classroom management issues; relationship between the schools and community. Students will have opportunities to observe in multicultural and inclusive classrooms and the opportunity to evaluate their readiness to be a teacher.

EARTH SCIENCE

EAS* 102 Earth Science (SK) **3 S.H.**
Introduces the four main branches of Earth Science: Geology (solid earth), Oceanography (oceans), Meteorology (weather), and Astronomy (stars and universe). Investigates the dynamic nature of Earth processes to understand human beings' place in the universe.

EAS* 106 Natural Disasters (SK) **3 S.H.**
Provides an introduction to the causes, distribution, and consequences of Earth's natural hazards and disasters including: earthquakes; volcanoes; hurricanes; severe storms; floods; extraterrestrial impacts; and events related to global climate change. The course will focus on naturally-occurring disasters and will also consider the role of anthropogenic (human) activities in exacerbating and/or mitigating these processes and events.

EAS* 110 The Earth Sciences (SR & SK) **4 S.H.**
Introduces the four main branches of Earth Science: Geology (solid earth), Oceanography (oceans), Meteorology (weather), and Astronomy (stars and universe). Investigates the dynamic nature of Earth processes to understand human beings' place in the universe. Three hours lecture/three hours lab.

ECONOMICS

ECN* 101 Macroeconomics (SP)

3 S.H.

Presents major topics in macroeconomics: markets, households, business, government and foreign sectors, and the effects of the above on employment and national income. Evaluate fiscal and monetary policies and their impact on economic growth of advanced and developing nations. Prerequisites: ENG* 101, MAT* 085 or higher.

ECN* 102 Microeconomics (SP)

3 S.H.

Evaluates the best available tools of economic analysis which explain the pricing mechanism and structure of markets. Emphasizes the contribution and usefulness of the theoretical methods. Discusses supply and demand analysis, the economics of firms, the determination of product and factor prices under varying market structures, the pricing and employment of resources, and market imperfections. Prerequisites: ENG* 101, MAT* 085 or higher.

ELECTRICAL ENGINEERING TECHNOLOGY

EET* 103 Fundamentals of Electricity

4 S.H.

Surveys basic electricity, including generation, measurement, and analysis of networks involving DC and AC sources. The laboratory component includes electrical experiments in basic DC and AC circuits. Three hours of lecture / three hours of laboratory.

EET* 110 Electric Circuits I

4 S.H.

Introduces DC and AC circuit fundamentals, including Ohm's Law Kirchoff's Laws power and energy relationships. Students will learn to analyze DC and AC series, parallel, and series-parallel circuits using basic circuit analysis techniques. Students will also learn the fundamentals of capacitors, inductors and transformers and analyze DC and AC circuits with these components. In the lab, students will learn to use instrumentation including power supplies, analog multimeters, digital multimeters, function generators, counters and oscilloscopes. Students will also construct a variety of circuits and utilize basic circuit analysis techniques to analyze these circuits. Three hours of lecture / three hours of laboratory. Prerequisite: MAT* 095 or higher or mathematics placement into MAT* 137 or higher.

EET* 114 Electric Circuits II

4 S.H.

Presents advanced network analysis techniques for complex DC and AC circuits. Includes advanced network analysis techniques of mesh analysis, nodal analysis, superposition principle, Thevenin's, Norton's, and maximum power transfer theorems. Students will also learn the fundamentals of current sources, bridge circuits, series and parallel resonant circuits, passive filters and three phase systems. In the lab, students will construct a variety of circuits and utilize advanced network analysis techniques to analyze these circuits. Three hours of lecture / three hours of laboratory. Prerequisite: EET* 110. Corequisite: MAT* 175.

EET* 136 Electronics I

4 S.H.

Presents a variety of discrete electronic devices, including diodes, BJTs and FETs, and simple integrated circuits along with their operation and applications. Students will learn how to analyze circuits containing these devices. In the lab, students will construct various electronic circuits with the devices studied and will test and verify the circuits' performance and operation. Three hours of lecture / three hours of laboratory. Prerequisite: EET* 110.

EET* 232 Electronics II

4 S.H.

Presents advanced electronic topics and applications including operational amplifiers, voltage regulators, and timer/waveform generators. Students will learn the operation of single- and multi-stage amplifiers, active filters, differential amplifiers, power supplies, and oscillators. In the lab, students will construct various electronic circuits and verify the circuits' performance and operation. Three hours of lecture / three hours of laboratory. Prerequisites: EET* 136 and MAT* 187.

EET* 241 Introduction to Fiber Optics

4 S.H.

Presents the principles of fiber optics, including light sources, single-mode, multi-mode, graded index fiber and cabling, connectors, photo-detectors, repeaters, and optical fiber sensors. Students will study various voice, data, and image communications systems using fiber optic networks. In the lab, students will perform experiments to gain hands-on experience with fiber optic components, circuits, and systems. Students will also have the opportunity to construct, test, and evaluate fiber optic communication links for analog and digital signal transmission. Three hours of lecture / three hours of laboratory. Prerequisites: EET* 136 and EET* 252.

EET* 252 Digital Electronics

4 S.H.

Introduces binary and hexadecimal number systems, codes, Boolean algebra, truth tables, logic gates, logic circuitry and Boolean reduction techniques. Students will learn how a variety of digital IC devices operate including flip-flops, one shots, clocks, counters, registers, decoders, encoders, displays, multiplexers and demultiplexers along with their applications. In the lab, students will investigate modern digital applications through hands-on experience. Three hours of lecture / three hours of laboratory. Prerequisite: EET* 110 or Instructor's permission.

EET* 256 Microprocessors**4 S.H.**

Presents the programming fundamentals of a particular microprocessor and its instruction set, as well as how to write programs with this instruction set. Students will also learn the architecture of the microprocessor, including the arithmetic-logic unit, registers, flags, bus structure and timing operations. Interfacing techniques to memory and input/output devices will also be introduced. In the lab, students are introduced to both a microprocessor trainer and a microprocessor simulator and will learn how to use this trainer to write, test and troubleshoot a variety of programs using arithmetic, logic, and branch instructions. Three hours of lecture / three hours of laboratory. Prerequisite: EET* 252.

EET* 262 Electrical Machinery and Control**4 S.H.**

Introduces students to the electrical energy industry with a concentration on the principles of DC and AC magnetic circuits, focusing on electrical machinery, including DC generators and motors, AC single and polyphase alternators and motors, and power transformers. Students will learn basic electrical machine control procedures, including programmable logic controllers and the use of other solid-state control devices. In the lab, students will perform experiments to gain hands-on experience with DC and AC magnetic circuits and basic electrical machines and controls. Students will learn to operate, test, assemble, and disassemble machines, prepare characteristic operating curves, and use programmable logic controllers for industrial control applications. Three hours of lecture / three hours of laboratory. Prerequisites: EET* 114, EET* 136, and MAT* 187.

EET* 272 Electronic Communications**4 S.H.**

Presents modern electronic communications based on an informational and circuit/systems framework. Students will learn the concepts of noise considerations, bandwidth, and propagation requirements, and AM and FM modulation techniques for the transmission and reception of RF signals. In the lab, students will perform experiments to gain hands-on experience in the design, construction, testing, and evaluation of the various circuits and sub-systems that comprise a communications system. Students will also learn how to combine computer simulation with bench experimentation and will learn instrumentation, waveform analysis, and circuit system performance related to modern electronic communications. Three hours of lecture / three hours of laboratory. Prerequisite: EET* 232.

EET* 296 EET Internship**3 S.H.**

Provides first-hand, real-life work experience in the electronics industry. Establishes internships in the fields of electrical energy production and distribution, telecommunications, electronic fabrication and assembly, electrical machinery and controls, and electronic information systems and equipment. Students are matched with internships based on skills, interests, and recommendations. Students report to a worksite once per week during the academic term and complete an Internship Evaluation Form and Narrative Report on their experience.

ENGINEERING SCIENCE

EGR* 111 Introduction to Engineering**3 S.H.**

Introduces students to the fields of engineering through design and graphics and comprehensive engineering projects. Topics include: sketching, charts, graphs, forces, energy, electrical circuits, mechanisms, robotics, manufacturing technologies and fundamentals of engineering economics. Prerequisites: MAT* 137 or Higher with a C or better or higher.

EGR* 131 Introduction to Nanotechnology**3 S.H.**

Designed to give participants who have little or no knowledge of nanotechnology a broad overview of the field in a non-technical manner. Lectures will present the fundamental ideas behind nanoscience and nanotechnology. Beginning with the definition of a nanometer, discussions will continue through how nanotechnology will affect business and industry; basic processes that are currently used in nanotechnology; the economic impact of this emerging field; environmental concerns in the near and long-term; NEMS/MEMS; imaging devices; polymers; biomolecules; nanowires; nanotubes; fullerenes; and other carbon nanostructures. Participants will be expected to read the material, share data obtained from the class discussion and prepare additional nanotechnology oriented projects/papers and presentations. Prerequisites: MAT* 075, ENG* 073. Corequisite: CET* 116.

EGR* 211 Engineering Statics**3 S.H.**

Presents the fundamentals of statics, including the resolution and composition of forces, the equilibrium of force systems, the analysis of forces acting on structures and machines, centroids, and moment of inertia. Uses vector methods. Pre- or Corequisite: MAT* 268.

EGR* 212 Engineering Dynamics**3 S.H.**

Presents a basic engineering course in dynamics, covering rectilinear and curvilinear motion, translation, rotation, plane motion, work, energy and power, and impulse and momentum. Applies the principles of dynamics to engineering problems using vector methods and computer applications. Prerequisites: EGR* 211 and MAT* 268.

EGR* 221 Introduction to Electrical Circuit Analysis**3 S.H.**

Analyzes electrical networks incorporating passive and active elements through basic laws and techniques. Covers transient and forced responses of linear circuits, periodic excitation, and frequency response. This is a required elective for Engineering Pathway students majoring in either Electrical/Systems Engineering or Computer Science/Engineering. Prerequisites: EGR* 211 and PHY* 221. Corequisite: MAT* 285.

EMERGENCY MEDICAL TECHNICIAN (EMT)

EMT* 100 Emergency Medical Technician Basic**6 S.H.**

Includes classroom and clinical experiences and provides students the opportunity to develop the knowledge and skills required for EMG-B National Certification. Emphasis is placed on patient assessment, clinical signs and symptoms, pathophysiology and pre-hospital 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. Prerequisite: FTA* 101 or permission of Division Director.

ENGLISH

+ Credit does not count toward meeting degree requirements.

ENG* 063 Introduction to the Essay (ALP only)

See ENG* 099A (this course is no longer offered effective fall 2017)

**ENG* 066 Introduction to Academic Reading, Writing & Scholarship
(This course replaces both ENG* 043 and ENG* 073 as of fall 2014)****6 S.H.+**

Focuses on the foundational reading, writing and study skills necessary for effective learning and communication. The emphasis is on learning through reading. Students are introduced to various topics, content and forms through creative and expository literature. Students will develop the appropriate academic vocabulary as well as strategies for greater analysis, comprehension and retention of knowledge through reading. The writing component of the course focuses on the organizational and grammatical structure of the paragraph while introducing various rhetorical modes of expression. Instructional seminars by faculty and staff are coordinated with visits to library, computer labs, CES, fitness center, counseling and career offices will also be a component of the course. +Credit does not count toward meeting degree requirements. Placement: Determined by ACCUPLACER score. Exit criteria: C or better qualifies for ENG* 063/101-ALP placement. A grade of C- qualifies for ENG* 091.

ENG* 091 Introduction to Advanced Reading & Writing**4 S.H.+**

Enhances and refines students' critical writing and reading skills in preparation for ENG* 101. Students will extend their abilities to write clearly, coherently, and fluently by incorporating critical analysis of challenging readings into their writing. They will use in-depth, critical reading strategies to improve their comprehension of college level texts across the curriculum. Vocabulary, outlining, and summary/synthesis/critiquing skills will be reinforced. All of these skills will further prepare students for the demands of college reading and writing in ENG* 101 and beyond. +Credit does not count toward meeting degree requirements. Prerequisites: A grade of C or better in ENG* 043, C- in ENG* 066, instructor recommendation, or ACCUPLACER.

ENG* 099A Transition to Composition: Accelerated Learning Program (ALP)**3 S.H.+**

Offered as a co-requisite to matching ENG* 101 ALP sections as of fall 2017. Course was previously numbered as ENG* 063). Augments the lessons taught in ENG* 101 while continuing the study of paragraph development. Extends students' abilities to write clear, fluent, and effective multi-paragraph essays in a variety of rhetorical modes. Also incorporates grammar and punctuation rules and reading for critical analysis, modeling, and topic generation. +Credit does not count toward meeting degree requirements. Prerequisites: A grade of C or better in ENG* 066 or C- in ENG* 091.

ENG* 101 Composition (WC)**3 S.H.**

Develops strategies for college-level writing through the critical study of various rhetorical modes. Emphasizes the development of carefully reasoned essays that cite appropriate evidence to support conclusions. Develops library and research skills required for composition and communication. Students will write a number of short expository papers and a longer research paper incorporating MLA documentation techniques. Prerequisites: Sufficient score on the placement test or successful completion of ENG* 063, ENG* 091, ESL* 161 and ESL* 178 with a grade of "C" or better (or instructor recommendation). (ALP sections must be taken with co-requisites of ENG* 099A ALP).

ENG* 102 Literature and Composition (WC)**3 S.H.**

Emphasizes critical reading and writing by surveying such literary genres as poetry, prose, drama, and fiction. Introduces literary techniques, terminology, conventions, and devices. Students will write a number of short critiques in which they respond to, analyze, and interpret selections from a literature anthology. They will also write a longer literary research paper incorporating MLA documentation techniques. Prerequisite: "C" or better in ENG* 101.

ENG* 114 Children's Literature**3 S.H.**

Develops students' knowledge of and appreciation for children's literature. Students will explore children's stories and the components of good children's literature by investigating the interrelationship of literary content and form. By developing a personal bibliography, students will investigate the wealth of children's literature available today. This course also assists teachers to promote a comprehensive, creative, and insightful utilization of literary materials in their classes. Examples of incorporating children's literature in learning include choral reading, storytelling, creative dramatization, role-playing, and use of music and movement.

ENG* 193 Study and Critical Thinking Skills**3 S.H.**

Helps students, through substantive readings, structured writing assignments, and ongoing discussions, enhance their ability to: solve problems; analyze issues; make informed academic, career, and personal decisions through a process of effective and clear critical thinking.

ENG* 195 Critical Reading Strategies for Expository Imaginative Literature**3 S.H.**

Presents various types of fiction and nonfiction, covering a broad spectrum of content areas. Reviews basic vocabulary and comprehension skills and focuses on patterns and strategies needed for productive college reading. Includes reading for research.

ENG* 196 Scientific and Technical Reading Strategies**3 S.H.**

Develops comprehension of scientific and technical texts. Focuses on the patterns and vocabulary found in this specialized literature, and promoting active reading strategies through extensive critical analysis and synthesis.

ENG* 200 Advanced Composition (WC)**3 S.H.**

Develops and refines the advanced skills in composition that are essential for both academic and professional writing. Emphasis will be on writing from various sources including texts and online material. The focus of student writing will include exposition, argumentation and a research paper using various documentation styles (including but not limited to MLA, APA, CBE and Chicago). Prerequisite: ENG* 101 (minimum of a C grade).

ENG* 202 Technical Writing**3 S.H.**

Addresses the conventions of technical writing. Introduces the purposes, developmental strategies, and formats of technical documents. Covers audience analysis and adaptation, document organization and design, graphics, and research documentation methods. Stresses a readable style in all professional writing. Requires a series of short reports, a collaborative project, and a major research paper. Prerequisite: ENG* 101.

ENG* 210 Fiction**3 S.H.**

Surveys short stories and novelettes whose themes are not limited by the possible or probable. Focuses on critical literary interpretations, including the characteristics, conventions, and devices of authors ranging from Poe and Hawthorne, through Clarke and Asimov, to LeGuin and Farmer. Stresses logical and supportable reader response in both class discussions and analytical essays. Required reading includes one major novel. Prerequisite: ENG* 101.

ENG* 211 Short Story**3 S.H.**

Focuses on representative works by such North American short story writers as Wright, Thurber, Vonnegut, Porter, and Hemingway. Requires writing assignments in response to assigned texts. Prerequisite: ENG* 101.

ENG* 214 Drama**3 S.H.**

Surveys dramatic literature from ancient Greece through the modern and contemporary periods. Introduces theatrical terminology, techniques of script analysis, and critical approaches to theatrical productions. Includes screenings of selected cinematic interpretations. Encourages, whenever possible, attendance at area theatrical productions. Prerequisite: ENG* 101.

ENG* 221 American Literature I (CALT & AD)**3 S.H.**

Surveys American literature from its beginnings to the mid-nineteenth century. Examines a variety of forms, including journals, autobiographies, essays, poems, sermons, histories, and statecraft. Includes selections from such authors as Jefferson, Thoreau, Whitman, Dickinson, and Poe. Prerequisite: A grade of C or better in ENG* 101.

ENG* 222 American Literature II (CALT & AD)**3 S.H.**

Surveys American literature from the mid-nineteenth century to the present. Examines the poetry and prose (both fiction and nonfiction) characteristic of the period of expansion and industrialization. Also presents the literature of the twentieth century. Includes selections from such authors as Twain, Cather, Baldwin, and Miller. Prerequisite: A grade of C or better in ENG* 101.

ENG* 231 British Literature I (CALT & AD) (Course has not been offered in the past two years) **3 S.H.**
Surveys representative works of British literature from the Anglo-Saxon period through the eighteenth century. Includes poetry, prose, drama, and fiction by such authors as Chaucer, Shakespeare, Milton, Pope, and Swift. Prerequisite: A grade of C or better in ENG* 101.

ENG* 232 British Literature II (CALT & AD) **3 S.H.**
Examines representative works of poetry, prose, drama, and fiction from Blake to the present, covering the Romantic, Victorian, Modern, and Contemporary periods of British literature. Includes works by such authors as Wordsworth, Dickens, Tennyson, Woolf, and Larkin. Prerequisite: A grade of C or better in ENG* 101.

ENG* 245 Early Western Literature (CALT & AD) **3 S.H.**
A survey of European literature from ancient Greece and Rome to the Renaissance, studying such works as the epics of Homer, *The Bible*, the tragedies of Aeschylus and Sophocles, Plato, St. Augustine, *The Koran*, Dante, and Chaucer. Prerequisite: A grade of C or better in ENG* 101 or instructor's permission.

ENG* 246 Modern Western Literature (CALT & AD) **3 S.H.**
A survey of European literature from the Renaissance to the present. Includes such authors as Montaigne, Cervantes, Goethe Ibsen, Chekhov, and Woolf. Prerequisite: A grade of C or better in ENG* 101 or instructor's permission.

ENG* 251 African-American Literature **3 S.H.**
Presents literature about the African-American experience. Focuses on accounts of the colonial slave trade, the plantation experience, the abolition movement, the Reconstruction Era, and the Harlem Renaissance. Includes works by such emerging writers as Walker, Morrison, Gaines, and Jordan. Prerequisite: ENG* 101 or instructor's permission.

ENG* 254 Modern Arabic Literature (CALT) **3 S.H.**
An introduction to contemporary Arabic literature in translation including poetry, short stories, drama, novellas and novels. The works of both male and female voices will be explored from many Arab countries including Algeria, Egypt, Lebanon, Jordan, Iraq, Sudan, Saudi Arabia, Syria, United Arab Emirates and Yeman. Prerequisite: A grade of C or better in ENG* 101.

ENG* 262 Women in Literature **3 S.H.**
Examines women in literature by both male and female writers throughout the centuries. Approaches various genres from critical, cultural, and historical perspectives. Analyzes the stages, circumstances, and conditions of women's lives in a broad spectrum of literary expression. Includes a critical writing component. Prerequisite: ENG* 101.

ENG* 270 Humanities: The Creative Voice **3 S.H.**
Defines art in its broadest sense (visual, performance, and media arts, as well as literature, music and philosophy); explores the nature and theories of creative expression. Asks students to identify and evaluate art forms and in the process see relationships and make connections between various forms of creative expression. Engages students to explore their own creative process. Prerequisite: ENG* 101, ENG* 102 (suggested).

ENG* 271 Film and Literature **3 S.H.**
Studies the unique forms of film and literature by reading selected novels and plays and by viewing films adapted from them, followed by a critical discussion of both. Prerequisite: ENG* 101 or instructor's permission.

ENG* 272 History of Film **3 S.H.**
Surveys the history of film from its beginning to the present. Emphasizes the development of forms and techniques, production methods, and film's relationship to other arts and to social/political currents. Focuses on critical analysis and discussion of selected contemporary films illustrating aesthetic principles that govern cinematic value and meaning. Prerequisite: ENG* 101.

ENG* 281 Creative Writing **3 S.H.**
Introduces the major writers of contemporary American Letters. Serves as a cooperative writing workshop to evaluate student writing. Encourages commitment to the writing process: revision, development, discipline, and the satisfaction of accomplishment. Studies each of the writing genres, allowing students to select their own medium for a course project. Prerequisite: ENG* 101.

ENGLISH AS A SECOND LANGUAGE

Placement is based on the results of an ESL Placement Test, including a writing sample. Four levels of integrated skill courses are offered: Intermediate ESL 141 and 151 and Advanced ESL 161. All are designed to develop listening, reading, speaking, and writing skills. Students entering Intermediate ESL 141 must have fundamental skills in English. After successful completion of the Intermediate ESL 141 and Intermediate ESL 151 levels, students may be required to take concurrent additional specialized ESL courses in Reading, Writing, Technical English, and Pronunciation, along with the Advanced 161. ***Students intending to take ENG* 101 or COM* 171 must receive a grade of "C" or better in ESL* 161 and ESL* 178.***

ESL* 139 Pronunciation III**3 S.H.**

Addresses the problems of pronunciation using the concepts of rhythm, intonation, and thought grouping. Students perform speaking activities, practicing the concepts and integrating exercises for listening practice. Students will perform a final speech exercise involving the basic concepts presented in the class. This course satisfies the Foreign Language requirement. *(This course may be taken concurrently with any ESL* course.)*

ESL* 141 Integrated Skills IV**3 S.H.**

Develops fluency in the English language. Focuses on reading, writing, grammar, speaking, and listening comprehension on typical topics stressed in class, small groups, and individual practice. Prerequisite: sufficient score on the ESL Placement Test. This course satisfies the Foreign Language requirement. *(This course may be taken concurrently with ESL* 139 and ESL* 143).*

ESL* 143 Writing and Reading IV**3 S.H.**

Designed to help students with academic English writing skills on the high-beginning level involving work at the level of sentences and development of a basic paragraph. Early writing assignments will focus on sentence development, development of topic sentences and supporting sentences. Additional assignments will focus on paragraph development and organization. Focus will be the entire writing process; planning, editing, and revising. Students will be able to ask questions about their writing which will lead to improvements. Pre-requisite: ESL Placement score of 45-65. Co-requisite: ESL* 139 or ESL 141.

ESL* 144 Pronunciation IV**3 S.H.**

Focuses on studying and applying advanced techniques of American pronunciation using the basic concepts of rhythm, intonation and thought grouping. Students perform speaking activities to achieve an accent which is understandable to others in a professional and academic environment. This course satisfies the Foreign Language requirement. Prerequisite: ESL* 139

ESL* 151 Integrated Skills V**3 S.H.**

Refines use of idiomatic expressions while continuing to build fluency in all English language skill areas. Focuses class discussions, presentations, and assignments on multiple themes. Prerequisite: ESL* 141 or sufficient score on the ESL placement Test. This course satisfies the Foreign Language requirement and may also be used as Humanities elective credit toward graduation. *(This course may be taken concurrently with ESL* 139, ESL* 159 and ESL 180).*

ESL* 159 Writing V**3 S.H.**

Improves writing skills for use in both college and the workplace. Focuses on the writing process through group work and individual conferences with the instructor. Focuses on computer online writing development. Prerequisite: ESL* 141 or sufficient score on the ESL Placement Test. This course satisfies the Foreign Language requirement. *(This course may be taken concurrently with ESL* 131, ESL* 139, ESL* 141 and ESL* 151).*

ESL* 161 Integrated Skills VI**3 S.H.**

Advances English language skills through small group and individual instruction. Stresses multicultural themes through readings, class discussions, and oral presentations. Prerequisites: ESL* 159, ESL* 180, and ESL* 151, or sufficient score on the ESL Placement Test. *Students intending to take ENG* 101 or COM* 171 must receive a grade of "C" or better.* This course satisfies the Foreign Language requirement and may also be used as Humanities elective credit toward graduation. *(This course may be taken concurrently with ESL* 139, ESL* 144, ESL 169 and ESL* 180).*

ESL* 169 Writing VI**3 S.H.**

Improves general writing skills in academic English, involving short essay assignments. Early writing assignments will focus on essay development and organization. Focuses on computer online writing development. Prerequisites: ESL* 159, ESL* 180, and ESL* 151, or sufficient score on the ESL Placement Test. This course satisfies the Foreign Language requirement. *(This course may be taken concurrently with ESL* 139, ESL* 144, ESL* 161 and ESL* 180).*

ESL* 178 Advanced Reading and Writing**3 S.H.**

Designed to focus on the academic reading and writing process. Students will interact with various types of texts through reading and writing. Emphasis will be given to critical reading strategies and analysis of texts to help students refine their ability to interpret and summarize what they have read through the synthesization of ideas in essay development and organization. Focuses on computer online writing development. Prerequisite: Appropriate score on ESL placement or completion of ESL* 161 and 169 or recommendation of ESL Instructor or Coordinator. *Students intending to take ENG* 101 or COM* 171 must receive a grade of "C" or better.*

ESL* 180 Reading V**3 S.H.**

Focuses on reading comprehension skills, including phonics, use of dictionaries, words in context, main ideas, and supporting details in academic texts. Incorporates readings that reflect multiculturalism and the college experience. Prepares students for degree programs and/or taking the TOEFL exam. Prerequisite: ESL* 141 or sufficient score on the ESL Placement Test. This course satisfies the Foreign Language requirement. *(This course may be taken concurrently with ESL* 139, ESL* 144, ESL* 159, ESL* 169, ESL* 151 and ESL* 161).*

ESL* 191 Technical English VI**3 S.H.**

Integrates technical vocabulary into reading, writing, speaking, and listening comprehension. Concentrates on specific technical subjects. Prerequisite: ESL* 141 or sufficient score on the ESL Placement Test. This course satisfies the Foreign Language requirement. *(This course may be taken concurrently with ESL* 139, ESL* 169, ESL* 161 and ESL* 180).*

ESL* 250 TESOL Methodology**3 S.H.**

Introduces the theories of second language learning and demonstrates practical applications of these theories. Provides the opportunity to learn new techniques for teaching English and to do field work at all levels of ESL. This course satisfies the Connecticut state requirements for ESL Certification K-Adults.

ENVIRONMENTAL SCIENCE

EVS* 100 Introduction to Environmental Science (SK)**3 S.H.**

Examines the conceptual basis for today's environmental programs. Emphasizes water, solid waste, hazardous waste, air pollution, and local land use decisions by focusing on the biological, chemical, and physical aspects of environmental pollution, energy, and relationships between the environment and society. Considers environmental ethics, law, and relationships between environment, economics, and government. Field trips(s) required.

