

MIDDLESEX COMMUNITY COLLEGE

# COLLEGE CATALOG

2019-2020





# Contents

## Academic Calendar 2019-2020

### General Education

Aesthetic Dimensions  
Continuing Learning/Information Literacy  
Creativity  
Critical Analysis & Logical Thinking  
Ethical Dimensions of Humankind  
Historical Knowledge  
Global Knowledge  
Oral Communication in English  
Quantitative Reasoning  
Scientific Knowledge & Understanding  
Scientific Reasoning  
Social Phenomena  
Written Communication in English

### Degrees & Certificates

Accounting Associate Degree  
Accounting Assistant Certificate  
Accounting Technician Certificate  
Art Studies Associate Degree  
Audio & Music Production Certificate  
Biochemistry Studies Associate Degree  
Biology Studies Associate Degree  
Biotechnology Associate Degree  
Biotechnology Certificate  
Broadcast Communications Certificate  
Business Administration Associate Degree  
Business Skills Certificate  
Business Studies Associate Degree  
Certified Nurse Aide Certificate  
Chemistry Studies Associate Degree  
Child Development Associate (CDA) Credential  
Communications Networking Certificate  
Communication Studies Associate Degree  
Computed Tomography Post-Primary Certification  
Computer Engineering Technology Associate Degree  
Computer Information Technology Associate Degree  
Computer Science Studies Associate Degree  
Corporate Media Production Certificate  
Criminal Justice Associate Degree  
Criminology Studies Associate Degree  
Digital Marketing Certificate  
Digital Media Production Associate Degree  
Early Childhood Education Associate Degree  
Early Childhood Education Certificate  
Emergency Medical Technician  
Engineering Science Associate Degree  
Engineering Technology  
Technology Studies Associate Degree Option  
English Studies Associate Degree

2	Entrepreneurship Certificate	67
	Environmental Science Associate Degree	68
4	Film & Video Production Certificate	70
6	French Studies Associate Degree	71
7	Fine Arts Associate Degree	72
8	General Studies Associate Degree	74
9	Geography Studies Degree	76
10	Health Career Pathways	77
10	Health Information Management Associate Degree	78
11	Health Information Management Certificate	80
12	Help Desk Technician Certificate	81
13	Human Services Associate Degree	82
14	History Studies Associate Degree	84
15	Italian Studies Associate Degree	85
16	Liberal Arts & Sciences Associate Degree	86
17	Magnetic Resonance Imaging (MRI) Certificate	88
	Mammography Post-Primary Certification	89
18	Management Information Systems Associate Degree	90
18	Manufacturing Engineering Tech. Associate Degree	92
20	Manufacturing Machine Technology Associate Degree	94
21	Manufacturing Machine Technology Certificate	96
22	Mathematics Studies Associate Degree	97
23	Medical Billing & Coding	98
24	Multimedia Design Certificate	99
25	News & Sports Production Certificate	100
26	Nutrition & Dietetics Advising Pathway to Gateway CC	101
28	Ophthalmic Design & Dispensing Associate Degree	102
29	Ophthalmic Medical Assisting Certificate	104
30	Patient Care Technician	105
32	Personal Trainer Certificate	106
33	Pharmacy Technician	107
34	Phlebotomy Technician	108
35	Physics Studies Associate Degree	109
36	Political Science Studies Associate Degree	110
37	Psychology Studies Associate Degree	111
38	Radiologic Technology Associate Degree	112
39	Real Estate Principles & Practices	114
40	Security Officer Certification	115
42	Social Work Studies Associate Degree	116
44	Sociology Studies Associate Degree	117
45	Software Developer Certificate	118
46	Spanish Studies Associate Degree	119
48	Technology Studies Associate Degree	120
49	Theatre Studies Associate Degree	121
50	Therapeutic Recreation Certificate	122
58	Veterinary Assistant	123
60	Veterinary Technology Associate Degree	124
61	Web Design & Development Certificate	126
62		
64	<b>Credit Course Descriptions</b>	<b>127</b>
64	Courses with No Prerequisites	127
66		