EVS* 114 Environmental Science (SR & SK)**4 S.H.**

Examines the scientific, social, and political aspects of environmental problems. Emphasizes water, solid waste, air pollution and local land use decisions by focusing on the biological, chemical, and physical aspects of environmental science. Examines energy sources and the relationships between the environment and society. This course also considers environmental ethics, law, and the relationships between the environment, economics and government. Laboratory exercises expand upon these various topics as they are discussed in lecture. Students who have taken and successfully completed EVS* 100 may not take EVS* 114. Three hours lecture/three hours lab.

EVS* 200 Toxicology**3 S.H.**

Focuses on toxicological principles, including FDA requirements relating to new drugs. Addresses environmental and other factors affecting the toxicity of therapeutic agents, mechanisms of toxicity, and clinical applications. Prerequisite: EVS* 100.

EVS* 296 Environmental Science & Toxicology Internship**4 S.H.**

Places students in a suitable internship in an industry of interest.

ENVIRONMENTAL ENGINEERING TECHNOLOGY

ENV* 100 Introduction to Alternative Energy Systems**3 S.H.**

Prepares students to compare and contrast alternate energy systems and traditional energy systems. Will introduce energy systems terminology, safety, energy sources, alternate energy systems and computer applications (LabVIEW & AutoCAD). Two hours lecture / two hours lab.

ENV* 103 Challenge of Climate Change**3 S.H.**

Surveys the causes and destructive consequences of civilizations' use of fossil fuel energy on global climate systems. Examines how the worldwide transition to sustainable operational models based on clean energy, energy efficiency, and environmental remediation present new opportunities for economic expansion and job growth. Reviews federal, state, and local initiatives on climate change and how government incentive programs and public-private partnerships are leading the conversion to a green economy.

ENV* 104 Sustainable Economic Development**3 S.H.**

Focusing on new models of sustainable economic development, this course defines green business operations, reviews sustainable economic design that works for all, and provides a 'hands-on', 'minds-on' framework for how to create 'green' public private development partnerships. primary drivers of sustainable economic growth and social changes.

ENV* 110 Environmental Regulations**3 S.H.**

Presents a broad view of federal, state, and municipal environmental regulations as they apply to industry, commercial establishments, local governmental facilities, and the individual citizen. Reviews elementary chemistry. Provides a practical approach to regulatory understanding to plan an effective and economically sound compliance program. Course topics also include the Clean Air Act (CAA); the Clean Water Act (CWA); the Water Toxins Program; the Resource Conservation and Recovery Act (RCRA); the Toxic Substance Control Act (TSCA); SARA Title III (Community Right-to-Know); and federal, state, and local regulations covering such topics as hazardous material transportation, in-ground tank storage, and such specific hazardous materials as asbestos and PCBs.

ENV* 181 Solar Thermal Systems**3 S.H.**

Introduces the history and principles of solar thermal energy as used for heating air and water in residential applications. Topics include historical uses of the sun, solar fundamentals, site analysis, basic thermal dynamics, simple uses of solar-heated fluids and “hands-on” testing and overview of various system components with an emphasis on workplace safety and best practices used in the installation of solar domestic hot water systems. Format includes classroom lecture, laboratory exercises and field trips to actual installations. Two hours lecture / two hours lab. Pre-requisites: MAT* 075 or sufficient score on the placement test.

ENV* 182 Solar Photovoltaic Systems I**3 S.H.**

Introduces the history and principles of Photovoltaics (solar electricity) as used in direct-coupled, remote, and grid-tied residential applications. Topics include historical use of the sun, solar fundamentals, site analysis, DC electricity basics and “hands-on” testing and overview of various system components of a basic PV installation with a continual emphasis on workplace safety and electrical code compliance. Format includes classroom lecture, assigned exercises, topical workshops and a field trip to an actual installation. Two hours lecture / two hours lab. Pre-requisites: MAT* 095 or sufficient score on the placement test.

ENV* 230 Environmental Engineering**3 S.H.**

Develops quantitative solutions to environmental problems concerning public health, air and water pollution, water and wastewater treatment, and solid waste management. Applies engineering methods to environmental preservation and protection. Prerequisites: WWT* 110, WWT* 112, WWT* 114, and WWT* 116, or State of Connecticut Wastewater Certification Levels I and II.

ENV* 237 Pollution Prevention (Course has not been offered in two years)**3 S.H.**

Presents the many steps being taken by governmental, commercial, industrial, and educational facilities to eliminate pollutant discharges. Pollution prevention (i.e., preventing the discharge of pollutants to eliminate the need for treatment and discharge into the air, ground, or water of a “waste stream”) has become a very important part of modern environmental protection. Field trip required. Prerequisite: EVS* 100 or instructor’s permission.

EXERCISE SCIENCE AND WELLNESS

EXS* 101 Introduction to Exercise Science and Wellness**3 S.H.**

An introduction to the fitness industry, the various career options available and the analysis of current and future industry trends. Analyzes the history of the field and the role of fitness specialists in society today. Prerequisite: Eligibility for ENG* 101.

EXS* 102 Seminar in Exercise Science and Wellness**3 S.H.**

Discusses an ever-changing range of exercise and wellness topics, their effects on the individual, the industry and society.

EXS* 115 Fitness Management**3 S.H.**

Presents the development and operations of a successful health and fitness business including management, marketing, sales, human resources, legal issues and more.

EXS* 210 Exercise Science & Wellness Internship I**2 S.H.**

Develops basic skills and competency in a variety of topics and settings including but not limited to exercise and wellness programming, workplace wellness, and fitness centers programming operation. Students participate in 150 hours of clinical work further developing their knowledge, skills and abilities as fitness professionals. Students must possess a current Adult First Aid and CPR certification that has a practical skills examination component (such as the American Heart Association or the American Red Cross). Prerequisites: EXS* 101 with a C or better. Corequisite: EXS* 115.

EXS* 212 Exercise Science & Wellness Internship II**2 S.H.**

Refines students’ skills in the development, marketing and management of exercise programming. Students participate in 150 hours of supervised field experience. Students must possess a current Adult First Aid and CPR certification that has a practical skills examination component (such as the American Heart Association or the American Red Cross). Prerequisites: EXS* 210, 225 and 227.

EXS* 225 Essentials of Strength and Conditioning**3 S.H.**

Practical application of the scientific principles behind the aerobic and anaerobic adaptations of training and various exercise forms and how they relate to different populations and their fitness goals. Exercise prescription and adaptation with regard to cardiovascular, resistance and specialty training. Prerequisite: BIO* 211. Corequisite: BIO* 212.

EXS* 227 Exercise Testing & Program Design (CALT)**4 S.H.**

Includes guidelines for laboratory testing used in a health and fitness setting and for exercise programming. Students will analyze the specific needs and concerns of each testing outcomes, and how to best work with each sector. Prerequisite: BIO* 211 and pre- or corequisite: EXS* 225.

EXS* 229 Human Biomechanics**4 S.H.**

Applications of the fundamental principles and systematic observations of the quality of human movement and how to best improve performance. Prerequisite: BIO* 211.

EXS* 230 Exercise Programming for Special Populations**3 S.H.**

Provides information on exercise testing and programming for people with a wide range of disease and disabilities. Focus on the unique requirements, the effects of exercise training, and recommendations for exercise are covered. Prerequisite: EXS* 227.

EXS* 235 Exercise Physiology**4 S.H.**

Focuses on the physiological factors affecting human performance in exercise and activity with special focus on the muscular, cardiovascular and circulatory systems under the effects of exercise through lecture and lab experiences. Prerequisites: BIO* 211, BIO* 212.

FIRE TECHNOLOGY and ADMINISTRATION

FTA* 100 Fitness and Health for Firefighters**3 S.H.**

Overview of fitness for current and prospective firefighters. Includes physical and mental aspects of performance for optimal achievement on fire department agility test and firefighting task. Prerequisite: M.D. physical and clearance to participate in physical fitness activities.

FTA* 101 Fundamentals of Firefighting I**9 S.H.**

The first of two courses that provides the essentials of firefighting including fire department operations, firefighting equipment and safety. Emphasis on the chemistry of fire, techniques of firefighting, and utilization of equipment in fire suppression. Physical training is mandatory and is expected daily. The GWCC Certification program is designed to meet all requirements of the State of Connecticut Commission of Fire protection, firefighter I certification. Prerequisite: acceptance into the GCC Firefighting I and II Certification Academy. M.D. physical and clearance to participate in physical activities, lifting, bending, and carrying up to 30 lbs.

FTA* 102 Fundamentals of Firefighting II**3 S.H.**

Continuation of the essentials of firefighting including fire department operations, firefighting equipment, and safety. Emphasis on the chemistry of fire, techniques of firefighting, and utilization of equipment in fire suppression. Physical training is mandatory and is expected daily. The GWCC Certification program is designed to meet all requirements of the State of Connecticut Commission of Fire protection, firefighter I and II certification.

FTA* 103 Civil Service Test Preparation**1 S.H.**

Provides preparator for civil service exams given to prospective firefighters. The course covers all aspects of the exam process including written, oral and physical ability testing. Students will review and practice basic concepts and skills in pre-algebra, writing, reading. Practice written test will be used to help the student identify areas for improvement. Also covers oral interviewing skills for fire department civil service exams. Students will be shown and provided preparatory information on candidate physical ability testing for fire departments. Prerequisite: FTA* 101.

FTA* 110 Fire Ground Hydraulics**3 S.H.**

Presents the principles of water and water flow, including water supply systems and water flow analysis. Emphasis on the movement of water through fire apparatus, appliances, hose and various nozzles. Covers fire apparatus and pumps, fire streams, fire service pressure calculations, and fixed fire extinguishing systems such as sprinkler and standpipe operations. Prerequisite: FTA* 101.

FTA* 112 Introduction to Fire Technology**3 S.H.**

Provides an overview to fire protection and emergency services, 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, fire strategy and tactics, and life safety initiatives.

FTA* 116 Building Construction**3 S.H.**

Provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures, pre-planning fire operations, and operating at emergencies.

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- FTA* 118 Fire Prevention and Inspection** **3 S.H.**
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, fire investigation. Prerequisite: FTA* 112
- FTA* 122 Fire Behavior and Combustion** **3 S.H.**
Explores the theories and fundamentals of how and why fires start, spread, and are controlled. Prerequisite: FTA* 112
- FTA* 126 Safety and Survival** **3 S.H.**
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. Prerequisite: FTA* 112
- FTA* 210 Water Supply and Hydraulics** **3 S.H.**
Provides a foundation of theoretical knowledge in order to understand the principles to analyze and solve water supply problems. Prerequisite: FTA* 112, MAT* 115 or higher.
- FTA* 212 Legal Aspects of Emergency Services** **3 S.H.**
Addresses the federal, state, and local laws that regulate emergency services and include a review of National standards, regulations, and consensus standards. Prerequisite: FTA* 112
- FTA* 213 Codes and Standards** **3 S.H.**
Presents fire and building codes as a means to provide reasonable public safety. Introduces code development and adoption processes and code administration. Reviews major regulatory organizations and national standards, emphasizing the Life Safety Code of the NFPA and its referenced standards.
- FTA* 216 Municipal Fire Administration** **3 S.H.**
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. Prerequisite: FTA* 112
- FTA* 217 Occupational Safety & Health for Emergency Services** **3 S.H.**
Introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk and hazard evaluation and control procedures for emergency service organizations. Prerequisite: FTA* 112
- FTA* 218 Extinguishing Systems** **3 S.H.**
Covers wet- and dry-pipe automatic sprinklers, both commercial and residential, as well as preaction and deluge systems, water spray and foam systems. Also discusses standpipes, carbon dioxide, dry chemical, and halon extinguishing and explosion suppression systems. Review appropriate NFPA Standards. Prerequisite: FTA* 210
- FTA* 219 Fire Investigation I** **3 S.H.**
Determines points of origin and causes of fires, discriminating between fires of accidental and intentional origin. Presents managing operations at the fire scene, collecting and preserving evidence, recording information, and scientific aids to investigation. Prerequisites: CHE* 111 and FTA* 116
- FTA* 227 Fire Protection Systems** **3 S.H.**
Provides information relating to the features of design and operation of fire alarm systems, water-based fire protection and portable fire extinguishers. Prerequisite: FTA* 210
- FTA* 229 Fire Investigation II** **3 S.H.**
This course intends to provide the student with advanced technical knowledge on the rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation and courtroom testimony. Prerequisite: FTA* 219
- FTA* 230 Strategy and Tactics** **3 S.H.**
Provides the principles of fire ground control through utilization of personnel, equipment, and extinguishing agents. Prerequisite: FTA* 112

FRENCH

Advanced language instruction beyond the courses listed below is available through Independent Study by arrangement with the instructor.

- FRE* 101 Elementary French I** **3 S.H.**
Presents the essentials of grammar and reading with practice in speaking and writing basic French. Open to students with little or no experience in French.

FRE* 102 Elementary French II**3 S.H.**

Improves language skills with further study of grammar, pronunciation, and basic speech patterns. Provides additional practice in reading and writing. Prerequisite: FRE* 101.

FRE* 201 Intermediate French I**3 S.H.**

Develops audio-lingual skills. Reviews basic principles of the language, including grammar with an emphasis on reading, writing, and speaking. Prerequisite: FRE* 102.

FRE* 202 Intermediate French II**3 S.H.**

Offers a thorough drill of grammar, typical speech patterns, and diction. Stresses conversation and composition, based on class readings, to develop mastery of the language. Prerequisite: FRE* 201.

GEOGRAPHY**GEO* 101 Introduction to Geography****3 S.H.**

Presents natural, cultural, and political environments, enabling students to better understand the world. Examines various professional opportunities in the field of geography and various habitats of the physical world, e.g., mountains, deserts, and plains, with particular emphasis on the relationship of place and self.

GRAPHICS**GRA* 149 Introduction to Adobe Creative Suite****3 S.H.**

Introduces the Adobe Creative Suite. Through lectures, demonstrations, exercises and projects, the students will learn technical skills and basic tools of digital art and design using Adobe Photoshop, Illustrator, and InDesign. (6 studio hours)

GRA* 151 Graphic Design I**3 S.H.**

Presents various problems in graphic design and typography. Explains the process of creation from rough layout to tight composition. Stresses creative and aesthetically successful solutions to graphic design problems. (6 studio hours) Pre or co-requisite: GRA* 149

GRA* 231 Digital Imaging (Photoshop)**3 S.H.**

Introduces and focuses on Adobe Photoshop and the manipulation of the still image in digital media. Through lectures, demonstrations, exercises, and real-world projects, students will learn how to alter and design images using the tools, functions, and libraries found in this Adobe Creative Suite program. (6 studio hours) Pre or Co-requisite: GRA* 149

GRA* 237 Computer Graphics (Adobe Illustrator)**3 S.H.**

Introduces and focuses on Adobe Illustrator. Through lectures, demonstrations, exercises, and real-world projects, students will learn how to use this Adobe Creative Suite program to create special imagery and typographic effects and apply these skills to solving design problems in print advertising, consumer packaging and desktop publishing environments. (6 studio hours) Pre or Co-requisite: GRA* 149

GRA* 241 Digital Page Design I (InDesign)**3 S.H.**

Through lectures, demonstrations, exercises, and real world projects, students will learn document construction, page layout and typography and will apply these techniques to solving design problems in electronic publishing environments. (6 studio hours). Pre or Co-requisite: GRA* 149

GRA* 252 Graphic Design II**3 S.H.**

Builds on the skills developed in Graphic Design I, this course introduces more advanced production techniques and stresses more advanced design concepts. (6 studio hours) Prerequisite: GRA* 151.

GRA* 261 Web Design I**3 S.H.**

Introduces students to web design. Using the programs in the Adobe Creative Suite as well as Dreamweaver, HTML coding and other programs, students will design and create their own website. (6 studio hours) Pre or Co-requisite: GRA* 149

HEALTH INFORMATION MANAGEMENT TECHNOLOGY

(Program has not been offered in the past two years)

HIM* 101 Medical Terminology**3 S.H.**

Introduces the language of medicine. Topics include basic word structure, prefixes, roots, suffixes, and terms pertaining to the body, including singular/plural forms. Also presents terminology related to body systems (cardiovascular/circulatory, digestive, female reproductive, integumentary, musculoskeletal, respiratory, and urogenital). Covers body system units, including anatomic, diagnostic, symptomatic, surgical, and eponymic terms, plus standard abbreviations and acronyms. Emphasizes defining and spelling elements and terms. Pre-requisite: Eligible for ENG* 101 or ESL* 161 or 169 with a grade of C or better.

HIM* 102 Introduction to Health Information Systems**3 S.H.**

(Course has not been offered in the past two years)

Introduces the theory, principles, and practices of health care records administration. Topics include the history of hospitals, medicine, and medical records; filing and numbering systems; content, uses, and analyses of health records; compiling health care statistics and reports; and the duties and responsibilities of health information management technicians. Prerequisite: Acceptance into the Health Information Management Technology program.

HIM* 201 Health Information Management Principles**3 S.H.**

(Course has not been offered in the past two years)

Introduces the principles of health information management. Topics include admitting procedures, analysis of medical records, organizing health information systems, statistics, and legal aspects of medical records services. Covers basic health information management areas related to the acquisition and maintenance of health care data. The purpose of this course is to introduce students to these concepts and develop their knowledge in the areas of numbering, filing, indices, registers, record retention, storage and retrieval systems, microfilming, and optical disk storage. Covers admitting and billing procedures and basic computerization in the health information management field, including keyless data entry techniques for bar coding, smart cards, voice recognition, magnetic strip, touch screens, electronic data interchange, and optical character recognition. Prerequisite: HIM* 102.

HIM* 202 Quality Assessment and Improvement**3 S.H.**

(Course has not been offered in the past two years)

Describes the quality assurance process for health care staff. Topics include external regulatory agencies, utilization reviews, medical care evaluations, and professional standards review organizations. Emphasizes the medical record, its content, importance, uses, forms, and the procedure of assembly and analysis. Also discusses, in depth, the guidelines from the joint commission on Accreditation of Health Care Organizations, the federal government's Conditions of Participation, and the American Osteopathic Association. Examines the different medical record formats and explains the types used commonly in various health care organizations. Prerequisite: HIM* 102. Corequisites: HIM* 201 and HIM* 214.

HIM* 203 Pathophysiology**3 S.H.**

(Course has not been offered in the past two years)

Introduces human disease using a systems approach, emphasizing the abnormal physiological processes that result in the signs and symptoms of various disorders. Also discusses the rationales behind treatments and the complex interrelationships between bodily systems. Prerequisites: BIO* 211, BIO* 212, and HIM* 101. Corequisite: HIM* 214.

HIM* 204 Disease Classifications and Indexing**3 S.H.**

(Course has not been offered in the past two years)

Covers the history, format, and conventions of the International Classification of Diseases and its use in health care documentation, statistics, research, education, and financial reimbursement through the prospective payment system. Also presents such secondary records as indices, registers, and follow-up registries. Incorporates terminology related to diagnoses, procedures and surgeries in the inpatient, acute-care setting. Introduces sequencing guidelines and rules for diagnoses, procedures, and surgeries. Considerable time will be spent learning the general coding rules and conventions for ICD-9-CM. The course further focuses on coding V codes, E codes, late effects, signs, symptoms, and other body system diseases and treatments. Uses various teaching methods, such as lectures, demonstrations, scenario presentations, workbook exercises, laboratory exercises, and homework assignments. Prerequisite: HIM* 214. Corequisite: HIM* 226.

HIM* 214 Directed Practice I**3 S.H.**

(Course has not been offered in the past two years)

Provides a supervised learning experience in a health care facility. Involves an overview of the health information management department with an emphasis on developing coding and medical correspondence skills. Furthermore, develops such health information processing skills as abstracting, statistics, and tumor registry. Students will meet eight hours a day, two days a week in an assigned clinical facility where they will apply their aforementioned skills. Prerequisite: HIM* 102. Corequisites: HIM* 202 and HIM* 203.

HIM* 226 Directed Practice II**3 S.H.**

(Course has not been offered in the past two years)

Provides a supervised learning experience in a health care facility where students have the opportunity to refine technical skills consistent with the needs of various health care delivery systems. Compares and contrasts the needs of different information systems, allowing students to observe management techniques and their effects on project completion. Enhances problem-solving skills for day-to-day situations and problems in an active, dynamic health information department. Students will meet eight hours a day, two days a week in an assigned clinical facility where they will apply the aforementioned skills. Prerequisite: HIM* 214. Corequisite: HIM* 204.

HISTORY

HIS* 101 Western Civilization I (HK)**3 S.H.**

Presents the basic forces that have shaped Western tradition, from the Neolithic age to the Renaissance and Reformation periods. Emphasizes the economic and political aspects of ancient, medieval, and early modern history.

HIS* 102 Western Civilization II (HK)**3 S.H.**

Examines the development of the mind from medieval to modern, with particular attention on trade, urban communities, and the commercial and manufacturing centers that altered economic, social, and political thinking.

HIS* 201 U. S. History I (HK)**3 S.H.**

Presents a special treatment of the social, economic, political, and cultural development of the American people, beginning with the Age of Discovery and Colonial settlement and continuing through the Civil War. Topics include Puritanism, Hamiltonianism, and Sectionalism.

HIS* 202 U. S. History II (HK)**3 S.H.**

Provides a topical, rather than a chronological, approach to the Reconstruction in the South, from 1865 to the present. Applies the same approach in the same time span to other topics, such as labor, agriculture, business, foreign affairs, and progressivism. Topics are based on a contemporary problem, taking into account its historical perspective.

HIS* 216 African-American History I**3 S.H.**

Demonstrates the significant role African-Americans have played in history. Starting in Africa, stresses such topics as slave trade and slavery. Continuing through the Colonial and antebellum periods to the Reconstruction and segregation eras, places the African-American in the proper perspective within the fully dimensional picture of America.

HIS* 217 African-American History II**3 S.H.**

Studies the African-American experiences from the Post-Reconstruction era through modern times. Illustrates some of the many success stories of African-Americans and identifies the obstacles that were placed in their way. Covers the Harlem Renaissance, Brown vs the Board of Education, the Civil Rights Movement, the Black Power Movement, and the Great Society.

HIS* 233 20th Century Russia**3 S.H.**

(Course has not been offered in the past two years)

Examines the intellectual, political, and socioeconomic changes in twentieth century Russia. Investigates post-revolutionary problems, both political and economic, during the consolidation of power by the Soviet dictatorship. Also addresses Glasnost, Perestroika, and the collapse of the Soviet Union.

HIS* 253 History of Human Rights**3 S.H.**

Examines the origin and development of the concept of human rights in the modern world. It will examine three major areas of human rights: political, social and economic, and cultural rights through the study of theoretical material and case studies. The main focus will be on Latin American and the United States.

HOSPITALITY MANAGEMENT

HSP* 100 Introduction to the Hospitality Industry**3 S.H.**

Examines the scope, components, and development of the hospitality and tourism industries. Overview of specialized fields and careers relating to the management of food service, lodging, and tourism operations. Covers the relationship between components of hospitality and meeting planning.

HSP* 101 Principles of Food Preparation**3 S.H.**

Introduces basic concepts and methods of cooking in all facets of food service operation. Lectures, demonstrations, and hands-on experience in food production will be used. In the food lab, students will learn proper methods of broiling, grilling, sauteing, roasting, and baking, using examples of meat, fish, poultry, and vegetables. Students will learn meat and fish fabrication, proper knife skills, tool and equipment use, weights, measures, and recipe conversion. Menu planning, purchasing, and the serving of food will be covered. Prerequisite: MAT* 075 or sufficient score on the mathematics placement test.

HSP* 103 Principles of Baking I**3 S.H.**

Introduces baking and pastry arts with intensive, hands-on laboratory training in a quantity food environment. Concentrates on the production and quality control of baked goods that are used in hotels, restaurants, resorts, and institutions. Laboratory classes emphasize basic ingredients and production techniques for breads, rolls, folded doughs, batters, basic cakes, pies, and creams. One hour of lecture / three hours of lab.

HSP* 105 Cake Decorating**2 S.H.**

Introduces students to the fundamental and necessary skills to commercial cake decorating. Students learn the basic techniques in buttercream frosting, royal icing, borders, and decorations. This is a half-semester class. Pre-requisite: HSP* 103. One hour of lecture / three hours of lab.

HSP* 109 Food Safety Certification (HSP* 108)**3 S.H.**

Presents sanitation, safety, and maintenance challenges encountered in the food service industry. Investigates causes and prevention of food-borne illnesses. A nationally recognized certificate will be awarded to students who pass the certification exam.

HSP* 112 Advanced Food Preparation**4 S.H.**

Emphasizes research of recipes, preparation of food, purchase orders, requisitions, and income and expense summaries for each menu. Students prepare full-course menus in quantity. Students will serve in various positions in the dining room and kitchen areas. One hour of lecture / five hours of lab. Prerequisite: HSP* 101 with a C or better.

HSP* 117 Beverage Management**3 S.H.**

Introduces the identification, use, and service of wines and other alcoholic beverages with an in-depth analysis of the various elements of beverage operations, including purchasing, control, legalities, merchandising, and bar management. Offered in the spring semester only.

HSP* 134 Hospitality Customer Relations**3 S.H.**

Introduces the concept and principles of treating customers as guests and create a “wow” experience for them. Explores the intricacies of quality guest service with solid and proven concepts across the hospitality industry. Students will develop communication and problem-solving skills and learn the art of cordiality, how to exceed guest expectations, handle difficult guests, resolve conflict, and analyze guest feedback to improve performance.

HSP* 201 International Foods**4 S.H.**

Student teams plan, prepare, and service full-course international menus. Emphasizes organization, showmanship, and supervision. Requires oral and written reports on food from different countries. One hour of lecture / five hours of lab. Prerequisites: HSP* 101, HSP* 110 with a C or better. Offered in the spring semester only.

HSP* 202 Catering and Event Management**3 S.H.**

Focuses on the production of buffets, banquets, and receptions. Promotes artistic production and participation in community service projects. Students prepare summaries and evaluations at the conclusion of each session. Covers the logistics of banquet and meeting room set-up and convention servicing. Offered in the spring semester only.

HSP* 208 Small Batch Baking**3 S.H.**

Focuses on a variety of different baked goods and the differences between them--what makes a cookie crisp or chewy, a biscuit tender or flaky, or a cake moist. Students will be responsible for preparation, baking, and critique of various items leading to the understanding of the principles of baking on a small scale. Students will learn the basics with the intention of creating their own recipes with this knowledge. This is a half-semester course. Prerequisite: HSP* 103.

HSP* 211 Food and Beverage Cost Control**3 S.H.**

Presents cost control methods, cost/volume/profit relationship, and purchasing as they relate to the food and beverage industries. Food and beverage cost determination, inventory, turnover, menu, and portion costing and forecasting will be discussed. Offered in the fall semester only. Prerequisite: MAT* 075.

HSP* 212 Equipment Design and Layout**3 S.H.**

(Course has not been offered in the past two years)

Presents the concepts of equipment and layout and their interrelationship in a well-organized food service facility. Considers equipment selection based on menu, volume, and budget requirements. Focuses on equipment design and layout methodology. Prerequisites: HSP* 101 and HSP* 108.

HSP* 215 Principles of Baking II**3 S.H.**

Focuses on the preparation of advanced pastries and classical desserts, including the preparation of petit fours, cake decoration and calligraphy, sugar and chocolate work, ice cream, and showpieces. One hour of lecture / three hours of lab. Prerequisite: HSP* 103.

HSP* 217 Artisan Bread**2 S.H.**

Focuses on the formulating, preparation, packaging, and pricing of commercially produced artisan bread. Students will learn how to work with non-yeast ferments, levains, commercial starters, enriched dough, and naturally leavened breads while maintaining a professional work environment. Emphasis will be placed on the science of bread production as well as the ‘art of baking.’ Whole grain flours, laminated dough, shaping loaves, boules, braids, etc. will be studied. This is a half-semester course. Pre-requisite: HSP* 103.

HSP* 231 Hospitality Law**3 S.H.**

Introduces the basics of hotel, motel, restaurant, and travel law. Covers the fundamental laws, rules, regulations, and contracts applicable to the hospitality and meetings industries. The hotel-guest relationship laws regarding food and beverage service, negotiation, mediation, and contract relationships between management and vendors will be discussed. Offered in the fall semester only.

HSP* 232 Restaurant Management**3 S.H.**

Focuses on the important elements involved in the successful operation and how they interrelate. The process of creating a concept, developing a menu, budgeting, controlling costs, staffing, purchasing food and equipment, bar and beverage management, daily operations, and developing a marketing plan will be covered.

HSP* 237 Hospitality Marketing**3 S.H.**

Focuses on marketing and sales as they apply to the hospitality industries, especially methods of marketing a hotel, restaurant, and destination. Topics include marketing basics, the marketing plan, sales promotion, and special challenges in this industry. The relationship of sales and marketing to the meetings and conventions industry will be discussed.

HSP* 241 Principles of Tourism and Travel**3 S.H.**

(Course has not been offered in the past two years)

Introduces the tourism field, highlighting goals of the tourism profession and providing a guideline for achieving individual and collective success. Covers market analysis and conceptual planning of site development, transportation, accommodations, and support industries. Presents a comprehensive view of the field, dramatically bringing to the forefront the immense propositions of world tourism, examining its past and present, and providing a direction for the future.

HSP* 244 Meetings, Conventions, and Special Events Management**3 S.H.**

Introduces methods of creating successful meetings, conventions, and special events. Topics include setting objectives, program design, site selection, budgeting, negotiations, room setups, audio visual, travel arrangements, and contracting for services.

HSP* 246 Hotel Accounting and Front Office Management**3 S.H.**

Emphasizes accounting procedures and functions of the front office, including internal control procedures, guest services, housekeeping, and reservations. Places attention on the needs of management and the application of accounting concepts and techniques to managerial decision making. Explores the interaction of the front office and other areas of the hotel in relationship to customer service.

HSP* 249 Food Writing**3 S.H.**

Students will find a way to express their culinary sensibilities in the form of reviews, essays, blogs, media presentations, cook books, and recipe writing. Much of the course will be devoted to analyzing both professional and student work.

HSP* 295 Hospitality Management, Internship/Work Experience I**3 S.H.**

Provides an opportunity to gain experience in a hotel, restaurant, food service, travel or hospitality-related business. This must be a new experience to the student. Requires completion of 120 internship hours at a site conducive to the student's career goals which is designated by the instructor. Prerequisite: Program coordinator's permission, a minimum GPA of 2.50, completion of 18 earned HSP* credit hours and a GPA of 2.75 in HSP classes.

HSP* 298 Hospitality Management Internship/Work Experience II**1 S.H.**

Provides an opportunity for students to gain experience in a hotel, restaurant, foodservice, travel or hospitality-related business. The student is responsible for seeking paid employment in the hospitality industry. A total of 280 hours must be completed and documented with paystubs between June 1 and August 10. Pre-requisite: HSP* 295, Program coordinator's permission, a minimum GPA of 2.50, completion of at least half of their program and earned at least 18 HSP* credit hours and a GPA of 2.75 in HSP classes.

HUMAN DEVELOPMENT

HDV 100 Orientation to College**1 S.H.**

Orients a new student to Gateway Community College. Addresses personal development topics (such as stress management and career planning) and study skills (including note taking and preparing for tests). Provides students with the skills and strategies to solve problems they are likely to encounter when they enter college.

HDV 101 Survival at College**1 S.H.**

Introduces students to strategies and techniques for setting and accomplishing academic, personal or professional goals. Focuses on how to navigate expectations and projections that interfere with achieving objectives even when faced with obstacles. Students learn how their thoughts, feelings and behavior when directed toward creating positive experiences, can support their success and alter their lives' course.

HDV 103 Career Planning**1 S.H.**

Explores career opportunities within a small group. Students will learn about the process of career decision making, including an examination of values and interests and the use of information about various occupations.

HDV 104 Strategies for Academic Success**2 S.H.***

Offers academic support to students having difficulty successfully completing college level work. Enhances students' capabilities through group work and individualized attention to identified academic deficiencies. Students will be strongly supported by Student Services personnel. *Credit does not count toward meeting degree requirements.

HDV 105 Learning Strategies**2 S.H.***

Improves the study skills of beginning students to help them successfully complete college level work. Stresses learning strategies, including goal setting, time management, productive study habits, note-taking and test-taking techniques. Emphasizes memory and concentration enhancements as well as promoting active listening behaviors. Placement: Results of ACCUPLACER. *Credit does not count toward meeting degree requirements.

HUMAN SERVICES

HSE* 101 Introduction to Human Services**3 S.H.**

Introduces the history, philosophy, ethics, and values of the human services field. Compares the variety of structures, goals, and methods of service delivery, focusing on the human service network of New Haven.

HSE* 151 Introduction to Therapeutic Recreation**3 S.H.**

Presents the history, philosophy, and concepts of Therapeutic Recreation services in community and institutional settings. Students will learn how special population groups use and benefit from the skills of therapeutic recreation specialists.

HSE* 152 Programming in Therapeutic Recreation**3 S.H.**

Teaches the purpose of recreational services, how to use the methods and materials. Describes the rehabilitation process and how to apply the correct programs to specific groups.

HSE* 153 Methods and Materials for Therapeutic Recreation**3 S.H.**

Explains in a concentrated form the methods and materials used in various recreational settings. Assesses the physical, mental, emotional, and social abilities of clients who need therapeutic recreation services. Presents group activities that incorporate, among other methods, crafts, drama, dance, and music to create well-rounded therapeutic recreation programs. Prerequisite: HSE* 152.

HSE* 212 Mediation (OC)**3 S.H.**

Designed to introduce mediation philosophies, approaches, applications, and skills for all types of third-party conflict interventions. Provide students with opportunities to effectively use nonviolent communication strategies, evaluate and critique conflict situations and generate alternative dispute solutions in different environments: these include local businesses, nonprofit organizations, primary and secondary schools, and public health institutions. At the completion of the course, students will be able to observe, volunteer, co-mediate, and participate in specialized trainings at mediation centers around the state. Prerequisites: ENG* 101 (or higher).

HSE* 228 Youth Work Seminar**3 S.H.**

Students enrolled in the youth worker certificate program and who are also concurrently enrolled in either HSE* 281 or HSE* 282 will meet for this small group seminar. At these seminars, agencies will present ways in which they serve youth by implementing the youth worker philosophy in their provision of services. Students will learn to apply theoretical concepts to their practice specialty through direct experience and supportive seminar learning experiences. Corequisite: HSE* 281 or HSE* 282.

HSE* 247 Supervisors' Seminar**3 S.H.**

Focuses on concepts, principles, and methods of supervising new professionals and/or paraprofessionals. Focuses on issues confronting the supervisor in traditional settings. Intended for administrators, managers, teachers, and professionals who work in human service agencies and organizations.

HSE* 271 Field Work Seminar I**3 S.H.**

Presents how to integrate and process knowledge and theory learned in foundation courses with experiences gained at the field site. The seminar acts as a forum for sharing field experiences and as a peer support group. Focuses on developing the skills necessary for human services practice, i.e., observation, human relations, interviewing, self-awareness, and leadership. Corequisite: HSE* 281.

HSE* 281 Human Services Field Work I**3 S.H.**

Provides prospective human services workers with an opportunity to learn experientially at a human services agency in the community. Focuses on how an agency functions through direct experience in a part of that agency. Requires a minimum of eight hours a week at the placement agency. Corequisite: HSE* 271.

HUMANITIES**HUM* 125 Introduction to Peace and Conflict Studies (CALT)****3 S.H.**

Presents an interdisciplinary study of the concepts of positive and negative peace, nonviolence, human rights, justice, truth and reconciliation, peacebuilding, peace makers and peace keeping as they relate to economic, sociological, psychological, historical, political, technological, cultural, ideological, geographical, and environmental factors. Prerequisite: Eligibility for ENG* 101.

HUM* 130 Philosophy and Practice of Yoga**3 S.H.**

Investigates the philosophy of yoga, its origins, and its place in our contemporary lives. Teaches the different aspects of yoga and areas of study that encompass the fundamental principles of the discipline. Teaches basic poses as well as meditation and breathing techniques.

INTERDISCIPLINARY STUDIES**IDS 106 Critical Thinking - Business (CALT)****3 S.H.**

This thematic Business course meets the Critical Analysis and Logical Thinking competency of the TAP common core. Introduces diverse academic content emphasizing the acquisition of learning strategies to support students in college-level study, while increasing their understanding of community engagement and life-long learning. Focuses on developing creative and critical thinking skills, improving written and oral communication, setting personal and academic goals, and becoming engaged members of the community. Seminars explore topics related to the meanings of higher education through a focus on the process of learning how to evaluate arguments, draw reasoned inferences, and make decisions synthesizing information across the disciplines. This will be accomplished through in-class seminars, workshops, and service-learning initiatives. In addition, students will develop a comprehensive academic and career development plan leading to graduation.

IDS 112 Career Seminar & Internship (CALT)**3 S.H.**

Designed to promote career exploration and academic program selection by introducing general studies students to career and major options. Will introduce students to industry-specific expectations and experiences both in and out of the classroom integrating coursework and practical applications. Provides on the job training and internship experiences in a variety of workplace environments. Students are required to work a total of 80 hours during 8 weeks of the 15 weeks in the semester. Prerequisites: ENG* 101 and completion of at least 15 hours of college level courses or instructor's permission.

IDS 114 Foundations of Academic Inquiry**3 S.H.**

Introduces students to academic inquiry and the academic environment through the exploration of a current event/issue/controversy. The thematic approaches may include current topics in politics, the environment, technology, social justice, popular culture and more. Through the academic investigation of the theme, students will learn skills necessary for success in college and beyond.

IDS 292 Peace/Conflict Service Learning Internship**3 S.H.**

Designed to provide students a professional employment environment where they can apply skills in conflict resolution, resolving ethical conflicts, and the use of mediation developed through the Interdisciplinary Peace, Collaboration and Conflict Certificate coursework. Students focus on career paths and continued study at institutions of higher learning. This course provides opportunities for extended training, research projects and presentations for workshops and conferences. Requires 60 hours with a minimum of 6 hours a week at placements and/or extended trainings. Prerequisites: HUM* 125, PHL* 111, HSE* 212, and 3 credits of restricted electives.

IDS 295 Service Learning Internship**3 S.H.**

Provides an opportunity for students to gain experience in business, industry, government, or not-for-profit organizations. Students will devote a minimum of three hours per week per credit working at the internship organization during the academic semester. Provides students an opportunity to serve the community, gain practical work experience, and develop a deeper understanding of the social needs of our community. Prerequisites: 30 credits; minimum GAP of 2.5; and written permission from their Program Coordinator, Department Chairperson, or Division Director. Students will be interviewed prior to taking this course. Instructor's permission is required for registration.

ITALIAN

Advanced language instruction beyond the courses listed below is available through Independent Study by arrangement with the instructor.

ITA* 101 Elementary Italian I

3 S.H.

Presents the essentials of grammar and reading with practice in speaking and writing simple Italian. Stresses pronunciation. Open to students with little or no experience in Italian.

ITA* 102 Elementary Italian II

3 S.H.

Emphasizes aural comprehension, pronunciation, and basic conversation. Continues practice in speaking and writing. Stresses the basic structure of Italian grammar. Prerequisite: ITA* 101.

ITA* 201 Intermediate Italian I

3 S.H.

Reviews and deepens knowledge of Italian grammar with more emphasis on reading and vocabulary building. Intensifies practice in speaking and some reading of contemporary prose. Prerequisite: ITA* 102.

ITA* 202 Intermediate Italian II

3 S.H.

Stresses conversational patterns and practices. Presents Italian literature and culture. Provides the skill training required to read and translate Italian. Prerequisite: ITA* 201.

MANUFACTURING ENGINEERING TECHNOLOGY

MFG* 102 Manufacturing Processes

3 S.H.

Provides theoretical concepts of manufacturing and develops the knowledge and skills required in the manufacturing process. The laboratory portion introduces common metal cutting tools, lathe operations, and associated precision measuring tools and instruments. Labs will involve set-up and preparation of milling machines, lathes, grinders, and drill presses. Two hours of lecture / three hours of laboratory. Co-requisite: ARC* 133.

MFG* 108 Computer Aided Manufacturing

4 S.H.

Focuses on the process of manual and automated preparation of computerized manufacturing system programs. The laboratory portion provides experience in the manual and automated preparation of computerized manufacturing system programs. Three hours of lecture / two hours of laboratory. All classes conducted in computer laboratories. Prerequisite: MFG* 102.

MFG* 116 Quality Assurance Organization and Management

4 S.H.

Develops the concepts of a Total Quality System (TQS), including policies, objectives, and organization. Reviews such topics as cost of quality, planning, improvement techniques, reliability, supplier relations, and evaluations. Addresses inspection, measurement, and process control techniques. Covers customer and consumer relations.

MFG* 204 Advanced Computer Aided Manufacturing

4 S.H.

Builds on the skills learned in CAM I with sharper focus on the integration of CAD and CAM for fast prototyping and design for manufacturing. The laboratory portion introduces practical applications for automated CAM systems. Three hours of lecture / two hours of laboratory. All classes are conducted in computer laboratories. Prerequisite: MFG* 108.

MFG* 208 Process Engineering

4 S.H.

Introduces the principles and techniques used to design the most efficient method of product manufacturing, establish the best sequence of operations, select the proper machines to perform the operations, evaluate the need for special tooling, and provide conceptual sketches of special tools. The laboratory portion consists of workshop problems that prepare the student for an entry-level position in manufacturing process design. Exercises cover such conventional machine tools as turn, drill, mill, broach, CNC, grind, and miscellaneous processes. Three hours of lecture / two hours of laboratory. Prerequisite: MFG* 102.

MFG* 210 Materials of Engineering

4 S.H.

Studies the structure and properties of engineering materials. Discussed materials selection, processing and heat treatment. Addresses the changes in structure and properties during forming, machining and heat treating operations. The laboratory portion uses selected experiments to demonstrate the effects of processing including heat treatment on the properties of engineering materials. Standard materials tests are also performed. Three hours of lecture/two hours of laboratory. Prerequisite: MFG* 102.

MFG* 216 Tool Designing

4 S.H.

Covers the theory of metal cutting tools design. Presents the principles, practices, tools, and commercial standards of single point, jig, fixture, and die design through lectures, visual aids, and individual projects and design work. The laboratory portion provides practice in the design of metal cutting tools. Two hours of lecture / four hours of laboratory. Prerequisites: CAD* 108 and MFG* 102.

MFG* 228 Computer Integrated Manufacturing I**4 S.H.**

Covers computer generated CNC programming, robot programming, analog programmable logic control programming, and interfacing of robots, controllers and machine tools. Discussed part families, CAD/CAM and Flexible Manufacturing Systems. The laboratory portion provides practice in writing computer generated CNC programs, robotic programming and interfacing and analog programmable logic controller programming. A flexible manufacturing system is programmed. Three hours of lecture/two hours of lab. Prerequisites: CAD* 108, MFG* 108.

MFG* 230 Statistical Process Control**3 S.H.**

Presents a practical management aid adapted from the science of statistics. Presents topics ranging from basic statistical concepts to techniques for cost and quality control, emphasizing control by charting and acceptance sampling. Uses the computer as an aid in calculation and control chart preparation. Prerequisite: MFG* 102.

MFG* 239 Geometric Dimensioning and Tolerancing**3 S.H.**

Focuses on the industrially accepted ANSI Specification Y14.5-1973 and ANSI Y14.5M-1982. The ANSI Y14.5 specification creates a unified language that specifies engineering requirements related to the actual function of and relationship between parts. 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.

MFG* 296 Manufacturing Internship**3 S.H.**

Provides practical experience in the manufacturing field. The assignment can involve one or more of the subjects relevant to manufacturing engineering technology, including drafting, manufacturing processing, CAD, CAM, quality control, and tool design. Prerequisites: Good academic standing and the consent of the academic advisor or the Manufacturing Program Coordinator.

MATHEMATICS

Placement: Determined by ACCUPLACER or course prerequisites as indicated.

MAT* 085 Elementary Algebra Foundations w/Pre-Algebra**6 S.H.***

Embeds additional support into the MAT 095 topics to present an introductory course in Algebra including a concentrated arithmetic review. Topics include whole numbers, signed numbers, decimals, fractions, ratios, proportions, percent, estimation, geometry, linear equations and inequalities in one variable, graphing linear equations and inequalities in two variables, formulating equations of lines in two variables, an introduction to functions, solving systems of linear equations, rules of integral exponents, and operations on polynomials. *Credit does not count toward degree requirements or graduation. A Graphing Calculator is required: TI-83 or TI-84 family is strongly recommended.

MAT* 095 Elementary Algebra Foundations**3 S.H.***

A study of the basic properties and theorems of real numbers, including the manipulation of polynomials and expressions containing rational and radical terms as well as integer exponents. Topics also include linear equations in one and two variables, systems of linear equations in two variables, and an introduction to functions. There is an emphasis on real world applications in both algebra and geometry. * Credit does not count toward degree requirements or graduation. A graphing calculator is required--TI-83 or TI-84 family is strongly recommended. Prerequisites: A grade of C or better in MAT* 075 or MAT* 085/097 or sufficient score on the mathematics placement test.

MAT* 095W Elementary Algebra Foundations Workshop**3 S.H.***

This course embeds the additional support needed to complete MAT* 095 and together the two courses present an introductory course in Algebra including a concentrated arithmetic review. Topics include whole numbers, signed numbers, decimals, fractions, ratios, proportions, percent, estimation, geometry, linear equations and inequalities in one variable, graphing linear equations and inequalities in two variables, formulating equations or lines in two variables, an introduction to functions, solving systems of linear equations, rules of integral exponents, and operations on polynomials. This course must be taken linked to a seven-week MAT* 095 during the same semester. * Credit does not count toward degree requirements or graduation. An online computer homework supplement is available in all sections. A graphing calculator is required: TI-83 or TI-84 family is strongly recommended. Prerequisites: A grade of C-, D+, D, or D- in MAT* 075 or a sufficient score on the mathematics placement test. Co-requisites: MAT* 095 (linked 7 week course in the same semester).

MAT* 097 Elementary Algebra Foundations with Prealgebra**5 S.H.***

Combines MAT* 075 and MAT* 095 topics to present an introductory course in Algebra including a concentrated arithmetic review. Topics include whole numbers, signed numbers, decimals, fractions, ratios, proportions, percent, estimation, geometry, linear equations and inequalities in one variable, graphing linear equations and inequalities in two variables, formulating equations of lines in two variables, an introduction to functions, solving systems of linear equations by graphing, rules of integral exponents and operations on polynomials. * Credit does not count toward degree requirements or graduation. A graphing calculator is required. A calculator in the TI-83 or TI-84 family is strongly recommended. Prerequisites: A sufficient score on the mathematics placement test; or a grade of C-, D+, D, or D- in MAT* 075.

MAT* 109 Quantitative Literacy**3 S.H.**

Introduces the language of mathematics. Topics include consumer mathematics, percent, personal loans and simple interest, compound interest, installment buying, buying a house with a mortgage, annuities and sinking funds. A brief study of the history of mathematics, including early numeration systems. A basic introduction to game theory and voting and apportionment. This course may be used to satisfy the mathematics requirement for graduation. Prerequisite: MAT* 085, MAT* 095, MAT* 095A, B, and C, MAT 097 with a grade of D or better or sufficient score on the mathematics placement test.

MAT* 115 Mathematics for Science and Technology**3 S.H.**

Presents basic mathematical concepts needed in the science and technology fields. Includes scientific notation, English and metric systems, solutions to first- and second-degree equations, systems of equations, logarithms, elementary geometry, statistics, graphing, and trigonometry. Introduces the scientific calculator. Prerequisite: A grade of C or better in MAT* 085, MAT* 095, MAT* 095 A, B, or C, MAT 097 or sufficient score on the mathematics placement test.

MAT* 117 Introduction to Finite Mathematics**3 S.H.**

Presents various mathematical topics, including a review of basic algebraic concepts, mathematics of finance, systems of linear equations and matrices, linear inequalities and linear programming, probability, and game theory. Prerequisite: A grade of C or better in MAT* 085, MAT* 095, MAT* 095 A, B, or C, MAT 097 or sufficient score on the mathematics placement test.

MAT* 123 Elementary Statistics**3 S.H.**

Considers fundamental concepts of probability and statistics including mean, median, mode for grouped and non-grouped data, permutations, combinations, applications of distributions, hypothesis testing, and confidence intervals. Prerequisite: A grade of C or better in MAT* 085, MAT* 095, MAT* 095 A, B, or C, MAT 097 or sufficient score on the mathematics placement test.

MAT* 137 Intermediate Algebra**3 S.H.**

Presents a study of linear, radical, rational, quadratic, and exponential functions represented by tables, graphs, words, and symbols. Focus is on the manipulation of expressions and the solving of equations using multiple methods. There is emphasis on modeling and applications for all topics. A graphing calculator is required. Prerequisite: A grade of C or better in MAT* 095 or MAT* 095C, or sufficient score on the mathematics placement test.

MAT* 137A Intermediate Algebra for Advanced Studies**4 S.H.**

Presents a study of functions represented by tables, graphs, words, and symbols. Focus is on the manipulation of expressions and the solving of equations that are radical, rational, exponential, and quadratic. Additional topics include first and second degree and absolute value inequalities, systems of non-linear equations, and dimensional analysis. There is an emphasis on modeling and applications for all topics. A graphing calculator is required. ***This course is intended for students who will need higher level Mathematics courses (MAT* 172 or MAT* 175).*** Prerequisite: A grade of C or better in MAT* 095 or MAT* 095C, or sufficient score on the mathematics placement test.

MAT* 137C Intermediate Algebra w/Embedded Elementary Algebra**4 S.H.**

This course embeds additional support into the MAT* 137 course to present an intermediate course in Algebra including a concentrated review of the algebra fundamentals. Offers a study of linear, radical, rational, quadratic, and exponential functions represented by tables, graphs, words, and symbols. Focus is on the manipulation of expressions and the solving of equations using multiple methods. There is emphasis on modeling and applications for all topics. This course is recommended for students who have some knowledge of elementary algebra but require reinforcement. A graphing calculator is required for this course. Prerequisites: A minimum grade of C or better in MAT* 085 or MAT* 097, or a minimum grade of D in MAT* 095 or MAT* 095C or sufficient score on the mathematics placement test.

MAT* 142 Mathematics for the Natural Sciences (QR)**3 S.H.**

Presents the numerical and algebraic manipulation of data, curve sketching, and curve fitting. Solutions to problems with a calculator, using examples from the natural sciences. This course may be used to satisfy the mathematics requirement for graduation. Prerequisite: A grade of C or better in MAT* 137, Higher, or MAT* 137C or sufficient score on the mathematics placement test.

MAT* 143 Mathematics for Elementary Education: Algebra/Number Systems I (QR)**3 S.H.**

Presents mathematical reasoning for problem solving sets, whole numbers, numeration systems, number theory, and integers. Required of all students in and working toward certification in elementary education. This course may be used to satisfy the mathematics requirement for graduation. Prerequisite: A grade of C or better in MAT* 137, Higher, or MAT* 137C or sufficient score on the mathematics placement test.

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- MAT* 144 Mathematics for Elementary Education: Geometry and Data** **3 S.H.**
Presents geometry, measurement, rational numbers, irrational numbers, ratio, proportion, percent, problem solving, mathematical reasoning and connections, probability, and statistics. This course may be used to satisfy the mathematics requirement for graduation. Prerequisite: A grade of C or better in MAT* 143.
- MAT* 146 Mathematics for the Liberal Arts (QR)** **3 S.H.**
Intended for the student whose major field of study requires no specific mathematical preparation. This course examines logical structures, patterns and method of abstractions as they occur in a variety of basic mathematical topics such as set theory and number theory. Some historical aspects of mathematics are considered. Prerequisite: A grade of C or better in MAT* 137, Higher, or MAT* 137C or sufficient score on the mathematics placement test.
- MAT* 151 Mathematics of Finance (QR)** **3 S.H.**
Presents the basic mathematical operations of finance. Includes allocation of depreciation and overhead costs, financial statements and ratios, inventory evaluation, trade and case discounts, simple interest and bank discount, multiple payment plans and various compound interest calculations. Introduces and expands upon certain topics in the accounting sequence. Prerequisite: MAT* 137, Higher, or MAT* 137C.
- MAT* 158 Functions, Graphs, & Matrices (QR)** **3 S.H.**
Presents selected topics from contemporary mathematics with applications for students in business, economics, and social science. Topics include concepts of functions and rate of change, a review of algebraic and graphical aspects of polynomial functions, a study of exponential and logarithmic functions, mathematical modeling, and operations on systems of linear equations including matrix operations. A graphing calculator is used throughout the course. Prerequisite: A grade of C or better in MAT* 137, MAT* 137A, or MAT* 137C or sufficient score on the mathematics placement test. Co-requisite: Eligibility for ENG* 101.
- MAT* 166 Principles of Business Statistics** **3 S.H.**
Presents statistical techniques appropriate for analyzing and solving problems in business and social science. Students will learn statistical concepts and methods of solving statistical problems. Introduces the following: data presentation in tabular and graphic forms, measures of central tendency and dispersion, time series, probability, statistical inference, hypothesis testing, analysis of variance, regression and correlation analysis, and decision-making theory. Uses computing statistical software such as Excel with add-ins and/or technology as needed or appropriate. Prerequisites: A grade of C or better in MAT* 137 or Higher or higher and CSA* 135 or BBG* 115 or BOT* 216.
- MAT* 167 Principles of Statistics (QR)** **3 S.H.**
Introduces the concepts of collecting and compiling data. Reviews data presentation in tabular and graphic forms, bivariate data and its presentation, probability and probability structures, inferential statistics, analysis of variance, and hypothesis testing. Uses statistical computing software. Prerequisite: MAT* 137, Higher, or MAT* 137C.
- MAT* 172 College Algebra (QR)** **3 S.H.**
Briefly reviews the algebraic operations of real numbers. Offers an intense study of logarithms, exponential and logarithmic functions, systems of equations, determinants and matrices, and complex numbers. Prerequisite: A grade of C or better in MAT* 137A or sufficient score on the mathematics placement test.
- MAT* 175 College Algebra and Trigonometry (QR)** **3 S.H.**
Covers the basic manipulation of algebraic expressions, equations, and inequalities. Introduces factoring, trigonometry, exponents, radicals, and graphing. Uses the graphing calculator. Prerequisite: A grade of C or better in MAT* 137A or sufficient score on the mathematics placement test.
- MAT* 185 Trigonometric Functions (QR)** **3 S.H.**
Studies trigonometric functions, identities, and conditional trigonometric equations. Includes multiple angle functions, radian measure, and selected applications of trigonometry. Prerequisite: MAT* 172 or MAT* 175.
- MAT* 186 Precalculus (QR)** **4 S.H.**
Covers symmetry and transformation, polynomial and rational functions, exponential and logarithmic functions and equations, trigonometric functions, trigonometric identities, inverse functions and equations. Addresses advanced trigonometry and applications. Includes such topics as partial fractions, conic section, and non-linear systems of equations and inequalities in preparation for Calculus I. Uses the graphing calculator. Prerequisite: A grade of C or better in MAT* 172 or MAT* 175 or permission of instructor.
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MAT* 230 Applied Calculus with a Modeling Approach **3 S.H.**
Presents selected topics from calculus with applications in business, economics, and social science. Students will learn the fundamental concepts of calculus and how to apply them to real-life problems. A major goal is to develop conceptual understanding (rather than algebraic manipulation) through the use of graphing calculators and through the consideration of graphical, numerical, and algebraic perspectives. The major conceptual focus is on rates of change and their interpretations within the problem context. The definition of integral, the fundamental theorem of calculus, some selected application of integration and some integration techniques are included. A TI-83+/TI-84+ graphing calculator is required and used throughout. Prerequisite: A grade of C or better in MAT* 158 or higher and eligibility for ENG* 101.