# ACADEMIC CALENDAR 2019-2020

## SUMMER SEMESTER 2019

### Session I (5 weeks)

Sunday, June 2 – Online classes begin  
 Monday, June 3 – On-campus classes begin  
 Wednesday, June 26 – Last Day to Withdraw from classes  
 Wednesday, July 3 – On-campus classes end  
 Thursday, July 4 – COLLEGE CLOSED  
 Sunday, July 7 – Online classes end

### SESSION III (7 weeks)

Monday, June 17 – Classes begin  
 Thursday, July 4 – COLLEGE CLOSED  
 Friday, July 5 – NO CLASSES  
 Monday, July 22 – Last Day to Withdraw from classes  
 Thursday, August 1 – Last Day for On-Campus classes  
 Monday, August 5 – Online classes end

### Session II (5 weeks)

Sunday, July 7 – Online classes begin  
 Monday, July 8 – On-campus classes begin  
 Wednesday, July 31 – Last Day to Withdraw from classes  
 Wednesday, August 7 – On-campus classes end  
 Sunday, August 11 – Online classes end

### SESSION IV (10 weeks- Internships Only)

Monday, June 3 – Classes begin  
 Thursday, July 4 – COLLEGE CLOSED  
 Friday, July 5 – NO CLASSES  
 Monday, July 22 – Last Day to withdraw from classes  
 Monday, August 12 – Classes end

## FALL SEMESTER 2019

	Full-Semester Courses (16 weeks)	Late-Start Courses (12 weeks)	MAP (5 weeks per session)
Classes Begin	Tuesday, August 27	Monday, September 23	Session A: Tuesday, August 27 Session B: Sunday, September 29 Session C: Sunday, November 3
Last Day to Add/Drop Last Day for 50% Tuition Refund	Monday, September 9	Monday, September 30	Session A: Friday, August 30 Session B: Tuesday, October 1 Session C: Tuesday, November 5
Last Day to Change from Credit to Audit Status	Monday, September 23	Monday, October 21	Must be declared at time of registration
Reading Day – No Classes, College Open	Tuesday, October 22	Tuesday, October 22	Not applicable
Last Day to Withdraw from Class	Monday, November 11	Monday, November 25	Session A: Friday, September 20 Session B: Friday, October 25 Session C: Friday, December 6
Thanksgiving Recess – No Classes	Wednesday, November 27 through Sunday, December 1 (College Open November 27 and 29; College Closed Nov. 28, Nov. 30, and Dec. 1)		
Last Day of Classes	Saturday, December 7	Saturday, December 7	Session A: Sunday, September 29 Session B: Sunday, November 3 Session C: Sunday, December 15
Final Exam/Final Class Periods Special Schedule (Required time in class syllabus)	Monday, December 9 through Saturday, December 14  Make-Up Day (only in case of inclement weather or emergency closing): Monday, December 16		Not applicable
Final Exams End	Saturday, December 14		Not applicable
Final Grades Due	Wednesday, December 18 at 5:00pm		Session A: Wednesday, October 2 Session B: Wednesday, November 6 Session C: Wednesday, December 18

### Other Important Dates – All Sessions

Faculty Semester Begins – Monday, August 26 (MAP Classes: Sunday, August 25)  
 Labor Day – College Closed – Monday, September 2  
 Constitution Day – Classes Held – Monday, September 18  
 Columbus Day – Classes Held – Monday, October 14  
 Last Day to Make Up Incompletes from Spring 2019 & Summer 2019 – Monday, November 4  
 Veterans Day – Classes Held – Monday, November 11  
 Graduation Applications Due for December Completers – Friday, December 13  
 Faculty Semester Ends – Sunday, December 22

*\*Make-Up Day (only in case of inclement weather or emergency closing)*



## WINTER SESSION 2019-2020

**WINTER CLASSES BEGIN** Thursday, December 26  
**New Year's Day – COLLEGE CLOSED** Wednesday, January 1  
**Last Day to Withdraw from Classes** Wednesday, January 8  
**Classes End at 12:00 noon Eastern Time** Thursday, January 16  
**Grades Due by 12:00 noon** Friday, January 17