MAT* 254 Calculus I (QR) **4 S.H.**
Applies limits, continuity, differentiation, antidifferentiation, and definite integrals to the physical and engineering sciences. Includes use of graphing calculators and/or computer laboratory activities. Prerequisites: A grade of C or better in MAT* 185, MAT* 186.

MAT* 256 Calculus II (QR) **4 S.H.**
Applies transcendental functions, formal integration, polar coordinates, infinite sequences and series, vector algebra, and geometry to the physical and engineering sciences. Includes use of graphing calculator and/or computer laboratory activities. Prerequisite: A grade of C or better in MAT* 254.

MAT* 268 Calculus III: Multivariable (QR) **4 S.H.**
Covers two- and three-dimensional vector algebra, calculus of functions of several variables, vector differential calculus, and line and surface integrals. Prerequisite: A grade of C or better in MAT* 256.

MAT* 272 Linear Algebra **3 S.H.**
A comprehensive introduction to linear algebra and its applications, including matrix algebra and reduction techniques, vector spaces, linear transformations, and Eigenvalue theory. Graphing calculators and computer software will be used. Prerequisite: A grade of C or better in MAT* 268 or departmental permission.

MAT* 285 Differential Equations (QR) **3 S.H.**
Introduces ordinary differential equations and their applications, linear differential equations, systems of first order linear equations, and numerical methods. Prerequisite: A grade of C or better in MAT* 268.

MECHANICAL ENGINEERING TECHNOLOGY

MEC* 104 Mechanics - Statics **3 S.H.**
Analyzes the forces acting on various types of two- and three-dimensional structures in static equilibrium. Studies the composition and resolution of forces acting on beams, trusses, frames, and machines. Also covers centroids, distributed forces, moments of inertia, and friction. The laboratory portion provides problem-solving applications of the theory learned in the classroom, emphasizing engineering analysis and the preparation of written reports. Three hours of lecture. Prerequisite: MAT* 175 or PHY* 121 or sufficient score on the mathematics placement test.

MEC* 234 Electromechanical Controls **4 S.H.**
Introduces the student to the fundamentals of electric circuits and electrical machinery emphasizing DC/AC single and polyphase motors and generators. Presents electrical methods of manual and automatic control of mechanical systems. The laboratory portion covers motors, control systems, digital logic, and applications. Emphasizes the organization, report, and interpretation of test data in a written report for each experiment. Three hours of lecture / two hours of laboratory. Prerequisite: MAT* 095 or sufficient score on the mathematics placement test.

MEC* 240 Fundamentals of Thermodynamics **4 S.H.**
Presents the thermodynamic principles of heat, work, non-flow and steady flow processes, and thermodynamic cycles. Stresses the fundamental principle of energy conversion and the use of thermodynamic data tables and charts. Three hours of lecture / two hours of laboratory. Prerequisite: MEC* 104. Corequisite: MAT* 187.

MEC* 250 Strength of Materials **3 S.H.**
Covers the principles involved in the analysis of stresses in machine and structural elements under various types of loads. Analyzes these stresses in thin-walled cylinders and spheres, riveted and welded joints, beams, columns, cast sections, couplings, and shafts. The laboratory portion investigates material strength and the intelligent use of existing references. In the lab, students work in small groups to conduct their own measurements of the mechanical properties of common materials. Uses microcomputers to analyze experimental data and prepare final reports. Two hours of lecture / three hours of laboratory. Prerequisite: MEC* 104. Corequisite: MAT* 175.

MEC* 265 Materials Science**4 S.H.**

Introduces the internal structure of metallic, polymeric, and ceramic solids and their physical, mechanical, electrical, and chemical properties in engineering applications. The laboratory portion investigates the reactions that take place in materials subjected to a variety of tests. Introduces students to ASTM standards and procedures. Three hours of lecture / two hours of laboratory. Corequisite: PHY* 121.

MEC* 271 Fluid Mechanics**4 S.H.**

Introduces fluid mechanics, basic fluid characteristics, hydrostatics, pressure, center of pressure, and pressure measuring devices. Demonstrates the application of the general energy equation to fluid in motion. Also demonstrates the modifications necessary to analyze the effect of viscosity and friction of fluid flow, pressure heads, and pumping calculation. Three hours of lecture / two hours of laboratory. Prerequisite: MEC* 104. Corequisite: MAT* 187.

MEC* 283 Design of Machines**4 S.H.**

Presents the concept of Mechanical Design, from concept to specifications. Covers the procedures, data, and techniques necessary to design such mechanical components as gears, springs, bearings, belt and chain drives, clutches, brakes, fasteners, shafts, and screws. Emphasizes the use of computers in the design process. The laboratory portion combines all previous study dealing with machine elements. Uses computer-aided design solutions and requires a design project. This project includes an analysis of individual components, assembly, and detail drawings. Three hours of lecture / three hours of laboratory. Prerequisites: MEC* 250, MEC* 265, and CAD* 108.

MEC* 296 Mechanical Engineering Internship**2 S.H.**

Provides Mechanical Engineering Technology students with a semester of external related career experiences designed to enhance the student's preparedness for an intended career with business, industry or government agency. A comprehensive written report on the Internship practice is required. To be eligible for the internship, a student must be of good academic standing and have program advisor approval.

MUSIC**MUS* 101 Music History and Appreciation I (AD)****3 S.H.**

Surveys the biographies of composers and styles of music literature from the Medieval, Renaissance, Baroque, Classical, and Romantic eras. Emphasizes historical fact, listening skills, and music vocabulary for enjoyment. Requires attendance at one concert.

MUS* 115 Music Theory I**3 S.H.**

Develops skills in music reading, ear training, and melodic and harmonic analysis. Analyzes composition through counting, reading, and pitch notation in the classroom and laboratory.

MUS* 116 Music Theory II**3 S.H.**

Builds on skills learned in Music 115. Includes analysis of form, structure, and compositional techniques. Prerequisite: MUS* 115 or instructor's permission.

MUS* 126 20th Century/Modern Music**3 S.H.**

Surveys twentieth century composers, their musical styles, and influences from the Post-Romantics. Includes such composers as Schoenberg, Stravinsky, Bartok, and Copland. Discusses some contemporary compositions in jazz, rock, country, and new musical styles. Suggested prerequisite: MUS* 101.

MUS* 141 Guitar I (AD)**3 S.H.**

A guitar course for students with no previous guitar experience. Students must provide their own instruments and supplies.

MUS* 142 Guitar II (Course has not been offered in two years)**3 S.H.**

A second-level guitar course for students with minimal experience playing guitar and reading G clef. Students must provide their own instruments and supplies.

MUS* 143 Guitar III (Course has not been offered in two years)**3 S.H.**

A third-level guitar course for students with experience playing guitar and reading G clef. Students must provide their own instruments and supplies.

MUS* 144 Guitar IV (Course has not been offered in two years)**3 S.H.**

A fourth-level guitar course for students with knowledge of advanced guitar technique and bass technique. Students must provide their own instruments and supplies.

MUS* 150 Class Piano I (AD) **3 S.H.**
Provides a foundation in piano performance and musicianship for beginning students. The comprehension of rhythmic, melodic, and chordal music notation is achieved by playing various styles of piano music in at least two keys.

MUS* 151 Class Piano II **3 S.H.**
Continues the study of simple compositions in duple, triple, and quadruple meters and in reading the F and G clefs. Includes minor scales and arpeggios, two octave major scales and arpeggios, simple compositions, and studies in technique.

MUS* 171 Chorus I **3 S.H.**

MUS* 172 Chorus II (Course has not been offered in the past two years) **3 S.H.**

MUS* 272 Chorus III **3 S.H.**

MUS* 273 Chorus IV (Course has not been offered in the past two years) **3 S.H.**

Presents choral material, both sacred and secular, accompanied, and a cappella. Surveys choral works from Renaissance madrigals to contemporary American music. May be taken four semesters for credit and is open to all students.

MUS* 218 Electronic Music Composition/Audio Technology I **3 S.H.**
(Course has not been offered in two years)

Develops a working understanding of computer music software. Includes such compositional techniques and strategies as meter applications in duple, triple, and quadruple meters; melodic structure and organization; harmonic movement in tonality; and an introduction to the social and artistic purposes of musical composition.

MUS* 219 Electronic Music Composition/Audio Technology II **3 S.H.**
(Course has not been offered in two years)

Applies music notation software using electronic piano input. Explores standard tonal composing techniques for both popular and artistic music alongside prominent atonal twentieth century techniques. Introduces the use of text (lyrics) and notation for orchestra. Examines current procedures for copyrighting and publishing musical compositions.

MUS* 243 Orchestra: Baroque Era **3 S.H.**
(Course has not been offered in two years)

Focuses on music of the Baroque Period (approx. c. 1600-1750). This period closely followed the Renaissance, flourished under the leadership of J.S. Bach whose works will be studied in depth. Most music was written for the church, opera, or the Court with the emergence of a homophonic style. Through use of recordings, videos, and live concerts, students will become familiar with Baroque Period music such as Handel's Messiah, Bach's Brandenburg Concerto and Vivaldi's Four Seasons. Instrumentalists will engage in actual performance of music of the Baroque period. Non-instrumentalists will participate through observation, laboratory, and field experiences. Non-instrumentalists may choose the course with the permission of the instructor. You do not need to play an instrument to take this course.

MUS* 244 Orchestra: Classical Era **3 S.H.**
(Course has not been offered in two years)

Focuses on music of the Classical Period which is often called the Viennese period. In this period the symphony and string quartet flourished through major contributions by Haydn, Mozart, and Beethoven. Through the use of recordings and videos, students will become familiar with such works as Mozart's Don Giovanni, Haydn's London Symphonies, Beethoven's Symphony No. 3 "Eroica" and many others. Instrumentalists will engage in actual performance of music of the Classical Period. Non-instrumentalists will participate through observation, laboratory, and field experiences. Non-instrumentalists may choose the course with the permission of the instructor. You do not need to play an instrument to take this course.

MUS* 245 Orchestra: Romantic Era **3 S.H.**
(Course has not been offered in two years)

Under the pens of Brahms, Berlioz, Mahler and others, the symphony no longer followed four strict movements. Through the use of recordings, videos, and live concerts, students will become familiar with such works as Piano Concerto No. 1 by Chopin, Symphonic Fantastique by Berlioz, and Faust Symphony by Liszt. Instrumentalists will engage in actual performance of music of the Romantic period. Non-instrumentalists will participate through observation, laboratory, and field experiences. Non-instrumentalists may choose the course with the permission of the instructor. You do not need to play an instrument to take this course.

MUS* 246 Orchestra: Modern Era **3 S.H.**

(Course has not been offered in two years)

This course focuses on the music of the Modern Period in the 20th Century. Impressionist music by Ravel and Debussy, 12 tone compositions by Schoenberg, electronic music by Stockhausen, show tunes by Gershwin, Rodgers, and other American composers, nationalistic music by Shostakovich, film music by Prokofiev and Williams, American jazz and "Tin Pan Alley" tunes are some of the areas to be considered. Through the use of recordings, video, and live concerts, students will become familiar with Barber's Adagio for Strings, Gershwin's Rhapsody in Blue, and Stravinsky's Firebird Suite as well as many others. Instrumentalists will engage in actual performance of music of the Modern Period. Non-instrumentalists will participate through observation, laboratory, and field experiences. Non-instrumentalists may choose the course with the permission of the instructor. You do not need to play an instrument to take this course.

MUS* 250 Class Piano III **3 S.H.**

(Course has not been offered in two years)

Introduces piano repertoire of such composers as Bach, Clementi, Mozart, and Beethoven at the early intermediate level, focusing on technique, interpretation, and structural aspects of the sonata form in Classical piano music. Emphasizes such technical studies as easy Pischna and Hanon, all major and minor scales and arpeggios in four octaves, and the standard cadence chord progression with inversions in all keys.

MUS* 251 Class Piano IV **3 S.H.**

(Course has not been offered in two years)

Continues the study of piano repertoire by Baroque and Classical masters. Introduces Romantic piano works by Beethoven, Chopin, Liszt, Shubert, and Schumann and contemporary and impressionistic works by such composers as Debussy and Bartok. Explores compositional aspects of such longer Romantic works as the Ballade or Scherzo, examining the technical difficulties of their performance. Piano IV continues the study of piano technique with Pischna and Hanon as well as practicing all major and minor scales and arpeggios in four octaves, in parallel thirds and sixths, and the standard cadence chord progression.

MUS* 299 Special Topics in Music **1-6 S.H.**

NUCLEAR MEDICINE TECHNOLOGY

NMT* 101 Introduction to Nuclear Medicine **3 S.H.**

Introduces the student to the healthcare environment and the field of nuclear medicine technology. Topics covered include: patient care, medical ethics, medicolegal issues, radiation safety and protection and an introduction to radiopharmacy. Prerequisites: Acceptance into the Nuclear Medicine Technology Program and full attendance during freshman orientation. Corequisite: NMT* 111.

NMT* 102 Nuclear Medicine Procedures I **3 S.H.**

Introduces basic nuclear medicine technology procedures. Prerequisites: Acceptance into the Nuclear Medicine Technology Program and full attendance during freshman orientation. Corequisites: NMT* 111.

NMT* 111 Clinical Practicum I **1 S.H.**

Introduces the clinical setting and general nuclear medicine areas through simulated labs and hands-on training. Prerequisite: Acceptance into the Nuclear Medicine Technology Program and full attendance during freshman orientation. Corequisite: NMT* 101 and NMT* 102.

NMT* 112 Clinical Practicum II **1 S.H.**

Emphasizes, through simulated labs and hands-on training, the handling and positioning of patients and the application of clinical nuclear medicine procedures. Prerequisites: NMT* 113 for NMT* AS degree students only. Corequisite: NMT* 121.

NMT* 113 Clinical Internship I **0.5 S.H.**

Students attend clinical training Monday through Friday, eight hours per day. Prerequisite: NMT* 111.

NMT* 121 Physics in Nuclear Medicine **3 S.H.**

Introduces the physics of nuclear medicine as a framework for the principles behind nuclear composition, energy concepts, and units of radioactive decay. Stresses radiation level calculation and understanding the process by which radiation interacts with matter. Prerequisites: PHY* 111. Corequisite: NMT* 112.

NMT* 126 Clinical Internship II **3 S.H.**

Students attend clinical training Monday through Friday, eight hours per day, minimum of 400 clinical hours. Prerequisite: NMT* 112.

NMT* 201 Nuclear Medicine Procedures II**3 S.H.**

Covers nuclear medicine procedures, emphasizing anatomy, physiology, and pathology as they pertain to oncology, infection/inflammation, skeletal, cardiovascular and respiratory systems. Students perform Internet searches and present oral reports on findings pertinent to current nuclear medicine procedures. Students also present a case study that relates to one of the organ systems being studied. Prerequisites: NMT* 102. Corequisite: NMT* 112.

NMT* 202 Nuclear Medicine Instrumentation**3 S.H.**

Examines the processes of converting radiation interactions into electrical signals for counting and measuring by nuclear probes and cameras. Assesses and investigates Nuclear Medicine camera systems and their physical imaging characteristics in hands-on experiments. Corequisite: NMT* 211.

NMT* 203 Radiopharmacy**3 S.H.**

Covers the pharmacological basis, preparation, and quality control of radiopharmaceuticals used in nuclear medicine. Prerequisite: CHE* 111. Corequisite: NMT* 211.

NMT* 211 Clinical Practicum III**2 S.H.**

Continues to develop competencies gained in Clinical Practicum II. Through simulated labs and hands-on training, students will achieve competency in advanced imaging procedures and equipment use. Prerequisites: NMT* 121 and NMT* 126. Corequisite: NMT* 203.

NMT 212 Clinical Practicum IV**2 S.H.**

Introduces a sophisticated use of nuclear medicine technology and instrumentation. Students build on competencies achieved in Clinical Practica I, II, and III. Prerequisite: NMT* 216. Corequisite: NMT* 221.

NMT* 216 Clinical Internship III**0.5 S.H.**

Students attend clinical training Monday through Friday, eight hours per day. Prerequisite: NMT* 211.

NMT* 221 Nuclear Medicine Procedures III**3 S.H.**

Builds on the procedures and organ systems presented in Nuclear Medicine Procedures I, including pharmacological intervention, the central nervous, endocrine, gastrointestinal, genitourinary systems and radionuclide therapies. Students will examine case images and present findings pertinent to nuclear medicine procedures. Prerequisite: NMT* 201. Corequisite: NMT* 212.

NMT* 222 Introduction to Computers and Nuclear Medicine Applications**3 S.H.**

Introduces the use of computers in Nuclear Medicine Technology. Concentrates on computer hardware and acquisition, data analysis, and interpretation of computer studies in Nuclear Medicine. Prerequisite: NMT* 202. Corequisite: NMT* 212.

NMT 223* Nuclear Medicine Seminar (CALT)**3 S.H.**

Reviews quality control procedures, state and federal regulations, radiation safety, radiobiology, marketing and management of nuclear medicine technology departments, and career and professional development skills. Corequisite: NMT* 212.

NURSING**NUR* 101 Introduction to Nursing Practice****8 S.H.**

Focuses on concepts basic to nursing practice. Emphasis is placed on application of the nursing process, communication, and skill acquisition. Clinical and laboratory experiences offer opportunities to integrate theoretical principles and demonstrate caring and competence in beginning professional role development. (8 credits: 60 theory, 180 hours clinical)

NUR* 102 Family Health Nursing**8 S.H.**

Focuses on providing holistic nursing care to families across the lifespan. Students focus on issues that effect the family, including childbearing, childrearing, geriatric care and intermediate health care needs. In addition, the course includes, selective adult, child and adolescent psychiatric disorders. Students will have clinical rotations that provide experience caring for the childbearing family as well as caring for medical surgical clients across the lifespan. (8 credits: 60 hours theory, 180 hours clinical)

NUR* 103 Pharmacology for Families Across the Life Span**1 S.H.**

Focuses on the principles of pharmacology and its nursing application to family health care needs and selective psychiatric disorders. (1 credit: 15 hours theory)

NUR* 132 LPN to RN Transition I**2 S.H.**

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. Pre-requisite Courses: Connecticut Community Colleges BIO*211: Anatomy & Physiology I, BIO*212: Anatomy & Physiology II, BIO*235: Microbiology, ENG*101: English Composition, PSY 111: General Psychology, PSY*201: Life Span, SOC* 101: Principles of Sociology; Charter Oak State College NUR 190: LPN to RN Articulation Bridge Course.

NUR* 201 Nursing Care of Individuals and Families I (CALT)**9 S.H.**

Focuses on holistic care of individuals and families with a variety of health care needs across the lifespan with a variety of health care needs. The needs of the 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 and 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. During the semester, the student is increasingly challenged in the clinical area with more complex client assignments. (9 credits: 60 hours theory, 225 hours clinical). Prerequisites: NUR* 102, NUR* 103, PSY* 201, SOC* 101. Corequisites: NUR* 202, ENG* 102.

NUR* 202 Pharmacology for Individuals and Families with Intermediate Health Care Needs 1 S.H.

Focuses on the principles of pharmacology and its nursing application to individuals and families with intermediate health care needs and selective psychiatric disorders. (1 credit: 15 hours theory)

NUR* 203 Nursing Care of Individuals and Families II**8 S.H.**

Focuses on providing holistic care to individuals, families, and groups with complex health care needs. It examines the effect of multi-system alterations and selected mental health disorders. The student will incorporate critical thinking, caring behaviors, professionalism and communications skills when providing care. Clinical experiences are provided in acute care, mental health care and community settings with an emphasis on managing multiple clients. (8 credits: 45 hours theory, 225 hours clinical)

NUR* 204 Pharmacology for Individuals, Families, and Groups with Complex Health Care Needs**1 S.H.**

Focuses on the principles of pharmacology and its nursing application to individuals and families with intermediate health care needs and selective psychiatric disorders. (1 credit: 15 hours theory)

NUR* 205 Nursing Management and Trends**2 S.H.**

Focuses on the transition into the profession and the nurse's role in contemporary nursing practice. Professionalism is emphasized. Students will explore management principles and delegation of client care. Students will participate in critical thinking to evaluate current trends and contemporary issues in nursing. (2 credits: 30 hours theory)

NUTRITION AND DIETETICS

NTR* 101 Introduction to Dietetics**3 S.H.**

Discusses career and educational pathways for dietetic technicians and registered dietitians. Introduces students to the health care team concept and describes the roles of health professionals. Covers ethical issues in health care and nutrition.

NTR* 102 Nutrition I: Principles of Nutrition**3 S.H.**

Investigates the basic nutrients and current guidelines for healthy food preparation and selection.

NTR* 103 Nutrition Therapy I**3 S.H.**

Applies the principles of nutrition assessment, menu planning, and the nutrition care process to meet the needs of individuals and groups with a variety of nutritional requirements. Prerequisite: A grade of C or better in NTR* 102.

NTR* 104 Life Cycle Nutrition**3 S.H.**

Covers the study of the life cycle. Introduces the study of therapeutic nutrition. Provides a background for understanding the physiology relating to specific medical disorders so that the student may design and explain common therapeutic diets to clients. The study of medical terminology is introduced. Prerequisite: A grade of C or better in BIO* 115 and NTR* 102.

NTR* 105 Food Management Systems**3 S.H.**

Introduces principles of institutional food service management. Includes fundamentals of menu planning, recipe standardization, purchasing, production, equipment, quality control, marketing, and use of computers in food service. Prerequisite: MAT* 095 or higher.

NTR 106 Culinary Nutrition**2 S.H.**

Provides a basic understanding of nutrition and its relationship to health. Provides an overview of nutrients, digestion, absorption, and metabolism. This course will also provide information on good food sources of the nutrients, purchasing, cooking methods and menu planning.

NTR* 120 Foods**3 S.H.**

Presents and applies basic food preparation, basic food science, cooking equipment, menu planning, developing and testing quality food products. Prerequisite: MAT* 095 or higher. (*HSP* 101 may be substituted for NTR* 120 with permission from the Program Coordinator.*)

NTR* 201 Community Nutrition Education**3 S.H.**

Provides a community approach to nutrition education. Students will develop skills in presenting nutrition education programs to small groups or classes. Prerequisites: NTR* 103 and COM* 171.

NTR* 202 Nutrition Therapy II**3 S.H.**

Focuses on the physiological principles and nutritional needs of more complex conditions. Increases medical terminology vocabulary. Prerequisite: A grade of C or better in NTR* 103 and NTR* 104.

NTR* 205 Management in Dietetics**3 S.H.**

Focuses on the management principles utilized in nutrition and dietetics including the overview of management; tools for managers; human resources management; managing financial resources and new directions in management. Prerequisite: NTR* 105.

NTR* 210 Nutrition Internship I**3 S.H.**

Develops basic skills and competence in the delivery of food and nutrition care. Students spend two days a week in supervised practice, rotating through a variety of food service, clinical, and community nutrition programs. The internship occurs in the summer. Prerequisites: NTR* 103, NTR* 120, and HSP* 109.

NTR* 212 Nutrition Internship II**3 S.H.**

Refines student skills in the delivery of food and nutrition services in a variety of settings, including acute and long-term care, institutional food service, and community nutrition programs. Students spend two days per week at arranged field sites. Prerequisite: NTR* 210.

NTR* 214 Nutrition Internship III (CALT)**3 S.H.**

Refines student skills in the delivery of food and nutrition services in a variety of settings, including acute and long-term care, institutional food service, and community nutrition programs. Students spend approximately 100 hours in arranged field sites. Prerequisites: NTR* 210 and NTR* 212.

PHILOSOPHY**PHL* 101 Introduction to Philosophy (CALT)****3 S.H.**

Introduces philosophical thinking and life perspectives. Applies philosophical analysis and criticism to moral, social, and religious issues. Prerequisite: Eligibility for ENG* 101.

PHL* 111 Ethics (CALT)**3 S.H.**

Provides an overview of the formation and expression of Western philosophical thinking. Explores some of the views and concepts supporting ethical values in the contemporary social, political, and economic environment. Considers ethical problems as they relate to current ideologies. Pre-requisite: ENG* 101 or higher.

PHL* 131 Logic**3 S.H.**

Introduces inductive and deductive reasoning and various modes of argumentation. Focuses on both traditional and modern logic.

PHYSICS**PHY* 101 Physics for Today (SK)****3 S.H.**

Emphasizes conceptual understanding of the underlying principles of physics as applied to topics of current interest. Uses arithmetic and simple algebra. Includes classroom demonstrations.

PHY* 109 Fundamentals of Applied Physics (SR & SK)**4 S.H.**

Introduces the principles of physics, including measurement, motion, forces in one dimension, concurrent forces, work and energy, simple machines (including mechanical advantage), rotational motion, and nonconcurrent forces. Three hours of lecture / two hours of laboratory. Prerequisite: MAT* 115 or higher.

PHY* 111 Physics for the Life Sciences (SR & SK) **4 S.H.**
Applies the principles of physics to health science. Basic algebra and trigonometry are used. Three hours of lecture / three hours of laboratory. Prerequisite: MAT* 115 or 137 or 137S or higher or placement in MAT* 142 or higher.

PHY* 121 General Physics I (SR & SK) **4 S.H.**
Presents the basic principles of physics using algebra and trigonometry. Studies translational and rotational motion, static equilibrium, work and energy, mechanical vibrations and waves, and the thermal properties of matter. Three hours of lecture/three hours of laboratory. Prerequisite: MAT 137 or 137S or higher.

PHY* 122 General Physics II (SR & SK) **4 S.H.**
A continuation of PHY* 121. Studies electricity, magnetism, light, relativity, and atomic and nuclear physics. Three hours of lecture / three hours of laboratory. Prerequisite: PHY* 121.

PHY* 221 Calculus-Based Physics I (SR & SK) **4 S.H.**
Presents principles of physics. Uses elementary concepts of calculus. Addresses classical dynamics, rigid-body motion, harmonic motion, wave motion, acoustics, thermal properties of matter. Three hours of lecture / three hours of laboratory. Prerequisite: Secondary school physics, MAT* 254.

PHY 222* Calculus-Based Physics II (SR & SK) **4 S.H.**
Studies thermodynamics, electric and magnetic fields, electromagnetic waves, basic geometrical optics, wave properties of light, and quantum effects; introduces atomic physics, wave mechanics and special relativity. Three hours of lecture / three hours of laboratory. Prerequisite: PHY* 221. Prerequisite: MAT* 256.

POLITICAL SCIENCE

POL* 102 Introduction to Comparative Politics **3 S.H.**
Examines comparative politics as a traditional and significant component of the political science curriculum. Illustrates the diversity and similarity that exist among the world's major foreign powers and the emerging "Third World" nations.

POL* 111 American Government **3 S.H.**
Studies the structure and framework of American government and the interrelationship of politics on the national, state, and local levels. Emphasizes the political, legislative, judicial, and administrative processes of government. Analyzes the basic philosophy of American government and political beliefs.

POL* 208 American Public Policy **3 S.H.**
Investigates the policy-making process in the United States. Using a functional approach, analyzes public policy in a sequential manner, from the initial identification of a problem to its solution, including the assessment and appropriate revision or termination of policy. Examines case studies and analyzes current policy issues.

POL* 250 Theory of Human Rights (Course has not been offered in two years) **3 S.H.**
Provides the theoretical grounding, both historical and conceptual, for further studies about the role of human rights in contemporary politics and social life. Explores the historical development and present discussions of the concept of human rights as well as its role in a variety of contemporary issues within domestic and international politics and culture.

POL* 280 New Haven and The Problem of Change in the American City **3 S.H.**
Offered in cooperation with Yale University. Examines the rapid transformation of New Haven and other American cities over the past century as case studies of urban change and urban policy. Themes include the planning and policy implications of the emigration of higher income populations from the inner city.

POL* 295 Political Science Internship (Course has not been offered in the past two years) **3-12 S.H.**
Assigns interns to individual legislators to assist in analyzing legislative proposals, monitoring committee and floor action, tracking, drafting news releases and speeches, research, constituent casework, etc. The internship includes orientation sessions, seminars, and written papers.

POL* 299 Independent Study in Political Science **1-12 S.H.**

PSYCHOLOGY

PSY* 104 Psychology of Adjustment

3 S.H.

(Course has not been offered in the past two years)

Includes both theoretical and practical learning through the laboratory method of “experience, analysis, and projection.” Provides a clear and basic framework for analyzing individual and group behavior. Groups of students define their own terms for existence and then use these terms to gain further insight and knowledge about themselves, their future roles, and their learning goals. Establishes the need for skill development in human relations and presents foundations for developing those skills.

PSY* 105 Group Dynamics

3 S.H.

Examines current theories about and research into group process and leadership. Examines students’ own performance as group members and leaders. Combines didactic and experiential learning situations. Pre/co-requisite: PSY* 111 or instructor’s permission.

PSY* 111 General Psychology I (SP)

3 S.H.

Provides the student with a general introduction to fundamental topics and areas in the field of psychology. Students will learn about the history of psychology, various scientific methods for research, neurological underpinnings of behavior and mental processes, and diverse subjects relevant to the field, including sensation and perception, learning, memory, and social psychology. Prerequisite: Eligibility for ENG* 101.

PSY* 112 General Psychology II

3 S.H.

A survey course that is a continuation of PSY* 111. Topics include health psychology, human development, psychological disorders, states of consciousness and motivation and emotion. This is the second part of a two-semester sequence and it is recommended that students take both semesters (PSY* 111 and 112). Pre-requisite: PSY* 111. Co-requisite: ENG* 101.

PSY* 122 Child Growth and Development

3 S.H.

Covers child development, from birth through adolescence, emphasizing the preschool child. Considers the physical, emotional, mental, and social characteristics of the child at various stages of development. Views life stages in terms of a variety of theoretical frameworks: Freud, Erickson, Piaget, and representative behaviorists. Requires each student to do twenty hours of fieldwork and observation in a preschool or approved alternative setting. Prerequisite: eligible for ENG* 063 or higher.

PSY* 201 Life Span Development

3 S.H.

Provides an overview of the physical, cognitive, and psychosocial development of humans from birth to death. There is an emphasis on distinct periods such as the development of fetus; infancy; early, middle and late childhood; adolescence; and the phases of adulthood. It views life stages from a variety of theoretical frameworks; Freud, Erikson, Piaget, Vygotsky, and other representative behaviorists. It also looks at cultural and historical influences on development.

PSY* 209 Psychology of Aging

3 S.H.

Presents aging within a psychological framework. Students will develop an understanding of normal, healthy aging and the emotional problems of the aged. Emphasizes the emotional and behavioral aspects of aging and effective techniques for communicating with the elderly.

PSY* 210 Death and Dying

3 S.H.

Examines death and dying with regard to the individual, the family, the caretakers, and society at large.

PSY* 233 Theories, Methods and Practice of Counseling and Therapy

3 S.H.

Addresses the basic tenets of existing behavioral, cognitive and humanistic counseling theories. Case studies will be used to address how primary goals, strategies and anticipated outcomes are developed during the therapeutic process of counseling individuals with diagnosed mental health problems. Prerequisites: A grade of C or better in both PSY* 111, PSY* 245.

PSY* 234 Expressive Methods in Counseling

3 S.H.

Focuses on the therapeutic techniques used in counseling including: the overview of expressive counseling strategies used with child and adolescent populations; visual art techniques; music and movement methods; creative drawing and writing methods. Includes experiential practice with various therapeutic techniques through in-class demonstrations, small group exercises and dyadic role play. Prerequisite: PSY* 111.

PSY* 240 Social Psychology**3 S.H.**

Considers basic principles of human behavior encompassing the social milieu. Focuses on socialization, communication, and intergroup relations as they are influenced by individual personality factors and social structures. Analyzes values and group organization and function in determining methods used in social psychology.

PSY* 245 Abnormal Psychology**3 S.H.**

Surveys a broad range of psychological disorders, their symptoms, etiology, and treatments. An introduction to the historical treatment of persons with mental illnesses provides context to understand current trends. Students will investigate major diagnostic categories including mood disorders, anxiety disorders, psychotic disorders including schizophrenia, personality disorders, and other diagnostic categories. Prerequisites: ENG* 101 and PSY* 111 (both with a C or better).

PSY* 247 Industrial and Organizational Psychology**3 S.H.**

(Course has not been offered in the past two years)

Applies psychological principles to business and industry. Includes discussion of job evaluation and analysis, management relations, and individual and group relations.

PSY* 257 Statistics for the Behavioral Sciences**3 S.H.**

Provides the foundational understanding in descriptive and inferential statistics necessary to reading research articles and to conducting research in the behavioral sciences. Students will learn about the management and analysis of behavioral sciences data using SPSS. Will cover measures of central tendency and variability, frequency distribution, probability, and hypothesis testing. Particular emphasis will be applied to the computation of t-tests, correlation, ANOVA, and non-parametric measures including chi-square. A statistical or scientific calculator will be required. Course will be held in a computer lab. Pre-requisites: ENG* 101, MAT* 122 or MAT* 137 or Higher (or higher), PSY* 111 (all with a C or better).

PSY* 258 Behavior Modification**3 S.H.**

Examines and implements basic psychological learning principles. Includes the academic and psychological aspects of learning, including the basic stimulus-response application of behavior modification.

PSY* 299 Independent Study**3 S.H.**

QUALITY CONTROL**QUA* 114 Principles of Quality Control****3 S.H.**

Introduces the terminology, principles, and procedures of quality control and quality assurance. Investigates specific techniques and procedures used in quality control and quality assurance. Topics include new design control, incoming material control, product control, and special process studies.

RADIATION THERAPY**RDT* 101 Introduction to Radiation Therapy I****3 S.H.**

Introduces the field of Radiation Therapy. Focuses on quality assurance, basic dosimetry concepts, radiographic anatomy, clinical objectives, and medical and technical terminology. Also includes the fundamentals of radiography, film construction, processing, and x-ray generation. Other topics include professional ethics, patient care procedures, pharmacology, nutrition, and oncology. Prerequisite: Admission to the program and full attendance during freshman orientation. Corequisite: RDT* 111.

RDT* 102 Radiation Therapy II**3 S.H.**

Builds on basic dosimetry skills. Includes dose calculations for external beam, radiation therapy equipment, practical treatment planning, and brachytherapy applications. Prerequisite: RDT* 101 and RST* 200. Corequisite: RDT* 112 and RST* 213.

RDT* 111 Clinical Practicum I**1 S.H.**

Introduces the clinical setting and the basics of radiation therapy. Through supervised direct patient care and phantom work, provides experience in technical and patient care skills. Students must spend two days a week in the affiliate hospital, mastering clinical competency levels one and two. Prerequisite: Admission to the program and full attendance during freshman orientation. Corequisite: RDT* 101.

RDT* 112 Clinical Practicum II**1 S.H.**

Through supervised direct patient care and phantom work, students master patient care skill levels one and two. Students are evaluated on basic set-up competencies. Students must spend two days a week in the affiliate hospital, mastering technical competency levels one, two, and three. Prerequisite: RDT* 111. Corequisite: RDT* 102 and RST* 213.

RDT* 113 Clinical Internship I	1 S.H.
Students attend clinical training Monday through Friday, eight hours per day. Prerequisite: RDT* 111 and RDT* 101.	
RDT* 126 Clinical Internship II (CALT)	3 S.H.
Students attend clinical training Monday through Friday, eight hours per day. Prerequisite: RDT* 112.	
RDT* 201 Radiation Oncology I	3 S.H.
Reviews anatomy and physiology, methods of diagnosis, etiology, epidemiology, staging, aim of radiation therapy, dose, and fractionation principles of specific tumor sites. Prerequisites: BIO* 211 and BIO* 212. Corequisites: RDT* 202, RDT* 205 and RDT* 211.	
RDT* 202 Radiation Therapy III	3 S.H.
Addresses radiographic and cross-sectional anatomy, simulator techniques, and treatment planning through lectures and laboratory experiments. All setup techniques work in conjunction with diseases covered in Oncology I. Prerequisite: RDT* 102. Corequisites: RDT* 211, RDT* 201 and RDT* 205.	
RDT* 203 Radiation Oncology II	3 S.H.
Builds on skills learned in RDT* 201. Reviews anatomy and physiology, methods of diagnosis, etiology, epidemiology, staging, aim of radiation therapy, dose, and fractionation principles of specific tumor sites. Prerequisite: RDT* 201. Corequisites: RDT* 204 and RDT* 212, RDT* 222, RDT* 223, RDT* 224.	
RDT* 204 Radiation Therapy IV	3 S.H.
Builds on skills learned in RDT* 202, focusing on radiographic anatomy, cross-sectional anatomy, simulator techniques, and treatment planning through lectures and laboratory experiments. Addresses all diseases introduced in Oncology II. Prerequisites: RDT* 202 and RDT* 205. Corequisites: RDT* 203, RDT* 212, RDT* 222, RDT* 223, RDT* 224.	
RDT* 205 Dosimetry and Computer Assisted Treatment Planning	3 S.H.
Introduces computers, principles of operation, and application theory. Emphasizes basic and advanced concepts of clinical dosimetry and treatment planning by computers through laboratory experience. Includes such advanced dosimetry concepts as dose calculations, construction of tissue compensators and custom molds, dose measurement, brachytherapy, sources applicators, implant methods, and dose verification. Prerequisites: RDT* 102, RDT* 112, and PHY* 111. Corequisites: RDT* 201, RDT* 202 and RDT* 211.	
RDT* 211 Clinical Practicum III	2 S.H.
Through supervised direct patient care and phantom work, the student refines patient care skill levels one and two. Evaluation of mandatory set-up competencies continues. Students must spend three days a week in the affiliate hospital, refining technical competency levels one, two, and three. Prerequisite: RDT* 112. Corequisites: RDT* 201, RDT* 202 and RDT* 205.	
RDT* 212 Clinical Practicum IV	2 S.H.
Through supervised direct patient care and phantom work, students must demonstrate proficiency in mandatory clinical objectives and competencies and dosimetry. Students are expected to complete all required set-up competencies. Prerequisites: RDT* 205 and RDT* 211. Corequisite: RDT* 203, RDT* 204, RDT* 222, RDT* 223 and RDT* 224.	
RDT* 218 Clinical Internship III	1 S.H.
Students attend clinical training Monday through Friday, eight hours per day. Prerequisite: RDT* 211.	
RDT* 222 Radiobiology and Protection	3 S.H.
Introduces biological responses to radiation and factors influencing radiation effects, tissue sensitivity, tissue tolerance, and clinical applications. Also includes a study of radiation protection principles, units of measurement, surveys, methods of protection, brachytherapy, personnel monitoring, and regulatory agencies and regulations. Prerequisite: RDT* 211. Corequisite: RDT* 203, RDT* 204, RDT* 212, RDT* 223 and RDT* 224.	
RDT* 223 Radiation Physics II	3 S.H.
Builds on skills learned in RST* 213. Emphasizes x-ray production, x-ray properties, gamma rays, electrons, and their respective interactions with matter. Other topics include the measurement of radiation, radioactivity, and particulate radiation. Presents brachytherapy, including radioactive sources, exposure rate, implant dosimetry, and remote afterloading units. Prerequisite: RST* 213. Corequisite: RDT* 203, RDT* 204, RDT* 212, RDT* 222 and RDT* 224.	

RDT* 224 Radiation Therapy Senior Seminar**2 S.H.**

A one semester course characterized by the active role expected of students in the field of research. This will include investigation, preparation, presentation, and discussion of clinical areas. The course requires a working knowledge of radiation therapy. It prepares senior students for successful entry into the field of radiation therapy and improves their critical thinking skills. Theoretical and practical studies are integrated through research and application. Students are also required to define, compare, analyze and assess medical practice in health care delivery. Prerequisites: RDT* 201, RDT* 202, RDT* 211. Corequisites: RDT* 203, RDT* 204, RDT* 212, RDT 222, RDT* 223.

RADIOGRAPHY

RAD* 104 Introduction to Radiography**3 S.H.**

Introduces factors influencing radiographic quality and patient protection, basic equipment components and elementary principles of exposure. Through classroom lectures and laboratory study, the student will gain the basic knowledge to function as an entry level student radiographer in the clinical practicum and be able to advance in a progressive manner. Prerequisite: Acceptance into the Radiography Program. Co-requisites: RAD*105, RAD*193.

RAD* 105 Radiographic Anatomy and Procedures I**3 S.H.**

Emphasizes task objectives and competencies in general radiographic procedures and related anatomy, medical terminology, film critiquing, and selection of technical factors. Prerequisites: Acceptance into the Radiography Program. Corequisites: RAD*104, RAD* 193.

RAD* 116 Physics in Radiography**3 S.H.**

Introduces students to basic radiation physics and its effects on image quality, parameters of radiographic technique and equipment operation and maintenance. The purpose, components and practical application of radiographic imaging systems are presented and discussed. The x-ray circuit, concepts of x-ray production, emission, and interaction with matter will be covered. Pre-requisites: MAT* 172, RAD* 104. Corequisite: RAD*204.

RAD* 187 Clinical Internship I**.5 S.H.**

First year students attend clinical training Monday through Friday, 7 hours per day. Prerequisites: RAD* 104, RAD* 105, and RAD* 193.

RAD* 188 Clinical Internship II**4 S.H.**

Students attend clinical training Monday through Friday, 7 hours per day. Students will work on Level II task objectives while mastering Level I objectives. A total of 360 clinical hours will be performed over 12 weeks. Prerequisites: RAD* 116, RAD* 194, and RAD* 204.

RAD* 193 Clinical Practicum I**2 S.H.**

Introduces the clinical setting and general radiographic areas of Diagnostic Imaging through supervised clinical training. Students must spend two days per week in the clinical setting working on Level I training objectives and mastering basic competencies. A total of 180 clinical hours will be performed over 15 weeks. Pre-requisite: Acceptance into the Radiography Program. Corequisites: RAD*104, RAD*105.

RAD* 194 Clinical Practicum II**2 S.H.**

Provides the student with the opportunity to master Level I task objectives and competencies. Students must spend two days a week in the clinical setting working on Level I training objectives and mastering basic competencies. A total of 180 clinical hours will be performed over 15 weeks. Pre-requisites: RAD*104, RAD*105, RAD* 193. Corequisite: RAD*204

RAD* 196 Radiographic Anatomy and Procedures III**3 S.H.**

Through classroom lecture and clinical practice, students will learn advanced imaging procedures including contrast studies, age specific considerations and cranial imaging. In addition, students will be responsible for presenting a professional presentation based on research of a specific disease and related case study. Prerequisites: RAD* 187, RAD* 188, and RAD* 204. Corequisite: RAD* 291.

RAD* 203 Principles of Radiographic Exposure I**3 S.H.**

Focuses on radiographic definition, contrast, and quality. Addresses digital exposure factors, exposure table composition, special exposure techniques, and general radiographic techniques. Prerequisites: RAD* 116. Corequisites: RAD* 196 and RAD* 291.

RAD* 204 Radiographic Anatomy and Procedures II**3 S.H.**

Introduces more complex radiographic procedures, anatomy, equipment, and medical terminology, while refining image critique and patient care skills. Prerequisites: RAD* 105, RAD* 193. Corequisites: RAD* 194 and RAD* 116.

RAD* 205 Computers in Medical Imaging: Advanced Practice**3 S.H.**

Covers the functionality of computers in medical imaging. Topics include the history of computers and their use in medical imaging, digital imaging, conventional and digital fluoroscopy, the digital image including artifacts and QC, and PACS. The clinical practicum will continue to reinforce this didactic content. Prerequisites: RAD* 196, RAD* 203, and RAD* 291. Corequisites: RAD* 206, RAD* 218, and RAD* 292.

RAD* 206 Quality Assurance (CALT)**3 S.H.**

Students will gain a working knowledge of factors that influence the production of high quality radiographic images. The course will provide knowledge necessary to evaluate radiographic systems to maintain consistency in the production of quality images. Quality assurance concepts and the factors controlling radiographic quality will be presented and discussed through lecture and lab practice. State and Federal regulations will be reviewed. Prerequisites: RAD* 196, RAD* 203, and RAD* 291. Corequisites: RAD* 205 and RAD* 292.

RAD* 215 Radiographic Pathology**3 S.H.**

Provides an overview of different pathologic conditions that are demonstrated through diagnostic imaging. Lecture material will include the cause and treatment of disease as well as imaging factors and variations relating to the disease. Prerequisites: RAD* 188, RAD* 204. Corequisites: RAD* 292, RAD* 203.

RAD* 218 Senior Seminar**3 S.H.**

This course is the culmination of all radiographic anatomy and procedures courses in the Radiography Program. The course requires a good working knowledge of Radiography. Through critical thinking exercises, research projects and in class presentations, the course prepares students for successful entry into the field of radiography. More advanced imaging modalities including but not limited to CT, MRI, 3D Imaging, Interventional and Cardiovascular imaging are introduced at this time. Prerequisites: RAD* 196, RAD* 203, and RAD* 291. Corequisite: RAD* 292.

RAD* 222 Radiobiology and Protection**3 S.H.**

Covers the fundamental principles of radiobiology; molecular and cellular response, both direct and indirect; interaction with matter; protection in radiology; and health physics. Presents sensitivity and cell recovery with the OER, LET, and RBE. Focuses on exposure and dose in radiology, the workplace, and in the general population. Federal, state and local regulations and guidelines will be identified and their roles defined.

Prerequisites: RAD* 116, RAD* 203, and RAD* 291. Corequisites: RAD* 203 and RAD* 291.

RAD* 286 Clinical Internship III**.5 S.H.**

Students attend clinical training Monday through Friday, 7 hours per day. Prerequisites: RAD* 196, RAD* 203, and RAD* 291.

RAD* 291 Clinical Practicum III**3 S.H.**

Enables the completion of Level II task objectives and allows the students to continue to refine the skills learned up to this point. More sophisticated imaging procedures and equipment are introduced and performed through supervised training. Students must spend three days per week in the clinical setting working on Level II training objectives. A total of 270 clinical hours will be performed over 15 weeks. Prerequisites: RAD* 188 and RAD* 204. Corequisites: RAD* 196 and RAD* 203.

RAD* 292 Clinical Practicum IV**3 S.H.**

Focuses on level III task objectives and continues to introduce more sophisticated imaging procedures and equipment use through observation and supervised training. Students must spend three days per week in the clinical setting working on level III training objectives. A total of 270 clinical hours will be performed over 15 weeks. Pre-requisites: RAD*196 and RAD*291. Co-requisites: RAD*205, RAD*206, RAD*218.

RADIOLOGIC TECHNOLOGY

RST* 110 Introduction to Radiology**3 S.H.**

Introduces the field of radiology and develops the necessary skills of a health care professional. Emphasizes radiography, nuclear medicine, and radiation therapy by incorporating lectures with field site visits. Addresses the role of an allied health professional in the hospital and community setting. Explores career potentials and alternatives. Includes clinical site visits.

RST 200 Cross Sectional Anatomy**3 S.H.**

This course emphasizes the physical relationships of anatomic structures to one another. It develops a three-dimensional understanding of anatomy. Computer-generated sectional images will be used to display the relational anatomy in multiple planes, such as axial (transverse), sagittal, and coronal. It emphasizes the body's natural boundaries and spaces. Bony structures and soft tissue will be investigated. To demonstrate the application of this knowledge, supplemental information on pathology will be included. Prerequisites: BIO*211 and BIO* 212.

RST* 213 Radiation Physics**3 S.H.**

Introduces the concept of radiation, its sources, and its interaction with matter. Introduces electricity and magnetism, the x-ray machine, circuits, components, and practical application. Prerequisites: RAD*104 or RDT*101, RDT*111, and PHY* 111, MAT* 115. Corequisites: RAD* 204 or RDT*102.

RST* 217 Clinical Pathology**3 S.H.**

Investigates the various aspects of human disease. Covers diseases pertinent to radiology. Topics include general concepts of disease; inflammation and repair; neoplasms; and diseases of the immune, cardiovascular, respiratory, digestive, urinary, endocrine, musculoskeletal, reproductive, and nervous systems. A brief review of anatomy and physiology precedes lectures on specific pathological processes. Also presents the medical terminology of pathology. Prerequisites: BIO* 211 and BIO* 212.

RST* 250 Methods of Teaching in a Clinical Setting**3 S.H.**

Intended for clinical instructors/supervisors in secondary and post secondary allied health occupational programs. Presents the skills needed to teach, supervise, and evaluate students/trainees in the clinical setting. Focuses on the role of clinical instructors/supervisors, developing measurable objectives, assessing learning styles, and using appropriate evaluation instruments. Upon completion of this course, participants will be granted a certificate of attendance and can apply for CEUs to their respective accrediting agencies. Prerequisite: Program director's permission.

RAILROAD ENGINEERING TECHNOLOGY

RET* 101 History of Railroading**3 S.H.**

Covers the history and traditions of railroading and the industry's role in the North American economic development. Corequisite: ENG* 043/073 or placement into ENG* 063 or higher.

RET* 110 Careers in the Railroad**2 S.H.**

Provides information about technical careers in railroading to assist students to choose suitable career paths. Requires field trips that will demonstrate the relationships among technical work groups in day to day railroad operations. Pre- or corequisite: RET* 101.

RET* 120 Railroad Rules, Regulations, Standards & Practices**3 S.H.**

Provides participants with an overall understanding of governmental rules, regulations, standards, and practices as they apply to a railroad operation. Study includes a review of Code of Federal Regulations, Part 49, Railroad Standards and Practices Manual (AREMA) and various railroads' book of rules. Pre- or corequisite: RET* 101.

RET* 220 Safety in the Railroad Workplace**3 S.H.**

Covers the principles and policies governing railroad safe work practices. Upon successful completion of this course, the student should be able to describe safety policies, including the application of team processes, use and care of personal protective equipment, lockout/tag out procedures, and hearing conservations. Pre-requisite: RET* 120.

RET* 230 Reading and Interpreting Railroad Diagrams**2 S.H.**

Provides participants with an overall understanding of how to read and interpret railroad electrical diagrams. Course topics will include a review and discussion of the following: ladder diagrams, contractors, motor starters, motors, programmable logic controller, railroad electrical symbols. Pre or co-requisite: EET* 110.

RET* 240 Railroad Pneumatics and Hydraulic Controls**4 S.H.**

Introduces participants to the basic components, controls and functions of railroad pneumatics and hydraulics. Course topics include standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures and switching and control devices. Three hours lecture/two hours lab. Pre or corequisite: MEC* 234.

RET* 242 Railroad HVAC Systems**4 S.H.**

Provides participants with an overview of HVAC systems used on railcars. Basic hand and specialty tools and equipment will be covered as well as basic laws of heat transfer, thermo-dynamics and heat load. The study of the basic refrigeration cycle and its components will be introduced. In addition, students can qualify to obtain certification on the proper handling of refrigerants to include their effects on the environment. Three hours lecture/two hours lab. Pre-requisite: MEC* 234.

RET* 244 Railroad Electro-mechanical Troubleshooting**4 S.H.**

Introduces participants to the tools, methods and techniques for troubleshooting electro-mechanical problems in machines and rolling stock equipment (trains). Three hours lecture/two hours lab. Pre-requisite: MEC* 234.

RET* 250 Railroad Signaling & Switching**4 S.H.**

Provides participants a basic understanding of a railroad signal system, including track circuits and applicable federal laws/guidelines. Three hours lecture/two hours lab. Pre-requisite: EET* 110 and RET* 120.

RET* 252 Railroad Communications**4 S.H.**

Introduces participants to a basic understanding of railroad communications. Course topics include frequency and pulse modulation, AM and FM transmitters and receivers, electromagnetic radiation, digital data communication, and applicable laws and regulations. Three hours lecture/two hours lab. Pre-requisite: RET* 250.

RET* 254 Railroad Maintenance, Troubleshooting and Repair**4 S.H.**

Introduces students to the tools, methods and techniques for troubleshooting signal and communication problems in switch machines and communication equipment. Three hours lecture/two hours lab. Pre-requisite: MEC* 234.

RET* 270 Practicum in Passenger Railroad Technology**1 S.H.**

Provides students with experience in electric traction motors, catenary wire systems, signaling and track repair using APTA (American Public Transportation Association) standards. Students will complete at least 50 hours of supervised practicum. Pre-requisite: RET* 220.