## SPRING SEMESTER 2020

	Full-Semester Courses (16 weeks)	Late-Start Courses (12 weeks)	MAP (5 weeks per session)
Classes Begin	Wednesday, January 22	Tuesday, February 18	Session A: Sunday, January 26 Session B: Sunday, March 1 Session C: Sunday, April 12
Last Day to Add/Drop Last Day for 50% Tuition Refund	Tuesday, February 4	Monday, February 24	Session A: Tuesday, January 29 Session B: Tuesday, March 3 Session C: Tuesday, April 14
Presidents' Recess – No Classes	Friday, February 14 – College Open Sat., February 15 – College Closed Sun., February 16 – College Closed Mon., February 17 – College Closed	Not applicable	Not applicable
Last Day to Change from Credit to Audit Status	Monday, February 24	Monday, March 23	Must be declared at time of registration
Last Day to Withdraw from Class	Wednesday, April 15	Monday, May 4	Session A: Friday, February 21 Session B: Friday, April 3 Session C: Friday, May 8
Spring Break – No Classes, College Open	Monday, March 16 through Sunday, March 22		
Day of Reflection – No Classes, College Closed	Friday, April 10		
Reading Day – No Classes, College Open	Thursday, May 7	Thursday, May 7	Not applicable
Last Day of Classes	Saturday, May 9	Saturday, May 9	Session A: Sunday, March 1 Session B: Sunday, April 12 Session C: Sunday, May 17
Final Exam/Final Class Periods Special Schedule (Required time in class syllabus)	Monday, May 11 through Saturday, May 16 Make-Up Day (only in case of inclement weather or emergency closing): Monday, May 18		Not applicable
Final Exams End	Saturday, May 16		Not applicable
Final Grades Due	Tuesday, May 19 at 9:00am		Session A: Wednesday, March 4 Session B: Wednesday, April 15 Session C: Tuesday, May 19

### Other Important Dates – All Sessions

**Faculty Semester Begins** – Tuesday, January 21  
**Last Day to Make Up Incompletes from Fall 2019** – Monday, April 13  
**Graduation Applications Due for May Completers** – Wednesday, April 15  
**6th Annual Academic Convivium** – Friday, April 24  
**Academic Awards Night** – Friday, May 1  
**Commencement** – Thursday, May 28  
**Faculty Semester Ends** – Monday, June 1

*\*Make-Up Day (only in case of inclement weather or emergency closing)*

# GENERAL EDUCATION

## PURPOSE

The General Education core at Middlesex Community College offers students a comprehensive and vibrant curriculum which builds the foundation for lifelong learning. To that end, our course offerings provide students rich learning experiences meant to develop their abilities to think critically, communicate clearly – orally and in writing – use quantitative and scientific reasoning practically, understand and navigate information and use it effectively, and value others through an appreciation of human differences. General Education at Middlesex prepares students for their shared responsibilities as global citizens and to thrive in and contribute to an increasingly information dependent society.

## TRANSFER PROGRAMS AND CSCU “TRANSFER TICKET” PATHWAYS

**This information is for students who enroll in a transfer-oriented Associate Degree program or CSCU Transfer Ticket Pathway in the Fall 2016 semester and later.**

Students should consult their Academic Advisors about academic problems, changes in academic plans and graduation requirements.

As of the Fall 2016 semester, the General Education Requirements will align with the General Education Common Core Competencies adopted by the Connecticut State Colleges & Universities System. The new General Education Core is part of the Transfer Articulation Program designed to ensure seamless transfer from a Connecticut Community College to a Connecticut State University or Charter Oak State College.

While at Middlesex, students must complete general education courses that are designated as fulfilling a set of common core competencies – in addition to degree requirements in their major.

Students in a CSCU Transfer Pathway Program will complete the first 60-63 credits at a community college and the final 60-63 credits in the same field at a CSU. The Transfer Articulation Program ensures that all of the Associate Degree credits will transfer, students will enter the university with junior (3rd year) status, and they will need to complete no more than 60-63 additional credits to earn a Bachelor’s degree.