ET* 271 Practicum in Passenger Railroad Technology**1 S.H.**

Provides students with experience in diesel-electric engines, freight railroading logistics and intermodal services, signaling upgrades and track renewal using laser-guided tamping equipment all in accordance with Northeast Operating Rules Advisory Committee (NORAC) standards. Students will also regularly inspect and help with ongoing maintenance of the rail line. Pre-requisite: RET* 220.

READING (See English)

REAL ESTATE

BRE* 202 Real Estate Principles (Course has not been offered in two years)**4 S.H.**

Required for real estate salesperson pre-licensing in the State of Connecticut. Provides comprehensive introduction to the real estate business and those interested in learning about this exciting industry. Will introduce brokerage, listing agreements, buyer/seller representation, ownership of real estate, legal descriptions, taxes, contracts, liens, transfer or title and more. Students intending to sit for the State of Connecticut Real Estate Exam must attend and pass this course with a grade of 70 or better. Course material is extensive and students are expected to complete considerable reading assignments.

SCIENCE

SCI* 102 Perspectives in Natural Science (Course has not been offered in two years)**3 S.H.***

Surveys physics, chemistry, astronomy, and biology. Intended for students with a limited science background. *Credit does not count toward meeting degree requirements.

SIGN LANGUAGE

SGN* 101 Sign Language I**3 S.H.**

An introduction to American Sign Language, the language used by the Deaf Community in the United States. Covers the fundamental structure of ASL grammar, introduces basic information about the deaf community and deaf culture. This is the first course in a four-course sequence that satisfies the foreign language requirement of the associate in arts degree.

SGN* 102 Sign Language II**3 S.H.**

Builds on skills learned in American Sign Language I. Reinforces the fundamentals of ASL grammar and presents more information about the deaf community and deaf culture. Prerequisite: SGN* 101.

SOCIOLOGY

SOC* 101 Principles of Sociology (SP)**3 S.H.**

Introduces the philosophy, methods, and problems of sociology. Emphasizes culture, society, and how social arrangements infringe upon personality and group behavior. Prerequisite: Eligibility for ENG* 101.

SOC* 106 Technology and Society**3 S.H.**

Focuses on the role of various art forms (e.g., painting, sculpture, and architecture) in pre-industrial and post-industrial societies. Develops students' visual, verbal, and cultural literacy.

SOC* 109 Society of Women**3 S.H.**

Analyzes the socialization of women into the female sex role. Examines the traditionally female roles in marriage and the family. Explores economic and political roles women have played in American society during the colonial and frontier periods, slavery, the abolitionist movements, the trade union movement, and the women's rights and suffrage movements. Concludes with a study of current women's groups and their different ideologies, concerns, and platforms for change.

SOC* 111 Child, Family, School and Community**3 S.H.**

An in-depth look at the child, family, and the relationship between the function of school, community, and the family. Will review the socialization process and the development of the child as a social being. An understanding of the young child and age-appropriate guidance for the young child will be examined. This course will address the role culture, diversity, and theory partner with families and community. An understanding of how to effectively communicate with families will also be explored. An understanding of how society and education partner in the socialization process for children from birth to age eight.

SOC* 114 Sociology of Aging**3 S.H.**

Studies aging people and the world around them. Examines elderly peoples' social lives, societal roles, personal adjustments, dependence, independence, and how society responds to their needs. A field project may be assigned in which students participate in a community activity involving the elderly.

SOC* 115 Nutrition and Aging (course has not been offered in the past two years)**3 S.H.**

Explores the nutritional needs and special problems during various stages of the life cycle from infancy to old age. Includes presentations by professionals and others involved in the preparation and planning of nutritional programs; major emphasis is placed on the nutritional needs of the elderly and counseling techniques appropriate to elderly people.

SOC* 131 Social and Environmental Issues**3 S.H.**

Introduces the philosophy, methods, and problems of environmental sociology. Emphasizes sustainability, the affects of social arrangements on humanity's interaction with the environment, population control, endangered species, and ethics.

SOC* 176 Methods of Social Research and Change**3 S.H.**

Introduces change-agent skills and the skills needed for conducting elementary research projects. Students must design and execute a change project and carry out a number of field projects. Develops data gathering skills, skills in designing data gathering tools, and methods of strategy evaluation.

SOC* 201 Contemporary Social Issues**3 S.H.**

Presents a detailed analysis of major social problems in American society. Problems including population, ecology, poverty, race and ethnic relations, urbanization, the role of the media, criminal activity, aging, health, and housing will be evaluated. Emphasis is on American society but some international issues and situations will be examined. Community awareness and involvement will be stressed as students evaluate local issues as well.

SOC* 210 Sociology of the Family (was SOC* 104)**3 S.H.**

Presents a sociological evaluation of modern marriages and family life. Topics include preparation for marriage, dating, courtship, marriage-career analysis, married life, parent-child relations, and sexual adjustments.

SOC* 220 Racial & Ethnic Diversity**3 S.H.**

A study of the history and culture of various racial and ethnic groups in the United States including an investigation into institutionalized racism, prejudice, discrimination, and other issues of diversity related to power and privilege.

SOC* 224 Caribbean Culture and Society**3 S.H.**

Presents an overview of the economic systems, history, and social-cultural dimensions of the countries of the Caribbean Basin, focusing on the island-nations of the Greater Antilles (Cuba, Dominican Republic, Haiti, Jamaica, and Puerto Rico). Also examines the ever-evolving relationship between the United States and the Caribbean, including issues of migration.

SOC* 230 The City (Course has not been offered in two years)**3 S.H.**

Analyzes social stratification in large urban centers, emphasizing sociological, economic, and racial differences. Considers the role of conflict as it affects group relations. Examines social disorder and the law, the problems of life in the ghetto, the role of power, racial ideology, and social changes. Considers the future of large cities and population movements.

SPANISH

At the beginning of the semester, a placement examination is given to students enrolled in SPA* 101 and SPA* 102. Advanced language instruction beyond the courses listed below is available through Independent Study by arrangement with the instructor.

SPA* 097 Basic Spanish I

3 S.H. *

Familiarizes students with key aspects of the Spanish language. Facilitates a solid foundation and builds confidence for higher level courses. Developed for those who have not had experience with the language and responds to the changing academic, occupational, technological, and cultural needs of a diverse population. Daily conversations and use of the language will be the key for success in this course. (*Credit does not count toward degree requirements*).

SPA* 101 Elementary Spanish I

3 S.H.

Presents the essentials of grammar and reading with practice in speaking and writing basic Spanish. Develops conversational skills. Open to students with little or no experience in Spanish. (*Native speakers of Spanish are strongly discouraged from registering for this course.*) Placement in this course is determined by score from the placement exam.

SPA* 102 Elementary Spanish II

3 S.H.

Emphasizes aural comprehension, basic conversation, and pronunciation. Emphasizes principles of grammar to improve reading, writing, and speaking. Prerequisite: SPA* 101 or appropriate score on placement test.

SPA* 201 Intermediate Spanish I

3 S.H.

Introduces conversational Spanish through a presentation of Spanish civilization. Emphasizes written reports, readings of Spanish prose, and lectures on important literary figures. Prerequisite: SPA* 102 or appropriate score on placement test.

SPA* 202 Intermediate Spanish II

3 S.H.

Emphasizes advanced composition and conversation. Discusses readings and reports on literary, artistic, and political figures of Spanish and Spanish-American civilization. Prerequisites: SPA* 201 or sufficient score on the placement test.

SPA* 221 Introduction to Puerto Rican Studies I

3 S.H.

Surveys Puerto Rican literature: prose, drama, poetry, and essays from colonial times to the present. Prerequisite: ENG* 101, SPA* 202 or instructor recommendation.

SPA* 222 Introduction to Puerto Rican Studies II

3 S.H.

Examines the process and consequences of cross-cultural contact and cultural changes in Puerto Rican society. Discusses historical, political, and sociological issues central to an understanding of the Puerto Rican culture. Prerequisite: ENG* 101, SPA* 202 or instructor recommendation.

SPA* 232 Spanish Composition for Professionals

3 S.H.

This computer/classroom online course provides students with the basic knowledge to communicate appropriately in written Spanish by learning to write clearly, simply, and effectively and by using technology to develop writing ability. Prerequisites: SPA* 202 or equivalent or sufficient score on the placement test.

THEATER

THR* 110 Acting I

3 S.H.

Introduces the art, practice, theories, and history of acting. Both experienced and non-actors will benefit from this course through the study of the history of acting, practical workshops, in-class performances as well as reading, research, and writing about the discipline of acting.

WATER MANAGEMENT / WASTEWATER

WMT* 101 Water Treatment and Distribution

6 S.H.

Covers water sources and uses, storage, pipes, pumps, motors, water quality parameters and standards, and treatment techniques, including iron and manganese removal, pretreatment, coagulation/flocculation, sedimentation, filtration, fluoridation, corrosion control, disinfection, sludge handling, and plant maintenance. Presents the mathematics necessary for operators of water treatment and distribution plants.

WMT* 102 Special Topics in Water Treatment**3 S.H.**

Covers required and recommended drinking water standards; proper sample collection; preservation and storage techniques; proper physical, chemical, and microbiological analytical techniques; and the relationship between analyses, unit process control, and the quality of treated water in the distribution system.

WMT* 103 Special Topics in Water Distribution**3 S.H.**

Covers applied hydraulics; water tanks; mains; valves; services; hydrants and meters; cross connections; pumps; instrumentation; maps and drawings; and local, state, and national laws. Devotes special attention to operational and maintenance procedures designed to protect the quality of water in the system.

WMT* 105 Water Utility Management**3 S.H.**

Introduces areas of Water Utility Management, including organization, planning, regulations, finances, operations, infrastructure maintenance, safety, and public relations. Considers contemporary technological developments, management problems, and challenges that public water utilities must cope with.

WWT* 110 Wastewater I**3 S.H.**

Introduces the safe and effective operation and maintenance of wastewater treatment plants. Presents basic operational aspects, including grit removal, sedimentation and flotation trickling filters, biological contractors, activated sludge, waste treatment ponds, and disinfection and chlorination. Upon completion, students will be prepared to take the State of Connecticut Wastewater Class I Operator Examination. Corequisites: MAT* 175 and WMT* 112.

WWT* 112 Wastewater II**3 S.H.**

Applies the theoretical principles of wastewater treatment to specific examples of wastewater treatment practice. Students will visit municipal wastewater treatment facilities and prepare a comprehensive study of a wastewater treatment plant. Corequisites: MAT* 175 and WWT* 110.

WWT* 114 Wastewater III**3 S.H.**

Further investigates the safe and effective operation and maintenance of wastewater treatment facilities, emphasizing large, conventional treatment plants. Topics include activated sludge, sludge digestion and handling, effluent disposal, plant maintenance, safety and housekeeping, and laboratory procedures. Uses computers in the laboratory for data acquisition and analysis. Upon completion, students will be prepared to take the State of Connecticut Wastewater Class II Operator Examination. Corequisite: WWT* 116.

WWT* 116 Wastewater IV**3 S.H.**

Students participate in an internship at an operating wastewater treatment facility. A comprehensive report of the project is required for successful completion of the course. Prerequisites: MAT* 175, WWT* 110, and WWT* 112. Corequisites: MAT* 175 and WWT* 110.

WWT* 120 Municipal & Industrial Wastewater**3 S.H.**

Provides students with an overview of the terminology, methods, modes of operation and equipment used to protect our waters by providing treatment for municipal and industrial waste waters. Prerequisite: permission of instructor.

WWT* 210 Advanced Wastewater I**3 S.H.**

Addresses advanced wastewater topics, including odor control using chemical and biological treatments, scrubbers, and activated carbon absorption. Investigates both the treatment of activated sludge in municipal and industrial waste and the processes used for the management of residual solids. Addresses the use of chemicals and filtration systems in the removal of solids from effluents. Prerequisites: WWT* 110, WWT* 112, WWT* 114, and WWT* 116, or state of Connecticut Wastewater Certification Levels I and II.

WWT* 212 Advanced Wastewater II**3 S.H.**

Builds on the knowledge gained in Advanced Wastewater I. Covers phosphorus removal using biological systems, lime precipitation, and alum flocculation. Investigates the use of biological systems, ammonia stripping, chlorination, and water hyacinth cultures for nitrogen removal. Additional topics include enhanced biological-nutrient control, wastewater reclamation, and wastewater instrumentation. Prerequisite: WWT* 210.

WWT* 216 Environmental Law**3 S.H.**

Investigates federal, state, and municipal environmental regulations of wastewater management. Presents actual case studies for analysis. Prerequisites: WWT* 110, WWT* 112, WWT* 114, and WWT* 116, or state of Connecticut Wastewater Certification Levels I and II.

DIRECTORY

ADMINISTRATION AND COLLEGE SERVICES

Academic Advising	285-2124
Admissions - Applications	285-2010
Athletic Office	285-2213
Alumni Association	285-2617
Bookstore	865-5614
Business Office	285-2009
Cafeteria	285-2248
Career Services/Job Placement	285-2110
Center for Educational Services	285-2217
CT College of Technology	285-2452
Counseling & Student Success Center	285-2090
Dean of Academic Affairs	285-2077
Dean of Administrative Affairs	285-2021
Dean of Development & Community Partnerships	285-2296
Dean of Workforce Development & Continuing Education	285-2408
Dean of Student Affairs	285-2210
Distance Learning	285-2570
Early Learning Center (Child Care)	285-2131
Educational Technologies	285-2221
Evening Administrator	285-2300
Facilities and Events Management	285-2223
Financial Aid	285-2030
Foreign Student Information	285-2010
Gateway Community College Foundation, Inc.	285-2617
Gender Equity Center	285-2151
General Information	285-2000
Human Resources	285-2537
Immunization	285-2275
Information Technology	285-2040
Institutional Advancement	285-2296
Institutional Research	285-2415
Library & Learning Commons	285-2057
Mail Room	285-2239
Payment of College Charges	285-2009
President	285-2061

Public Affairs and Marketing	285-2065
Purchasing	285-2524
Registrar	285-2020
Security	285-2246
Student Development and Services Associate	285-2033
Student Activities and Leadership	285-2209
Student Development	285-2318
Student Disability Services	285-2314
Student Government	285-2242
Transcripts	285-2020
Tutoring	285-2217
Veterans Affairs	285-2110
Voice Mail System	285-2200
Weather Information	285-2049
Website	GatewayCT.edu
Workforce Development & Continuing Education	285-2300
Writing Center	285-2245

ACADEMIC DEPARTMENTS CHAIRS AND DIRECTORS

Allied Health / Nursing	Sheila Solernou	285-2393
Arts / Humanities	Chester Schnepf	285-2205
Automotive	Daniel Fuller	285-2370
Business	Richard Rees	285-2178
College Advancement Studies	Michelle Breaker	285-2119
Engineering Technologies	Eric Flynn (Interim)	285-2371
Mathematics / Science	Robert Tremblay	rtremblay@gatewayct.edu
Social Science	Jonah Cohen	285-2289

PROGRAM COORDINATORS/CONTACTS

Art	Nicholas Halko	285-2241
Automotive (General Motors ASEP)	Daniel Fuller	285-2370
Automotive (Honda PACT)	Scott McFarland	285-2405
Aviation Maintenance	Eric Flynn	285-2371
Biomedical Engineering	Thomas McGrath	285-2378
Business	Richard Rees	285-2178
Business Office Technology	Sheri Valentin	285-2169
Clean Water Management	Eric Flynn (Interim)	285-2371
Computer Engineering	Eric Flynn (Interim)	285-2371
Computer Science	Stacy Walker	285-2462
CT College of Technology	Susan Spencer	285-2452
Culinary Arts	Vacant	
Diagnostic Medical Sonography	Cara Case	285-2383
Drug and Alcohol Recovery Counselor	Cher Shannon	285-2321
Early Childhood Education	Carmelita Valencia-Daye	285-2172
Early Childhood Special Education	Carmelita Valencia-Daye	285-2172
Electrical Engineering	Eric Flynn	285-2371
English	Alex Boateng	285-2284
Entrepreneurial Studies	Rose Bednarz-Luglio	285-2198
Environmental Science & Toxicology	Robert Tremblay or John Mullane	285-2185 or 285-2095
Food Service Management	Stephen Fries	285-2175
General Studies	Jonah Cohen	285-2289
Hotel Management	Stephen Fries	285-2175
Hospitality Management	Stephen Fries	285-2175
Human Services	Kim Shea	285-2116
Liberal Arts & Sciences	Lauren Doninger	285-2601
Manufacturing Engineering	Eric Flynn (Interim)	285-2371
Mathematics	Saverio Perugini	285-2195
Mechanical Engineering	Cyprian Ukah	285-2375
Nuclear Medicine	Annmarie Alcala	285-2381
Nursing	Sheila Solernou	285-2393
Nutrition and Dietetics	Marcia Doran	285-2390
Online/Distance Learning	Lynn Roller	285-2295
Radiation Therapy	Gina Finn	285-2392
Radiography	Julie Austin	285-2382
Railroad Engineering Technology	Richard Halkyard (Interim)	285-2311
Retail Management/Fashion Merchandising	Rose Bednarz-Luglio	285-2198
Science	Robert Tremblay	285-2185
Solar Technology	Eric Flynn (Interim)	285-2371
Water Management	Eric Flynn (Interim)	285-2371

PERSONNEL

Faculty – Full-Time

Norman Abell (1988) Professor Biology, D.P.M., Ohio College of Podiatric Medicine; B.S. Villanova University.

Ann Marie Alcalá (2017) Assistant Professor, Program Coordinator of Nuclear Med Technology. M.B.A., M.S., Albertus Magnus College, B.A., Albertus Magnus College, A.A., Gateway Community College

Julie Austin (2000) R.T. (R) (M) Professor, Program Coordinator Radiography. M.A., B.S., Albertus Magnus College; A.S., Gateway Community Technical College.

Catherine Babbitt (2015) Assistant Professor Developmental English. M.S., Southern CT State University; B.S., Charter Oak State College; A.S., Gateway Community College.

Vincent Baldassano (2004) Professor Art. M.F.A. University of Oregon; B.A. Wagner College

Claudia Bedoya-Rose (2000) Professor English as a Second Language and Spanish. Ed.M., Harvard Graduate School of Education; B.S., Albertus Magnus College; A.S., Albertus Magnus College.

Tracy Blanford (2004) Professor Nursing. M.S.N. University of Connecticut; B.S.N. Central Connecticut State University; A.S. Quinnipiac College.

Alex Boateng (2004) Associate Professor English, Academic Coordinator. M.A. Yale University; B.A. University of Ghana.

Michelle Breaker (2010) Associate Professor, Department Chair, College Advancement Studies (CAS) Math. M.S., B.S., Purdue University.

James Wesley Brogan (1993) Professor English. Ph.D., M.A., Indiana University; B.A., University of Iowa.

Mark S. Bruno (1994) Professor General Science. M.S., University of Connecticut; B.S., Southern Connecticut State University.

James Brunt (2010) Associate Professor English. M.A., B.A., Southern Connecticut State University.

Carol Brutza (1988) Professor Peace & Conflict Studies, English as a Second Language. M.A., New York University; B.A., University of Arizona; Certificate, Peace Education, Columbia University.

Mary M. Burns (1974) Professor English. M.A.T., Brown University; B.A., University of Connecticut; A.A., South Central Community College; Certificate, E.S.L., University College, Dublin, Ireland.

John Callaghan (2006) Associate Professor Mathematics. M.A. Central Connecticut State University; B.S., Trinity College.

Veronica Cardinale (2010) Associate Professor Radiation Therapy Technology, Clinical Coordinator. B.S. Albertus Magnus College; A.S. South Central Community College.

Cara Case (2013) Associate Professor, Program Coordinator Diagnostic Medical Sonography, Program Coordinator. B.S. University of Hartford; A.S., Middlesex Community College; RDMS, RDCS

Susan Chenard (2006) Professor English, Program Coordinator ESL Program. M.A. Mills College; B.A. Central Connecticut State University.

B. Christine Cherry (2017) Full Time Lecturer Electrical Engineering Technology. M.S., B.S. Southern Connecticut State University

Jonah Cohen (2004) Professor Sociology, Department Chair Social Sciences. M.S., Central Connecticut State University; B.A., Trinity College.

Robert Costanzo (1994) Professor Automotive Technology. B.S., Central Connecticut State University.

Tara Daly (2016) Assistant Professor Nursing. M.S.N., Sacred Heart University.

Susan DeBarge (2008) Associate Professor Nursing. M.S. Nursing-Midwifery, Yale University; B.S., Nursing, UMASS, Boston.

Todd Degree (2007) Professor, Program Coordinator Exercise Science & Wellness. MBA Georgia State University; B.S., Sports Management, UMASS Amherst.

Megan DeLivron (2010) Associate Professor-Chemistry. Ph.D., Biochemistry, University of Connecticut; B.S., Biochemistry, University of New England.

Lauren Doninger (2001), Professor of Psychology, Program Coordinator Liberal Arts & Science. Ed.D. Johnson & Wales University; M.A., Central Connecticut State University; B.S., Nasson College; LADC, LPC

Marcia Swan Doran (1998) Professor Nutrition and Dietetics, Program Coordinator. M.S., University of Bridgeport
B.S., University of Connecticut; R.D.N.

Franz T. Douskey (1977) Professor English. M.A., B.A., Goddard College.

Andrea Eckels (2016) Full Time Lecturer Nursing. M.S.N., Benedictine University.

Thomas M. Fahy (2004) Professor Psychology. Psy.D. University of Hartford; M.A., B.A. Tufts University.

Gina Finn (1999) Professor Radiation Therapy, Program Coordinator, M.A. Albertus Magnus College; B.S. Central
Michigan University; A.S., Gateway Community College; R.T. (T).

Eric Flynn (2010) Instructor Electrical Engineering Technology, Interim Department Chair Engineering Technology. Ph.D.,
Electrical Engineering, University of Connecticut; M.S., B.S., University of Connecticut; A.S., Gateway Community College.

Stephen Fries (1986) Professor Accounting, Program Coordinator Hospitality Management Program. M.S., University
of Massachusetts Amherst; B.S., State University of New York at Albany.

Germaine C. Frosolone (2001) Professor Nuclear Medicine, Clinical Coordinator. B.A., Western Connecticut State
University; A.S., South Central Community College; C.N.M.T., R.T.N.

Daniel Fuller (2011) Professor Automotive, Department Chair. B.S. Excelsior College; A.A.S., Greater New Haven
State Technical College.

Howard Fuller* (2015) Full Time Lecturer Automotive. Certificate Vocational Technical Institute; Central Connecticut
State University.

Renee Gaines (2008) Associate Professor English. EdM Suny Buffalo; B.A. Brooklyn College.

Beata Gebuza (2008) Professor Math. M.S. Southern CT State University; B.S. Quinnipiac University; A.S. Gateway
Community College.

Claudia Haekel (2004) Professor Nursing. M.S. University of Connecticut; B.S. Southern Connecticut State University.

Nicholas F. Halko (1994) Professor, Program Coordinator Studio Arts. M.F.A., Hartford Art School/University of
Hartford; B.A. Southern Connecticut State University; B.A., A.S. Charter Oak College.

Richard B. Halkyard, Jr. (1999) Professor, Interim Program Coordinator Railroad Engineering Program. M.P.A., University
of New Haven; B.S., Quinnipiac College; A.S. Quinnipiac College; A.S. Greater New Haven State Technical College.

Martha Hayes (1996) Professor English. M.A., B.A., Southern Connecticut State University; A.S., Housatonic
Community College.

Marilyn Jacobi (1994) Professor College Advancement Studies (CAS) Mathematics. M.S., University of Bridgeport;
B.A., SUNY College at Oneonta.

Raj Jain (1988) Professor Biology. Ph.D., Lucknow University (India); M.S., Rajasthan University; B.S., Delhi University.

Elizabeth H. Keefe (2012) Associate Professor, Academic Coordinator College Advancement Studies (CAS)
English. M.S./TESOL Certification, Southern Connecticut State University; M.A., Fairfield University; B.A., College
of the Holy Cross.

Karen L. Kessler (2002) Professor Nursing. M.S., University of Wisconsin–Madison; B.S.N., Hunter College; A.A.S.,
Kingsborough Community College.

Susan Levine (2007) Professor Nursing. M.S.N., University of Hartford; B.S.N., Central Connecticut
State University.

Lorraine Li (2004) Professor Economics. M.S. Columbia University; B.A. Columbia University.

Elaine Lickteig (2010) Associate Professor, Clinical Coordinator, Nutrition and Dietetics. M.S., University of Connecticut;
B.A. Michigan State University; R.D.N.

Michael Loteczka (1984) Professor Chemistry/Physics. M.S., B.S., University of Connecticut.

Rose Bednarz Luglio (1992) Professor Business, Program Coordinator Entrepreneurial Studies, Retail Management/
Fashion Merchandising. M.B.A., C.A.G.S., University of Bridgeport; M.A., B.S., University of Connecticut.

Mark D. Lynch (1998) Professor Chemistry. Ph.D., Iowa State University; M.S., Southeastern Massachusetts University;
B.S., Boston College.

Enrico Mastronardi (2008) Assistant Professor College Advancement Studies (CAS) English. M.A., Fairfield University;
B.A., Boston College.

Joseph Maynard (2000) Associate Professor History. M.A., Trinity College; B.A., Southern Connecticut State University;
A.S., South Central Community College.

Barbara McFarland (2006) Associate Professor Nursing. M.S.N., University of Hartford; B.S., Florida International University.

Scott McFarland (2008) Professor, Program Coordinator Automotive Technology. B.A., University of Massachusetts.

Thomas McGrath (1981) Professor, Program Coordinator Biomedical Engineering Technology. M.S., Biol.E., University of Connecticut; B.S.E.E., University of New Haven; A.S., Waterbury State Technical College.

Jessica Shoneck McLawhon (2016) Instructor Early Childhood Education. M.A., East Carolina University; B.S., East Carolina University.

Eric Meyers (2007) Associate Professor Biology. University of Bridgeport; B.A., University of Steubenville.

Victoria Morse (2004) Professor Foreign Languages. M.A., Middlebury Graduate School of French; B.A., Vassar College.

Kathleen H. Murphy (1996) Professor Business. M.S., B.S., University of New Haven; A.S., South Central Community College; A.R.R.T. (N), C.N.M.T.

Linda Nevins (2009) Associate Professor, Nursing. M.S.N., B.S., University of Connecticut.

Lauren O'Leary (2016) Instructor Developmental English. M.F.A., University of Nebraska; M.A., Wesleyan University; B.A., Quinnipiac University; TESOL Certification, University of California, San Diego.

Sam Osei (2016) Assistant Professor Nursing. M.S.N., University of Hartford.

Lynette Palm (2012) Assistant Professor Nursing. M.S.N., B.S.N., Rand Afrikaans University.

Daniel Palmquist (2014) Assistant Professor Culinary Arts. A.O.S., Manchester Community College; A.O.S. Johnson & Wales University.

Kititakone Panasy (2016) Full Time Lecturer Manufacturing Technology. M.S., Fairfield University.

Saverio Perugini (1993) Professor Mathematic, Academic Coordinator. Ed.D., Teachers College, Columbia University; M.S., B.S., Central Connecticut State University.

Louise A. Petroka (1994) Professor Biology. M.A., B.S., Central Connecticut State University.

Janice B. Potochney (1981) Professor Accounting. M.B.A., University of Bridgeport; B.S., University of Connecticut; C.M.A.

Deborah Raimondo (1998) Professor English as a Second Language. A.B., Gordon College; M. Div., Eastern Baptist Theological Seminary; M.A., Central Connecticut State University.

Myra Randall (2008) Assistant Professor Nursing. M.S.N., University of Hartford; B.S.N., Southern Connecticut State University.

Andrew V. Randi (1997) Professor Culinary Arts. M.S., B.S., University of New Haven; A.S., Johnson & Wales College.

Richard Rees (2002) Professor Business, Department Chair. M.C.S.E., Microsoft; M.B.A., University of New Haven; B.S. Central CT State University; A.S. Middlesex Community College.

Anthony Rish (2004) Assistant Professor Automotive. B.S., Central Connecticut State University; A.A.S., Gateway Community College.

Lynn Roller (2008) Professor Diagnostic Medical Sonography; Coordinator, Distance Learning. B.S., Charter Oak State College; St. Vincent's Medical Center; Certificate, Ultrasonography, Radiologic Technology.

Wilfredo Rosado (2010) Associate Professor Computer Science. MSCIT, Sacred Heart University

Eileen Russo (2010) Associate Professor DARC., M.A., St. Joseph College.

Teresa Russo (1992) Professor Psychology. M.S., Southern Connecticut State University; B.A., University of Connecticut; Licensed Professional Counselor (L.P.C.).

Heidi Rydene (1993) Professor Biology. M.S., Southern Connecticut State University; B.S., University of Rhode Island.

Rachel Schettenhelm (2004) Professor College Advancement Studies (CAS) Mathematics. M.S., University of Toledo; B.S., Michigan State University.

Chester H. Schnepf (1984) Professor and Department Chair Humanities. C.A.G.S., Trinity College; M.A., Hofstra University; B.F.A., New York Institute of Technology.

John H. Scott, III, Esq., (1998) Professor Business. J.D., Hofstra University School of Law; M.Div., Harvard University School of Divinity; B.A., SUNY at Stony Brook; A.A., Suffolk County Community College.

Colena Sesanker (2017) Instructor Philosophy. M.B.A., B.S., A.S.

Cheryl Shannon (2007) Professor, Program Coordinator Drug and Alcohol Recovery Counselor. M.H.S.A., Antioch New England Grad School; B.S., New Hampshire College; A.A.S., Norwalk Community College; LADC. (Licensed Alcohol and Drug Abuse Counselor)

Kim Shea (1994) Assistant Professor Human Services, Program Coordinator. M.S.W., B.S.W., Southern Connecticut State University.

Tinkang Shen (2006) Professor Mathematics. M.S., M.A., Ball State University; B.S. Shanghai University.

Kimberly Sorrentino (2015) Full Time Lecturer Diagnostic Medical Sonography. M.S., C.E.C.S, Health Care Improvement, Dartmouth College; B.A. Boston University; Certifications in Echocardiography and Diagnostic Medical Sonography; RDMS, RDCS, RVT.

Susan Spencer (2010) Associate Professor, Program Coordinator, College of Technology. M.S., B.S., Southern Connecticut State University.

Daniel Sullivan (1992) Professor Biology, Microbiology contact faculty. Ph.D., Walden University; M.P.H., University of Connecticut; M.S., Rutgers University; B.S., Ramapo College.

Amanda Sweeney (2012) Associate Professor Developmental Mathematics. M.S., B.S., University of Connecticut.

Richard Thayer (2016) Assistant Professor Radiography. M.Ed., Southern CT ST University; B.A., Albertus Magnus; A.S., Gateway Community College.

Robert E. Tremblay (1987) Professor Physics, Department Chair Math/Science. 6th year degree, M.S., B.S., Southern Connecticut State University.

Cyprian Ukah (1986) Professor Mechanical Engineering Technology, Program Coordinator. M.S.M.E., University of New Haven; B.S.M.E., Trinity College.

Carmelita Valencia-Daye (2004) Professor, Program Coordinator Early Childhood Education. M.Ed. University of North Carolina, Chapel Hill; B.S. University of Philippines.

Sheri Valentin (2010) Associate Professor, Program Coordinator Business Office Technology. M.S., University of New Haven; B.S., Sacred Heart University.

Jaye Viola (2007) Professor Radiography. B.S., Albertus Magnus College; A.S., Gateway Community College; R.T. (R).

Donald Walker (2012) Associate Professor Computer Science, Coordinator Distance Learning. M.B.A., Southern Connecticut State University; B.S., New York University.

Stacy Walker (2012) Associate Professor Computer Science, Program Coordinator. M.S., Colorado Technical University; M.S., B.S, Quinnipiac University; A.S., Gateway Community College.

Anne Williams (2007) Professor Business. PHD, Business Administration, Walden University; M.B.A. Temple University; B.A., University of Connecticut C.P.C.U., C.E.B.S.

Wesley Winterbottom, (1994) Professor Chemistry. M.B.A., University of Connecticut; M.S., Cornell University; B.S., Lehigh University.

Virginia A. Woolums (1986) Professor English. M.Ed., Temple University; M.S., Southern CT State University, English; B.A., Beaver College.

Faculty – Part-Time

Lawrence Baldino, M.S., M.B.A., Southern Connecticut State University and University of New Haven

Kathleen Bavelas, M.A.L.S, Wesleyan University

Patricia Bissell, M.Music 6th yr, Yale School of Music

Ronald Blevins, M.A., Fairfield University

Rosemary Boone, M.ME, University of Hartford

Lisa Breuninger-Tenny, Ph.D., Drexel University, PA, Graduate Medical Science

Diane Calello, M.S., Quinnipiac University

Vincent Carrano, M.S., 6th yr; Southern Connecticut State University

Toni D. Cates, M.A., Wesleyan University, Fairfield University

Dino Ciaburri, Ed.D., Nova Southeastern; M.A.L.S., Wesleyan University; B.S., Southern Connecticut State University; three Fellowships from Yale University; First Doctorate Hunter College, Yale University; UCONN.

Moshe Cohen, M.S., University of New Haven

Patricia Colandrea, M.B.A., Housatonic Community College, Fairfield University, University of New Haven

Victor Collazo, M.D., University of Puerto Rico

Daniel Corr, M.M., Cornish College, Yale University

Daniel J. Courcey, Jr. A.B., Providence College; M.A., Southern Connecticut State University; C.A.G.S., Fairfield University

Amy Davison, M.A., Central Connecticut State University, University of Connecticut
Michelle DellaCamera, M.S., Certificate, Albertus Magnus College, Southern Connecticut State University
Corinne Fisher, M.B.A., C.P.C.
Susan Foss, M.S., 6th yr; Southern Connecticut State University
Lois Fucci, M.A., University of Hartford, University of Pennsylvania, Fairfield University
Vincent Ginnetti, M.S., Southern Connecticut State University
Janet Greenberg, B.S., M.A., Central Connecticut State University, University of Hartford
Twanda Grey, M.S.W.; Southern Connecticut State University
Catherine Hall, M.A., Southern Connecticut State University, University of New Haven
Lawrence D. Hally, M.S., Southern Connecticut State University
Robert Hubbard, M.B.A.; University of Connecticut
Jean Incampo, M.A. Ed Specialist Degree; University of New Hampshire, Nova Southeastern University
Stanley Kapinos, M.A., Fairfield University, Southern Connecticut State University
Joan Krall, BME, M.S., University of Hartford, Central Connecticut State University
Susan Landino, B.S., M.S., Southern Connecticut State University
Bart Lombardi, M.S.E.E., MBA, Dartmouth College, NYU Graduate School of Business Administration
Raja Mani, Ph.D., University of Wyoming
Elizabeth McCormack, B.A., M.A., Southern Connecticut State University, University of Connecticut
Robert Mitchell, M.A.L.S.; Wesleyan University
Mary Moore, B.S., M.S., University of Bridgeport, Central Connecticut State University, University of Connecticut
Robert Novotny, B.A., M.A., Sacred Heart University, Western Connecticut State University
Thomas O'Neil, B.A., M.A., College of the Holy Cross, Southern Connecticut State University
Barbara Puglisi, M.A.; Southern Connecticut State University
Thomas Ragozzino, B.S., M.A., Fairfield University, Trinity College
Susan Reinhart, B.A., M.F.A., Vassar College, Tyler School of Art
Virginia Robey, B.A., University of Hawaii, M.S., Southern Connecticut State University
Margaret Rogers, M.B.A.; University of New Haven
Joan Ryan, M.A., Southern Connecticut State University
Anthony Solli, B.S., M.S., University of Notre Dame, Quinnipiac College, Southern Connecticut State University, Fairfield University, Yale University
Todd Solli, M.S., Quinnipiac University
Joseph A. Spadaro, B.S., M.S., Trinity College, University of New Haven
Jean Tencza, B.A., M.S., Southern Connecticut State University, University of New Haven
Kimberly Thomas, B.S., M.S., Ph.D., University of Rhode Island, St. Joseph College, Southern Connecticut State University
Susan Traudt, B.S., M.S., University of New Haven, Quinnipiac University
Paul Turtola, M.S., with certification; Southern Connecticut State University
Susan Weldon, B.S., MRP, University of Massachusetts, University of Vermont
Jeanne Whalen, B.S., M.S., Southern Connecticut State University
Narinder Whitehead, B.S., MPH, Southern Connecticut State University, Nairobi University
Brendan Williams, B.A., University of Connecticut, MBA Rensselaer Polytechnic Institute
Leon Yacher, B.A., M.A., University of New Mexico; Ph.D., Syracuse University

Administration

◆ **President's Office**

Paul Broadie II, Ph.D. (2017) President (Interim), Ph.D., Colorado State University; M.B.A., Long Island University; B.S., Mercy College
Christina Scillia-Rivera (2004) Secretary. A.S., Gateway Community College.

❖ **Human Resources**

Lucille E. Brown (1999) Director. J.D., Notre Dame University; B.A., Jackson State University.
Christie Higney (1997) Human Resources Associate. B.S., Quinnipiac College.
Mary-Lynn Labonty (2010) Payroll Officer. B.A., A.S., Post University.
Patricia Boyne (2010) Fiscal Administrative Officer. A.S., Gateway Community College.
Mark Magnotti (2012) Office Assistant.
Melissa Sirois* (2011) EA Human Resources.

❖ **Dean of Development and Community Partnerships**

Mary Ellen Cody (2008) Dean. B.A., George Washington University.
Susan K. Swirsky (1983) Administrative Assistant. Diploma for Executive Secretary, Academy for Business Careers; A.S., Gateway Community College.

❖ **Public Affairs and Marketing**

Evelyn Gard (2001) Director. M.A.Ed, Loyola Marymount University; B.A., Mount St. Mary's University.
Mari Walker (1983) Office Assistant. B.A., Charter Oak State College; A.S., South Central Community College.
Allen Gales (1979) Public Relations Associate. B.S., Charter Oak State College; A.S., South Central Community College.
Amie Fanning (2012) Coordinator of Publication Services. B.A., Southern Connecticut State University.

◆ **Administrative Services Division**

Dean of Administrative Affairs

Rose Ellis (2017) Dean (Interim). Ph.D., Capella University; M.L.S., Wayne State University; B.S., Wayne State University
Brenda Haase (1998) Administrative Assistant.

❖ **Business Office**

Jill McDowell (2002) Director of Finance and Administrative Services. M.B.A., University of Connecticut; B.S., University of Connecticut.
Carol Mason (1993) Assistant Accountant.
Carrol Lewis (2005) Assistant Accountant. M.B.A., Sacred Heart University; B.S., Sacred Heart University, A.S., Norwalk Community College.
Yomaira Melendez* (2011) EA Business Office. A.S., Gateway Community College.
Analia Pilco Corona* (2011) EA Business Office. A.S., Gateway Community College.
Katherine Jackson (2015) Accountant.

• **Purchasing**

Kelly Anne Levinson (1998) Fiscal Administrative Officer. MBA University of New Haven; B.S. University of New Haven; A.S., Gateway Community College.
Kim Diaz - Accountant. B.S., Albertus Magnus.
Jaimie Cornell* (2012) EA Purchasing Office

❖ **Facilities and Events Management**

Lucian Simone (2010) Director. M.S., Environmental Science, University of New Haven; B.S., Mechanical Engineering, Roger Williams College.
Sandra Garde (1999) Secretary II.
Brian Higney (2007) Facilities Services Coordinator. A.S., Gateway Community College.
Michael Martone (1998) Office Assistant.
Cary Broderick (2012) Campus Police Sergeant.
Charlene Thomas (1988) Office Assistant. Diploma for Secretarial Science, Stone Business School.

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- **Maintenance**
 - Rodney Carr*** (2014) Custodian.
 - Richard Catenza** (2010) Qualified Craft Worker-Electrician. Diploma New England Technical Institute.
 - Edward Chavis** (2007) Custodian.
 - Charles Cole** (2007) Lead Custodian.
 - Christine Crawford** (2012) Custodian.
 - James D'Angelo** (2012) Custodian.
 - Leroy Deberry** (2012) Supervising Custodian.
 - Denay Emery** (2012) Part-time Custodian.
 - Brian Ferraro** (2012) Qualified Craft Worker-HVAC-R.
 - John Fulton** (2014) Custodian.
 - Mohammed Hudu** (2014) Custodian. Certificate, O'Reilley Senior Secondary School, Ghana.
 - Maribel Lugo** (2001) Lead Custodian.
 - Joel Medina** (2012) Custodian.
 - Hedwig Molka** (2008) Custodian. A.S., Goodwin College.
 - Lucas Ortiz** (2007) Custodian.
 - Mark Perez** (2012) Custodian.
 - Joseph Prince** (1984) Building Superintendent I.
 - Franklin Sharpe** (2016) Custodian.
 - Luis Soler** (2007) Custodian.
 - Clara Zuluaga** (2007) Custodian. American Business School Columbia.
 - ❖ **Information Technology**
 - Lawrence Salay** (2005) Director. M.B.A., University of Phoenix; B.S. Mercy College.
 - John Desrosiers** (1996) Assistant Director of Information Technology. B.S., American Intercontinental University; A.S., Gateway Community College.
 - William Miklos** (1998) Network Manager. B.S., Charter Oak; A.S., Gateway Community College.
 - Dean Ferro** (2006) Technician II. B.S., Central Connecticut State University.
 - Derek Fries** (2009) Network Manager. MIS, B.S., Central Connecticut State University; A.S., Tunxis Community College.
 - Urfi Agolli** (2015) Information Technology Tech II. A.S., Gateway Community College.
 - Jeff Becker** (2015) Information Technology Tech II. B.A., Quinnipiac University.
 - Gladis Reyes** (2015) Help Desk Coordinator /Information Technology Tech 1. B.A., Southern Connecticut State University; A.S., Gateway Community College.
 - George Sacal** (2015) Information Technology Tech II. B.S., University of Bucharest, Romania.
 - ❖ **Institutional Research**
 - Vincent Tong** (2000) Director of Institutional Research. Ph.D., Yale University; M.A., University of Michigan; B.A., New York University.
 - Tanya Gibbs*** (2017) EA Institutional Research.
 - ◆ **Academic Affairs Division**
 - Dean of Academic Affairs**
 - Mark Kosinski** (2006) Dean. Ph.D., M.A., Bowling Green University; B.A. Alliance College.
 - Angela Richter** (1998) Assistant to the Dean of Academics. M.M., University of Phoenix; B.S., University of Bridgeport; A.S., Gateway Community-Technical College; ARRT(T).
 - Shelly Frosolone** (2004) Administrative Assistant. Academic Affairs Division; A.S., Gateway Community College.
 - Virginia E. Blackmon** (1980) Office Assistant. A.A., Southern New England Regional Bible School; Diploma for Secretarial Science, New Haven Academy of Business; Certificate, Essex County College; Certificate, Newark Manpower Training Skills Center.
 - Wilhelmenia Parsons** (2009) Office Assistant. A.S., Gateway Community College.
 - Celia Carvalho*** (2013) Health/Life Sciences Grant Program Assistant. B.A., University of Sao Francisco.
 - Bridget Mullally** (2014) Instructional Support Specialist. B.A., Southern CT State University.
-

❖ **Academic**

• **Allied Health and Nursing**

Sheila B. Solernou (2002) Academic Division Director Allied Health/Nursing. M.S.N., University of Hartford; B.S.N., Mount St. Mary College; R.N.

Dean Tinari* (2016) Instructor Exercise and Fitness. B.S.

Mary Beth Banks (2004) Enrollment Services Assistant. M.P.A., University of New Haven, M.S., University of New Haven; B.A., Merrimack College.

Alice M. Pandolfi (1999) Administrative Coordinator. M.P.H., Southern Connecticut State University; B.A., The Catholic University of America.

Linda Scott (2009) - Office Assistant.

Paul Fontanez (2016) Nurse Advisor. M.B.A., M.S., A.A.

• **Automotive**

Edward Barlage (2016) Automotive Program Facilitator. B.A., Michigan State University.

• **Early Learning Center**

Sarah Chambers (2016) Director of Child Development Center. M.S., Eastern Connecticut State University; B.A., Plymouth State College.

Mary Palermo (1998) Secretary II. B.G.S., University of Connecticut; A.S., Gateway Community College.

Marion Williams (1983) Child Development Teacher. B.S., New Hampshire College; A.S., South Central Community College.

Linda Alston (1998) Child Development Teacher. B.A., Connecticut College.

Stella Okparanta (1990) Child Development Teacher. M.A., University of New Haven; B.A., Albertus Magnus; A.S., South Central Community College.

Anmarie Rosario (2001) Child Development Assistant Teacher. A.S., Gateway Community College.

Marie Helene N'Guessan (2005) Child Development Assistant Teacher. A.S., Norwalk Community College.

Leasa Moon* (2010) Child Development Assistant Teacher. A.S., South Central Community College.

• **Educational Technologies**

Alfonzo Lewis (2001) Educational Technologies Specialist. B.A., University of Connecticut.

Taylor Rajaniemi* (2017) EA Acting Media Specialist. B.S., A.S.

• **Engineering and Applied Technologies**

Donna Bruno (1986) Office Assistant. Diploma for Executive Secretary, Stone School of Business; Certificate, Gateway Community College.

• **Library & Learning Commons**

Clara Ogbaa (2008) Director. Ed.D., University of Bridgeport; MLS, B.A., University of Texas.

Michael J. Cifferelli (2003) Librarian. M.L.S., Southern Connecticut State University; B.A.; Trinity College; A.A., Gateway Community College.

Martha Lipowski (1993) Librarian. M.L.S., B.S., Southern Connecticut State University.

Jianxin Yang (2006) Librarian. M.S., Texas Tech, M.L.S., Southern Connecticut State University; B.S. University of Helionjiang.

Lillian Maisfehl (2004) Library Associate. B.A., University of Massachusetts.

Shauna DeStefano (2004) Librarian. M.L.S., B.S., Southern Connecticut State University.

Todd Hampton (2013) Librarian. M.L.S., Southern CT State University; B.S., Eastern Connecticut State University.

Conor Perreault* (2016) EA Systems Librarian. M.L.S., Southern Connecticut State University; B.S., Northeastern University.

• **Math/Science**

Belinda Petrovic (2012) Academic Associate. B.S., Central Connecticut State University; A.A., Gateway Community College.

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- **Middle College**
Donnell Hilton* (2016) GCC Middle College Coordinator and Dual Enrollment. M.S., B.A., A.S.
 - ◆ **STUDENT SERVICES DIVISION**
 - Dean of Students Affairs**
Wilson Luna (1985) Dean. Ed.D., Nova Southeastern University; M.S., University of Bridgeport; B.A., Southern Connecticut State University; A.A., Norwalk Community College.
Amy DeFigueiredo (2006) Administrative Assistant. B.S., Southern Connecticut State University.
 - ❖ **Center for Educational Services**
Clara Mena (2005) Director. Academic Support Center. M.S., Southern Connecticut State University; B.A., Charter Oak State College; A.S., Gateway Community College.
 - ◆ **ENROLLMENT MANAGEMENT**
 - ❖ **Admissions**
J.A. Tony Carberry (2015) Director of Enrollment Management. E.M.B.A., University of New Haven, B.A., Elmhurst College, IL.
Wanda Edwards (1999) Secretary II. CPI Certificate Data Entry, Bridgeport, A.S., Gateway Community College.
Elizabeth Vega (2003) Associate Director of Admissions. B.S.W., Southern Connecticut State University; A.S., Gateway Community College.
Jeanette Rivera-Epps (2017) Assistant Director Admissions. B.S.
Sansanee Bijananda (2000) Office Assistant. Certificate, Gateway Community College.
Monica Garcia (2006) Office Assistant. A.S., Gateway Community College.
Lisa Barletta (2008) Office Assistant.
Michelle Fraser (1998) Associate Director of Admissions. M.S.M., Albertus Magnus College; B.S., University of New Haven; A.S., Gateway Community College.
Janet Parker (2008) Office Assistant. B.A., Columbia University.
 - ❖ **Registrar**
Maribel Lopez (2005) Registrar. M.B.A., University of New Haven; B.S., Southern Connecticut State University.
Teresa DelValle-Sadler (2016) Office Assistant
Jamaine Linton (2016) Office Assistant
Susan Moscato (1999) Associate Registrar. B.S., Charter Oak State College; A.S., Gateway Community College.
Abdul Alsamraie (2013) Assistant Registrar. A.S. Gateway Community College.
 - **Financial Aid**
Raymond R. Zeek (1994) Director. M.S., Southern Connecticut State University; B.A., Franklin & Marshall College.
Lavanda Bryant (2008) Financial Aid Assistant. M.S., B.S., Southern Connecticut State University; A.S., Gateway Community College.
Omar Livingston (2013) Associate Director of Financial Aid. B.S., Albertus Magnus; A.S., Norwalk Community College.
Linda Li (2012) Accountant. M.S., University of Hartford; B.S., Xian University of Technology.
 - ◆ **STUDENT ENGAGEMENT AND CAREER SERVICES**
Kellie Byrd Danso (2004) Director of Student Engagement and Career Development. M.Ed., North Carolina State University, NCC- National Certified Counselor; B.A., University of Connecticut.
Earle Lobo (2017) Student Development Coordinator.
Leigh Roberts (2015) Student Engagement & Career Development Associate. M.A., Albertus Magnus College.
Richard Palinko* (2013) EA Veteran Affairs. A.S., Gateway Community College.
-

- **Student Activities and Leadership Programs**

Marc Hartmann* (2017) Acting Director Student Activities M.A., B.S.

- ♦ **COUNSELING/STUDENT SUCCESS**

Michael Buccilli (2010) Director of Counseling and Student Success. M.S.W., Southern Connecticut State University; B.S., University of Vermont.

Lisa Corbeil (2005) Secretary II. B.S. Charter Oak State College; A.S. Middlesex Community College, Certification-Paralegal Litigation

John Mullane (2008) Counselor. M.S., Central Connecticut State University; B.A., University of New Hampshire.

Kathleen Ahern (2013) Counselor. M.S., Southern Connecticut State University; B.S., University of Rhode Island; NCC Certified.

Licella Arboleda (2015) Counselor. M.S., B.A., Southern Connecticut State University; A.S., Gateway Community College.

Roberta Prior (2004) Student Retention Specialist. M.S., Western Illinois University; B.A., Central Connecticut State University.

Sandra Williams-Eskridge (2001) Student Development and Services Associate. M.S., B.A., Fort Valley State College.

- **Student Disabilities Services**

Ronald Chomicz (2012) Learning Disabilities Specialist. Sixth Year, M.A., Southern Connecticut State University; B.A., Central Connecticut State University.

Samantha Kusiak (2012) Learning Disabilities Specialist. M.S., Southern Connecticut State University; B.A., Eastern Connecticut State University; A.A., Northwestern Community College.

Workforce Development & Continuing Education

Victoria L. Bozzuto (1994) Dean. M.Ed., Cambridge College, B.S., Southern Connecticut State University; A.S., South Central Community College; A.R.R.T. (T).

Erika Lynch (2012) Coordinator, Continuing Education. B.S., Quinnipiac University.

Marianne Lippard (2010) Administrative Assistant. B.A., Clemson University.

Pamela Walsh (2015) Continuing Education Associate. B.S., SUNY, Brockport NY.

Merilee Baker Roussat (2015) Continuing Education Coordinator. M.S.M., Albertus Magnus College; B.S., University of Connecticut.

Kaitlyn Kos* (2014) Coordinator of Adult Education. M.S., Southern Connecticut State University; B.A., Central Connecticut State University.

Victoria Dancy* (2016) Today's Youth Tomorrow's Career's Program Manager. M.B.A., University of New Haven; B.S., Albertus Magnus College.

- **Step Forward**

Jaime French* (2004) Director, Step Forward. M.A., University of Utah; B.A., SUNY, Albany.