**3 credits** ENG\*101 Composition

**3 credits** Written Communication

**3 credits** Oral Communication

**3 credits** Aesthetic Dimensions

**3-4 credits** Quantitative Reasoning - *MUST be a course with a prerequisite of MAT\*137/MAT\*137E, or placement above MAT\*137*

**3 credits** Historical Knowledge

**6 credits** Social Phenomena - (2 courses)

**7-8 credits** Scientific Reasoning

**(2 courses)** Scientific Knowledge & Understanding

*One course MUST be a laboratory science course*

**30-33 credits** Transfer Ticket “Framework 30”

**Some Transfer Ticket Programs require students to take two additional General Education courses (6 credits):**

**3 credits** Creativity

**3 credits** Global Knowledge

**36-39 credits** General Education Total

***Students matriculating in the Fall 2016 semester and beyond are no longer required to take “D” and “L” courses as previously mandated at Middlesex Community College.***

## CAREER-ORIENTED PROGRAMS

### Guidelines for fulfilling General Education Core Competencies for Career-Oriented Degree Programs.

Students should consult their Academic Advisors about academic problems, changes in academic plans and graduation requirements.

Students must complete 21-23 credits of general education courses that are designated as fulfilling a set of common core competencies – in addition to 39-45 credits of degree requirements in their major.

**3 credits** ENG\*101 Composition

**6 credits** Any two courses chosen from among those designated as fulfilling the following

General Education Core Competencies:

Aesthetic Dimensions

Historical Knowledge

Oral Communication

Social Phenomena

Written Communication

**3 credits** Aesthetic Dimensions

**3-4 credits** Quantitative Reasoning or MAT\*137/137E

**3 credits** Social Phenomena

**3-4 credits** Scientific Reasoning OR Scientific Knowledge & Understanding

**21-23 credits Total**

*Students matriculating in the Fall 2016 semester and beyond are no longer required to take “D” and “L” courses as previously mandated at Middlesex Community College.*

## COMMON CORE COMPETENCIES

Each institution under the Board of Regents for Higher Education that offers an undergraduate degree program shall develop its core curriculum consistent with the purpose adopted by the Board. The purpose of a core curriculum is to enable students to gain knowledge of human cultures and the physical and natural world across all academic areas. The goal of this education is that all graduating students are prepared to be world citizens. The idea of general education in America is to give students an integrated educational experience.

General Education is the hallmark of American higher education and the key to a broadly-educated citizenry. 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 60 hours, including their essential general education. The CSCU Transfer Articulation Policy identifies thirteen General Education Competencies that are defined on the following pages:

- Aesthetic Dimensions of Humankind (pg 8)
- Continuing Learning/Information Literacy (pg 9)
- Creativity (TAP Pathway Programs only) (pg 10)
- Critical Analysis & Logical Thinking (pg 11)
- Ethical Dimensions of Humankind (pg 12)
- Global Knowledge (TAP Pathway Programs only) (pg 13)
- Historical Knowledge & Understanding (pg 12)
- Oral Communication in English (pg 14)
- Quantitative Reasoning (pg 15)
- Scientific Knowledge & Understanding (pg 16)
- Scientific Reasoning (pg 17)
- Social Phenomena (pg 18)
- Written Communication in English (pg 19)

# AESTHETIC DIMENSIONS

**Aesthetic Dimensions** courses are designed so that 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.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Aesthetic Dimensions general education core competency by being able to:

- Apply key concepts, terminology, and methodologies in the analysis of literary, performing, visual, and other arts forms.
- Identify works of visual, performing, or literary art within historical, social, political, cultural, and aesthetic contexts.
- Articulate ways in which literature, performance, the visual arts and related forms respond to and influence society and culture.
- Actively engage with the literary, performing or visual arts and other cultural forms through experience or creative expression.
- Articulate the ethical dimensions surrounding the creation, circulation, and interpretation of works of visual, performing, or literary art.

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Aesthetic Dimensions general education core competency.

**ART\*100** Art Appreciation  
**ART\*101** Art History I  
**ART\*102** Art History II  
**ART\*109** Color Theory  
**ART\*111** Drawing I  
**ART\*112** Drawing II  
**ART\*116** Perspective Drawing  
**ART\*121** Two-Dimensional Design  
**ART\*122** Three-Dimensional Design  
**ART\*131** Sculpture I  
**ART\*147 / COM\*147** Digital Cinematography  
**ART\*155** Watercolor I  
**ART\*163** Ceramic Handbuilding  
**ART\*165** Metal and Jewelry Design I  
**ART\*166** Metal and Jewelry Design II  
**ART\*215** Illustration  
**ART\*250** Digital Photography  
**ART\*253** Oil Painting I  
**ART\*254** Oil Painting II  
**ART\*280** Advanced Digital Photography  
**COM\*129** Digital Video Production  
**COM\*147 / ART\*147** Digital Cinematography  
**COM\*154** Film Study & Appreciation  
**COM\*203** Media Literacy  
**COM\*220** Television Studio Production  
**COM\*264** Advanced Editing Workshop  
**DGA\*101** Introduction to Digital Arts  
**DGA\*110** Computer Graphics  
**DGA\*120** Digital Imaging I  
**DGA\*223** Digital Illustration  
**DGA\*231** Digital Page Design I

**DGA\*241** Internet Web Design I  
**DGA\*242** Internet Web Design II  
**DGA\*250** Interactive Multimedia Production  
**DGA\*257** Motion Graphics and Effects  
**DGA\*260** Animation  
**ENG\*281** Creative Writing  
**ENG\*282** Creative Writing – Poetry  
**ENG\*283** Creative Writing – Fiction  
**ENG\*285** Memoir Writing  
**GRA\*150** Introduction to Graphic Design  
**GRA\*251** Advanced Graphic Design  
**GRA\*296** Graphic Design Internship  
**MUS\*101** Music History and Appreciation  
**MUS\*104** World Music  
**MUS\*111** Fundamentals of Music I  
**MUS\*117** Electronic Music  
**MUS\*137** History and Appreciation of Jazz  
**MUS\*138** Rock and Roll History & Appreciation  
**MUS\*152** Drumming and Percussion Ensemble  
**THR\*101** Introduction to Theatre  
**THR\*102** Theatre History  
**THR\*110** Acting I  
**THR\*113** Performance for Film and Television  
**THR\*210** Acting II



# CONTINUING LEARNING/ INFORMATION LITERACY

**Continuing Learning/Information Literacy** courses are designed so that 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.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Continuing Learning/Information Literacy general education core competency by being able to:

- Demonstrate competency in using current, relevant technologies to solve problems, complete projects, and make informed decisions.
- Access, navigate, identify and evaluate information that is appropriate for students' need(s) and audience(s).
- Synthesize information to broaden knowledge and experiences and to produce both independent and collaborative work.
- Evaluate the economic, legal, ethical, and social issues surrounding the access and use of information and relevant technologies.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-continue-learning.pdf](http://www.ct.edu/files/pdfs/tap-outcome-continue-learning.pdf)

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Continuing Learning/Information Literacy general education core competency.

**ACC\*271** Intermediate Accounting I  
**ACC\*272** Intermediate Accounting II  
**ART\*250** Digital Photography  
**BBG\*115** Business Software Applications  
**BFN\*110** Personal Finance  
**BMG\*202** Principles of Management  
**BMK\*201** Principles of Marketing  
**BMK\*216** Internet Marketing  
**CAD\*110** Introduction to CAD  
**CJS\*211** Criminal Law I  
**CJS\*212** Criminal Law II  
**CJS\*213** Evidence and Criminal Procedure  
**CSA\*135** Spreadsheet Applications  
**CSA\*140** Database Applications  
**CSC\*101** Introduction to Computers  
**CSC\*105** Programming Logic  
**CSC\*115** Introduction to Programming with Alice

**CSC\*205** Visual Basic I  
**CSC\*231** Database Design I  
**CSC\*249** Contemporary Business Application Development I  
**CSC\*262** Programming Mobile Devices I  
**CSC\*295** Coop Ed/Work Experience  
**CST\*120** Introduction to Operating Systems  
**CST\*163** Windows Server Administration  
**CST\*201** Introduction to Management Information Systems  
**CST\*228** Voice and Data Interworking  
**CST\*231** Data Communication and Networking  
**CST\*270** Network Security Fundamentals  
**ECE\*101** Introduction to Early Childhood Education  
**ECE\*131** Children's Literature  
**HIM\*157** Healthcare Informatics

# CREATIVITY

## ADDITIONAL GENERAL EDUCATION COURSES FOR TAP PATHWAY STUDENTS

The **Creativity and Global Knowledge** general education categories provide a means for Connecticut Community College students to fulfill additional general education requirements beyond the 30 credits already agreed upon in the common package in TAP degree programs.