Adamil Rivera* (2017) EA SNAP E&T Program Coordinator

* Denotes Full-Time Educational Assistant

Emeriti

Thomas M. Adams (1983-2011) Professor Emeritus of Computer Engineering Technology
Carol Annette (1998-2017) Early Childhood Education Accreditation Facilitator Emerita
Frank D. Archangelo (1981-2003) Associate Professor Emeritus of Chemistry/Math/Physics
John Argento (1983-2009) Professor Emeritus of Chemistry, Math and Physics
Margaret Bauer (1978-2009) Dean Emerita of Research and Development
Mary P. Birdsey (1978-2003) Professor Emerita of Business Office Technology
William F. Celotto, PE (1979-1999) Professor Emeritus of Mechanical Engineering Technology
Lisa Cherhoniak (1998-2017) Associate Fiscal Administrative Officer Emerita
Michele N. Cone (1981-2007) Director Emerita of Library
Arthur Corda (1976-2009) Director Emeritus of Facilities and Events
Daniel J. Courcey, Jr. (1969-2011) Professor Emeritus of Social Sciences
Francis E. Crowley (1986) Professor Emeritus of English
Lou D'Antonio (1998-2017) **Dean Emeritus of Administrative Affairs**
Jesse Davis (1971-2011) Professor Emeritus of Psychology
William J. Dean (1977-2003) Professor Emeritus of Social Science
Diana P. Duarte (1972-2003) Professor Emerita of Business Office Technology
Roy Francis (1979-2005) Director Emeritus of Engineering and Applied Technologies
Frank Gallagher (1985 - 2009) Professor Emeritus of Computer Science
Russell Gaudio (1991-2014) Professor Emeritus of English
G. J. Gerard (1982 - 2009) Professor Emeritus of Electrical Engineering Technology
Martha M. Hirsch (1986-1997) Associate Professor Emerita of Gerontology
Joyce Donen Hirschhorn (1969-1991) Professor Emerita of Human Communication
L.C. Hopes (1972-1992) Professor Emeritus of Sociology
Marsha Janik (1990 - 2009) Professor Emerita of Business Office Technology
Edith G. Jaquiere (1980-1992) Dean Emerita of Academic Affairs
Dr. Dorsey Kendrick (1998-2017) President Emerita
Dr. Earnestine Kirkland (1998-2017) Professor and Program Coordinator Emerita of Early Childhood Special Education
Susan Moore Lincoln, (1969-1997) Dean Emerita of Students
Susan Logston (1998-2017) Professor and Chairperson Emerita of Social Sciences
Dominic Longo (1979-1992) Associate Dean Emeritus of Instruction
Mr. Donald Lostritto (1998-2017) Professor and Program Coordinator Emeritus of Electrical Engineering Technology
Joseph E. Magyar (1968-1997) Associate Dean Emeritus of Community Services
Julie Perego Mangini (1989) A.R.R.T. (R). Professor Emerita-Radiography
Ann B. Manner (1977-1992) Professor Emerita of Chemistry/Math/Physics
Stuart J. McEnerney (1970-1989) Professor Emeritus of Mathematics
Mr. Mohsin Mehtar (1998-2017) Professor Emeritus of Biomedical Engineering Technology
Carol Guerrera McHugh (1970-2014) Executive Assistant Emerita to the President
Tina McHugh (1978-2011) Director Emerita of Counseling
Victor C. Medina (1998-2014) Professor Emeritus of Sociology
Donald Mei (1972-2009) Professor Emeritus of Accounting and Political Science
Luis F. Melendez (1990-2013) Director Emeritus of Center for Educational Services
Robert A. Miles (1972-2009) Director Emeritus of Career Services
Richard S. Muir, PE (1982-2003) Assistant Professor Emeritus of Electrical Engineering Technology
Maria Torres-Nosel (1998-2017) Counselor Emerita
Karl S. Paecht (1977-1992) Associate Professor Emeritus of Manufacturing Engineering Technology
Lee Panagoulas (1998-2017) Professor Emeritus of Electrical Engineering Technology
Bonnie A. Pease (1979-2003) Librarian Emerita of Library
Cheryl A. Pegues (1986-2009) Director Emerita of Student Development/Services
Albert Pesticci (1981-2009) Professor Emeritus of Math and Science
David Pettigrew (1990-2011) Professor Emeritus of Automotive Technology

Ann G. Robinson (1972-1999) Professor Emerita of Psychology
Kenneth R. Robinson (1970-1988) Professor Emeritus of Sociology
Irving Rosenthal (1971-1990) Professor Emeritus of Sociology and Anthropology
Wendy Samberg (1998-2017) Director Emerita of Instructional Design & Middle College Programs
John Scippa (1972-2011) Professor Emeritus of Media, Film and Human Communication
Edmund L. Sobolewski (1977-1987) Dean Emeritus of Students
Catherine E. Surface (1993-2015) Director Emerita of College Transition
David M. Swirsky (1982-2011) Registrar Emeritus of Records
William E. Thumbek (1970-2003) Professor Emeritus of Mathematics

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The 17 Connecticut State Colleges and Universities (ConnSCU) governed by the Board of Regents for Higher Education, offer students an affordable, accessible option to further their education or career training. With 12 community colleges, 4 state universities and an online college, no matter where you live or work, there's a ConnSCU campus close to you.

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The Connecticut State Colleges and Universities (CSCU) leadership team works with the campus leaders, faculty, and staff to help increase the educational attainment and workforce development of Connecticut's adult population.

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Vice President for State Universities – **Elsa Núñez**
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Director of Strategic Initiatives – **Michael Kozlowski**
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The Gateway Community College Foundation assists the College in expanding its services to students, enhancing academic instruction, and helping the College to invest in Connecticut's future.

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Althea Marshall Brooks
Dan Caron
John Emra, AT&T
Stephanie Fagan, Alexion Pharmaceuticals, Inc.
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Charles Frey, Nonprofit Consultant
Sally Glick, Chamber Insurance Trust
Lindy Gold, CT State Dept of Economic & Com Dev.
Thomas Griggs Jr., International Festival of Arts & Ideas
Allen Hadelman, Hadley, Inc.
Robert C. Hinton, Pullman & Comley, LLC.
Roberta Hoskie, Outreach Realty, Outreach School of Real Estate
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Susan Stone

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Paul Broadie II, Ph.D., President, Gateway Community College; Interim
Mark Lynch, Ph.D., Faculty Representative
Abdur Wali, Student Representative

ADVISORY COMMITTEES

These committees assist the program faculty in maintaining quality programs, relevant courses, and appropriate experiences that reflect the needs of area businesses and service industries, as well as local, state, and federal agencies.

- **AUTOMOTIVE TECHNOLOGY**

James B. Aiken, Sr., General Motors (Retired)
Nate Bettancourt, Former Student
Jay Bradley, Karl Chevrolet
John DeMartin, Parsons Buick
Ron DePoto, Parent of Student
Tim Feegel, Jackson Chevrolet
Vern Fortin, Middletown Toyota
Mark A. Lentine, Snap-On Tools
William O'Bier, Lee Partyka Chevrolet
Ken Pfeiffer, Valenti Chevrolet
Justin Rafone, Colonial Toyota
Rob Richnavsky, West Chevrolet
Dan Schnauffer, D'Addario Buick-GMC-Cadillac
Doug Summerton, Middletown Toyota

- **BIOMEDICAL ENGINEERING TECHNOLOGY**

Raymond Acosta, Chief Biomedical Engineering Technician, Yale-New Haven Hospital
Athan Chekas, Director, Clinical Engineering / Communications, New Britain General Hospital
John Chiarella, Colonel, U.S. Army (Ret.)
Vincent Cianci, Biomedical Engineering Technician, Hospital of Saint Raphael (GNHSTC 1984)
Michael Clemons, Chief Biomedical Engineer, The Westerly Hospital
Tony D'Adamo, Manager, Clinical Engineering Department, St. Vincent's Medical Center (GNHSTC 1986)
Thomas Koshis, X-Ray Engineer, GE Healthcare
Robert Meneguzzo, Manager, Field Service, Philips Medical Systems
Patrick Nelligan, CBET, CRES, Director, Biomedical Engineering, Bristol Hospital
Nicholas Noyes, CCE, Director, Clinical Engineering, University of Connecticut Health Center
David Roden, Installation Team Leader, Philips Medical Systems (GNHSTC 1985)

- **BUSINESS/BUSINESS OFFICE TECHNOLOGY/RETAIL/ENTREPRENEURSHIP/HOSPITALITY**

Margaret Antonelli, A.S., South Central Community College, Veterans Affairs Medical Center
Chris Bartlett, Skater's Landing and Global Entertainment Media
Marlon Bennett, The Lighting Quotient
Dennis Brown, Business Consultant
Sharon Burns, Wal-Mart
Diane Calello, Yale-New Haven Health System
Pat Daniel, New Haven Chamber of Commerce
Beth DuPont, Director of Human Resources, CT Hospital Association
C.E. Vlisedes Ph.D., University of New Haven
Corinne Fisher, Yale University School of Medicine
Michelle Fraser, Associate Director Admissions, Gateway Community College
Susan Gendreau, Qualidigm
Jane Griffith, Esquire
Drew Harris, Professor, Central Connecticut State University
Scott Healy, Town Green Special Services District,
Scott Hibson, Director of Sales, New Haven Hotel
Carlton Highsmith, President and CEO, Specialized Packaging Group, Inc.
Letamarie Highsmith, Vice President, Specialized Packaging Group, Inc.
Ed Hill, U.S. Navy Office of the Supervisor of Shipbuilding Small Business Liaison

Stan Kapinos, Innotech
Julie Brander-Klein, SCORE
Ann McDonnell, EcoGenics
Susan McLean, A.S., South Central Community College, United Illuminating
Debbie Mele, Sales Manager, Omni New Haven Hotel at Yale
Mary Ann O'Brien, New Haven Public Schools
Chris Ortwein, Town Green District Economic Prosperity Initiative
Joe Pasquantino, U.S. Navy Office of the Supervisor of Shipbuilding Small Business Liaison
Lynn Peterson, Marketing Director, Westfield Connecticut Post
Tim Phalen, Connecticut Retail Merchants Association
Matthew Potochney, The Lighting Quotient
Michael Roer, Entrepreneurship Foundation
Patricia Sanders, Post College President Emeritus, Chairman, New Haven SCORE
Jose Santiago, Walgreens
Wesley Thorpe, Executive Director, Emergency Shelter Management Service
Linda Trudeau, Board of Education, Guilford, CT
Robin Vuillermet, Co-owner, Union League Cafe
Clay Williams, City of New Haven Small Business Development
Lisa Woods, Connecticut Procurement Technical Assistance Program
Michael Zacchea, Lt. Col. USMC (ret.) UCONN Entrepreneurship Bootcamp for Veterans with Disabilities
Berdest Wrisbon, A.S. Gateway Community College, ACES, Program Development

- **COLLEGE OF TECHNOLOGY SITE COORDINATORS AND ADVISORY COMMITTEE**

Peter Angelastro, Naugatuck Valley Community College
Daniel Burkey, Associate Dean, University of Connecticut, School of Engineering
Karen Wosczyzna-Birch, COT System Director
Mehrdad Faezi, Manchester Community College
Ann Marie Gagnon, Charter Oak State College
Hubert Godin, Middlesex Community College
Bill Griffin, Housatonic Community College
Frank Gulluni, Asnuntuck Community College
Sharon Gusky, Northwestern Community College
Tara Jo Holmberg, Northwestern Community College
Joseph Karnowski, Norwalk Community College
Patrick Knowles, Three Rivers Community College
Michael Ligon, Capital Community College
Lin Lin, Middlesex Community College
Steven Moore, Manchester Community College
James Mulrooney, Assistant Dean, Central Connecticut State University, School of Engineering
Robert Ryder, Housatonic Community College
Catherine Seaver, Manchester Community College
Susan Spencer, Professor, Gateway Community College
Greg Szepanski, Tunxis Community College
Mark Vesligaj, Quinebaug Valley Community College

- **COMPUTER ENGINEERING TECHNOLOGY**

Dr. Hisham Alnajjar, Associate Dean, Electrical & Computer Engineering, University of Hartford
Dr. Atluru, Chief Executive Officer, Diversified Technology Consultants
Chris Bassett, Director of Information Technology, Town of North Haven
Michael Buccilli, Director of Career Service, Gateway Community College
Michael Doering, Director of Quality - Fire Systems, Honeywell Fire Systems
Steven Dufour, Software Design Assurance Manager, Honeywell Fire Systems
Richard Halkyard, Professor, Gateway Community College
Dr. Scott Hamilton, Professor and Chairman of Engineering, Quinnipiac University

Dr. Ronald Harichandran, Dean of Tagliatela College of Engineering, University of New Haven
Alex Linos, Franchise Owner, Nerds to Go
Lee Panagoulis, Professor, Gateway Community College
Larry Salay, Director of Information Technology, Gateway Community College
Poulomi Sanyal
Dr. Karen Tracey, Department Chair, Computer Electronics & Graphics Technology, CCSU
David Yaccarino, State Representative, R-87

- **COMPUTER SCIENCE TECHNOLOGY**

Robert Jasek, Information Security Officer, Yale University
Mohammed Hanif, Senior Engineer, Northeast Utilities
Carrie M. Horvath, Ph.D., Portal Support Specialist, Connecticut Community Colleges
Robert Hubbard, Business Admin. & Management Department Chair, Albertus Magnus College
David Pfrommer, Senior Software Engineer, CD Solutions, Inc.
Stacy W. Walker, IT Coordinator, Yale Cancer Center

- **DRUG AND ALCOHOL RECOVERY COUNSELOR PROGRAM**

Stuart Baker, APT Foundation
Rodney Denson, MSW, LADC Greater Bridgeport Mental Health, DARC Alumnus, Adjunct Faculty
Karl Garrett, Regional Network of Programs
Martin Jackson, Director, Hamden Children's Center
Charles MacDonald, Director, Alternatives in the Community, DARC Alumnus
Alexandra Molina, Director, Greater Bridgeport Mental Health
Jeff Quamme, Vice President, Connecticut Certification Board
Teresa Roehrich, MS, LADC, CCS, Apt Foundation, DARC Alumnus, Adjunct Faculty
Eileen Russo, MA, LADC, DARC Associate Professor
Robin Woodward, CAC, HELP, Inc., DARC Alumnus, DARC EA

- **ELECTRICAL ENGINEERING TECHNOLOGY**

William Bacon, Vice President, Metrology Operations, Zygo Corporation
Harold Hansen, Senior Engineer, Hamilton Sundstrand Space Systems International (UTC)
Robert O'Connor, Technical Consultant
Ron Robert, Staffing Manager, United Illuminating Co.
Charles E. Ruotolo, Electrical Engineering Consultant, Ruotolo Electric
Lisa Sampietro, Assistant Branch Manager, Randstad US
Edmond Vinarub, Electronic/Electro-Optics Consultant

- **ENVIRONMENTAL SCIENCE AND TOXICOLOGY**

R. Scott Allen, Enforcement Officer, Inland Wetland and Water Courses Commission
Dr. Murali Atluru, Diversified Technology Consultants
Patrick Bowe, Airt Management Bureau, CT Department of Environmental Protection
Charlie Cappannari, Cytex Industries, Inc.
Mary Chesley, Environmental Monitoring Laboratory, Inc.
David Ditta, Complete Environmental Testing
Jim Dziuba, Marin Environmental
Thomas Morrissey, Director of Planning, Water Management Bureau, CT Dept. of Environmental Protection
William Williams, Vice President, Consulting Environmental Engineers
Ken Zercie, Assistant Director, State Police Forensic Laboratory

-
- **HUMANITIES**

Dino Ciaburri, Adjunct Faculty, Gateway Community College, Headmaster, Milford Academy (Ret.)
George Charlesworth, Attorney
Donald Dimenstein, Director of Elderly Services (Ret.)
Sandy Kooregian, Executive Director, Domestic Violence Services of Greater New Haven
Paul Musco, Shoreline Chiropractic Services
Howard Reitman, Director, Reitman Personnel Agencies
Vivian Shipley, Professor of English, Southern CT State University
John Artis Yopp, Director, Department of Children and Families
 - **HUMAN SERVICES**

Tracy Blanford, Professor, Gateway Community College
Kellie Byrd Danso, Director Student Engagement & Career Development, Gateway Community College
Chantal Gray, Boys and Girls Club of New Haven
Jim Horan, CT Association of Human Services
Arnold Johnson, Emergency Shelter Management Services
Eric Murrell, GCC Human Service Alumni, Columbus House, Inc.
Teresa Russo, Professor, Gateway Community College
 - **MANUFACTURING ENGINEERING TECHNOLOGY**

Dr. Eben C. Cobb, Professor, Worcester Polytechnic Institute
Russell J. Corriveau, Senior Manufacturing Engineer, Sargent Manufacturing Company
Vincent Dinicola, Jr., Senior Manufacturing Engineer, U.S. Surgical
Geraldo C. Reyes, Jr., General Manager, Sargent Manufacturing Company
Robert Paternoster, Adjunct Faculty, Gateway Community College.
 - **MECHANICAL ENGINEERING TECHNOLOGY**

John Bokowski, Operation Consultant, United Illuminating
William Celotto PE Retired, Mechanical Engineering Technology, Gateway Community College
Ilias Diamantis, Project Engineer, Parker Hannifin Corporation
John Sarris, Ph.D, Chair, Mechanical Engineering Department, University of New Haven
Protais Tala, Validation Engineer, CAS Medical System, Inc.
 - **NURSING**

Susan Diehl, Professor & Chair, Nursing Division, University of Hartford
Lindsay Donnelly, Nursing Education Coordinator, Gaylord Hospital
Mary Ann Glendon, RN to BSN Coordinator, Southern CT State University
Peggy Joyce, Administrator, Whitney Center
Judy Hahn, Director of Education & Professional Development, Yale New Haven Hospital
Carol Martineau, Supervisor, Elim Park Health Care & Rehab
April McGrath, Graduate, Gateway Community College
Lisa O'Connor, Director of Undergraduate Nursing Program, Quinnipiac University
Linda Pellico, PhD, APRN, Yale University School of Nursing
Lisa Rebesch, Chairperson & Associate Professor, Dept. of Nursing, Eli Whitney Technical H.S.
Melinda Schoen, VP for Nursing, Masonicare
Ginnine Tanoia, Montowese
Beverly Tontini, HR Recruiter, VNA
 - **NUTRITION AND DIETETICS**

Donna Caseria, RD, Clinical Nutrition Research Coordinator, Yale-New Haven Hospital
Anne Davis, Ph.D., RDN, FAND, Director of Dietetics, University of New Haven
Marcia Doran, RDN, Professor, Gateway Community College
Nicholas Ferrigno, Nutrition and Dietetic student, Gateway Community College
Pam Galasso, RD, Nutrition Consultant
Elaine Lickteig, RDN, Associate Professor and Clinical Coordinator, Gateway Community College
Nina Ruckes, RD, Nutrition Consultant
-

- **RADIOLOGY**

Jon Alderman, Research Associate, Yale School of Medicine
Denise Allen, Regional Chief Therapist, Yale New Haven Hospital
Amy Barocsi, Chief Technologist, Nuclear Medicine, Milford Hospital
Kathleen Bell, Regional Manager, Yale-New Haven Shoreline Medical Center
Karen Blackburn, Assistant Administrator of Radiology, William W. Backus Hospital
Reg Body, Clinical Instructor, GCC
Michael Bohan, Radiation Safety Officer, Yale-New Haven Hospital
Virginia Bowolick, Chief Radiation Therapist, Bridgeport Hospital
Vicki Bozzuto, Dean of Continuing Education and Workforce Development, Gateway Community College
Angela Burnham, Lead Sonographer, St. Francis Hospital
Gloria-Mary Calhoun, Radiation Therapist, Yale New Haven Hospital, St. Raphael Campus
Carissa Carta, Senior Technologist Nuclear Medicine, Middlesex Hospital
Melanie Caruso, Clinical Instructor, Department of Ultrasound, Middlesex Hospital
Christy Casella, Clinical Instructor, Temple Radiology
Christine Cooper, Director of Radiology & Cardiology, Griffin Hospital
Anne Curtis, M.D., Clinical Professor, Department of Diagnostic Imaging, Yale-New Haven Hospital
Lori Daley, Chief Technologist, Nuclear Medicine Department, VA Connecticut Healthcare System, West Haven Campus
David Daniele, Staff Technologist Nuclear Medicine, UCONN Health Center
Floyd Davis, Clinical Instructor, GCC
Sandra Dean, Radiology Interim Director, Middlesex Hospital
Elizabeth DeRosa-Linsley, Imaging Director, Temple Radiology
Nancy DeStefano, Lead Sonographer, Department of Ultrasound, Middlesex Hospital
Robert DeVito, Manager, Department of Diagnostic Imaging, Yale-New Haven Hospital
Gina Giaquinto, Clinical Instructor, GCC
Gregory Getman, Clinical Instructor, GCC
Joyce Giannelli, Clinical Instructor, GCC
Cheryl Granucci, Director, Diagnostic Radiology, Yale-New Haven Hospital
Matthew Gregory, Chief Technologist, Nuclear Medicine, Yale-New Haven Hospital
Lorna Grohns, Yale-New Haven Hospital, St. Raphael's campus
Kathy Hale, Radiation Therapy Instructor
Kathy Halligan, Diagnostic Radiology, Yale-New Haven Hospital
Kathleen Hansen, Chief Technologist, Nuclear Medicine, MidState Medical Center
Bonnie Hensen, Lead Sonographer, VA Connecticut Healthcare System, West Haven Campus
Susan Higgins, Radiation Therapy Department, Yale-New Haven Hospital
Karen Hoang, Clinical Supervisor, Cardinal Health Nuclear Pharmacy Services (East Hartford)
Tony Hrenyo, Lead Sonographer, Milford Hospital
Alan Iovino, Chief Sonographer, Ultrasound, Norwalk Hospital
JoAnne Jones, Chief Technologist, Bridgeport Hospital Radiology
John Kim, Chief Dosimetrist, Yale-New Haven Hospital
Christine Kopp, Lead Sonographer, St. Francis Hospital
Mark Lewis, Chief Technologist, Radiology Department, VA Connecticut Healthcare System, West Haven Campus
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Anna McKinzie, Smilow Cancer Hospital at Yale-New Haven Hospital
Sue McLean, Supervisor, Radiation Oncology, Danbury Hospital
Claudine Murphy, Radiation Therapy, Bridgeport Hospital
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Susan Palumbo, Lead Sonographer, Ultrasound, Connecticut Children's Medical Center
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Michele Pepe, Manager, Nuclear Medicine, Yale-New Haven Hospital

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Laura Quillia, Clinical Instructor, Lawrence & Memorial Hospital
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- **RAILROAD ENGINEERING TECHNOLOGY**

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Keith Kalish, Radio Maintainer, MTA Metro-North Railroad
Wayne Sanford, President, Shoreline Trolley Museum
Frank Vega, Foreman General I - MTA Metro-North Railroad

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DIRECTIONS

New Haven Campus 20 Church Street, New Haven, CT 06510

From Hartford

I-91 South to I-95 South (New York). Take Exit 46, Long Wharf (first exit on the right). At the bottom of the exit ramp, turn right onto Sargent Drive. Go straight. Turn left at the traffic light on Church Street and go over the bridge toward downtown New Haven. The college is on the left.

From New London

I-95 South (New York). Take Exit 46, Long Wharf (first exit on the right). At the bottom of the exit ramp, turn right onto Sargent Drive. Go straight. Turn left at the traffic light on Church Street and go over the bridge toward downtown New Haven. The college is on the left.

From New York

I-95 North to exit 47 toward Downtown New Haven. Make a slight right onto N Frontage Road. Turn Right onto Church Street. The college will be on your left.

North Haven Campus 88 Bassett Road, North Haven, CT

From New Haven and Points South

I-95 North and I-91 North to Exit 11. At the end of the exit ramp, turn right onto Route 22. Proceed to third traffic light and turn left onto Bassett Road. The college is on the right, approximately 1/4 mile.

--- Or ----

Route 15 (Wilbur Cross/Merritt Parkway) to Exit 63. At the end of the exit ramp, turn right onto Route 22. Proceed to the fourth traffic light and turn left onto Bassett Road. The college is on the right, approximately 1/4 mile.

From New London and Points East of New Haven

I-95 South to I-91 North to Exit 11. At the end of the exit ramp, turn right onto Route 22. Proceed to the third traffic light and turn left onto Bassett Road. The college is on the right, approximately 1/4 mile.

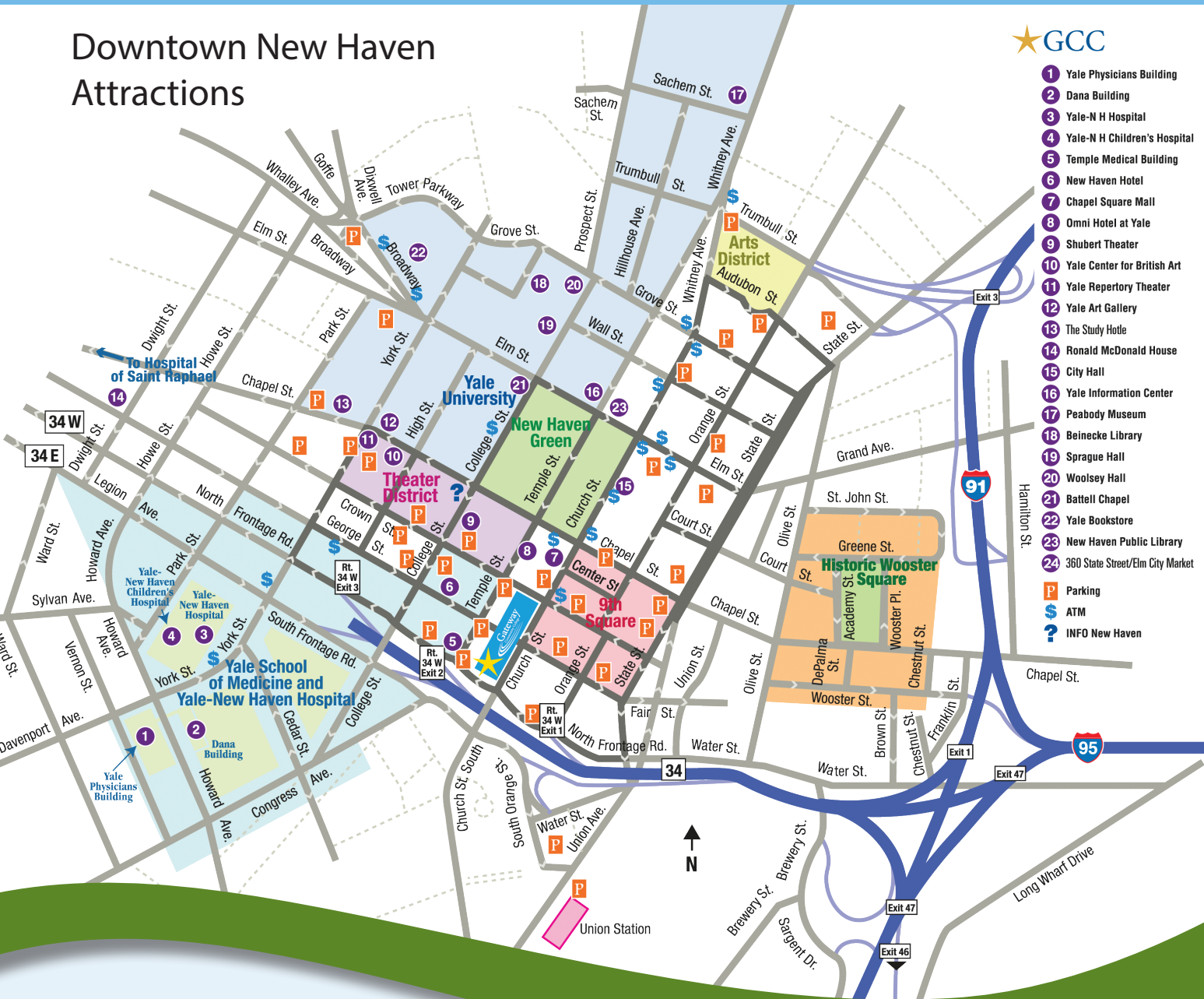
From Hartford and Points North

I-91 South to Exit 12 (Washington Avenue). At the end of the exit ramp, turn left. Proceed to the second traffic light and turn left onto Blakeslee Avenue. At the end of the road, turn left onto Bassett Road. The college is on the right, approximately 1/4 mile.

Downtown New Haven Attractions



- 1 Yale Physicians Building
- 2 Dana Building
- 3 Yale-N H Hospital
- 4 Yale-N H Children's Hospital
- 5 Temple Medical Building
- 6 New Haven Hotel
- 7 Chapel Square Mall
- 8 Omni Hotel at Yale
- 9 Shubert Theater
- 10 Yale Center for British Art
- 11 Yale Repertory Theater
- 12 Yale Art Gallery
- 13 The Study Hotel
- 14 Ronald McDonald House
- 15 City Hall
- 16 Yale Information Center
- 17 Peabody Museum
- 18 Beinecke Library
- 19 Sprague Hall
- 20 Woolsey Hall
- 21 Battell Chapel
- 22 Yale Bookstore
- 23 New Haven Public Library
- 24 360 State Street/Elm City Market
- P Parking
- \$ ATM
- ℹ INFO New Haven



GatewayCT.edu

Gateway Community College
 20 Church Street
 New Haven, CT 06510