These categories apply ONLY to students who enroll in and complete a TAP/Transfer Ticket degree at a Connecticut Community College and transfer to a CSU or COSC. Each CSU and COSC may develop separate policies regarding the acceptance of these credits for transfer students who do not complete a TAP/Transfer Ticket degree or who never enrolled in a TAP/Transfer Ticket degree. **Creativity** fulfills requirements for CCSU's Arts & Humanities, ECSU's Creative Expressions, SCSU's Creative Drive, and WCSU's General Education Elective.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Creativity general education core competency by being able to:

- Convey ideas and express aesthetic values with hands-on, creative activities.
- Demonstrate an understanding of practice in a specific medium or genre.
- Present creative projects to an audience.

## COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Creativity general education core competency.

**ART\*109** Color Theory  
**ART\*111** Drawing I  
**ART\*112** Drawing II  
**ART\*121** Two-Dimensional Design  
**ART\*122** Three-Dimensional Design  
**ART\*131** Sculpture I  
**ART\*147 / COM\*147** Digital Cinematography  
**ART\*155** Watercolor I  
**ART\*163** Ceramic Handbuilding  
**ART\*165** Metal and Jewelry Design I  
**ART\*215** Illustration  
**ART\*250** Digital Photography  
**ART\*253** Oil Painting I  
**ART\*254** Oil Painting II  
**ART\*280** Advanced Digital Photography  
**COM\*125 / DGA\*125** New Media Production  
**COM\*129** Digital Video Production  
**COM\*147 / ART\*147** Digital Cinematography  
**COM\*179** Performance for Film and Television  
**COM\*220** Television Studio Production  
**COM\*264** Advanced Editing Workshop  
**COM\*287** Advanced Media Production  
**COM\*294** Media Arts Workshop  
**DGA\*101** Introduction to Digital Arts  
**DGA\*110** Computer Graphics  
**DGA\*120** Digital Imaging I

**DGA\*125 / COM\*125** New Media Production  
**DGA\*223** Digital Illustration  
**DGA\*231** Digital Page Design I  
**DGA\*241** Internet Web Design I  
**DGA\*242** Internet Web Design II  
**DGA\*250** Interactive Multimedia Production  
**DGA\*256** 3D Animation Foundations  
**DGA\*257** Motion Graphics and Effects  
**DGA\*260** Animation  
**ENG\*281** Creative Writing  
**ENG\*282** Creative Writing – Poetry  
**ENG\*283** Creative Writing – Fiction  
**ENG\*285** Memoir Writing  
**GRA\*150** Introduction to Graphic Design  
**GRA\*251** Advanced Graphic Design  
**GRA\*296** Graphic Design Internship  
**MUS\*117** Electronic Music  
**MUS\*152** Drumming and Percussion Ensemble  
**MUS\*219** Electronic Music Composition/Audio Technology II  
**MUS\*237** Principles of Sound Recording  
**MUS\*238** Audio Mixing and Processing  
**THR\*110** Acting I  
**THR\*113** Performance for Film and Television  
**THR\*210** Acting II

# CRITICAL ANALYSIS & LOGICAL THINKING

**Critical Analysis & Logical Thinking** courses are designed so that 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.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Critical Analysis & Logical Thinking general education core competency by being able to:

- Identifying Arguments: Identify issues, evidence and reasoning processes; distinguish facts from opinion; recognize various types of arguments.
- Formulating arguments: Formulating good arguments, including a significant focus on inductive reasoning.
- Analysis: Break subject matter into components, and identify their interrelations to ascertain the defining features of the work and their contributions to the whole.
- Evaluation: Identify assumptions, assessing the quality and reliability of sources of evidence, and demonstrating knowledge of the criteria for evaluating the success of each kind of inference.
- Synthesis: Draw together disparate claims into a coherent whole in order to arrive at well-reasoned and well-supported inferences that can be justified as a conclusion.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-critical-thinking.pdf](http://www.ct.edu/files/pdfs/tap-outcome-critical-thinking.pdf)

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Critical Analysis & Logical Thinking general education core competency.

<b>ACC*100</b> Basic Accounting	<b>CSA*140</b> Database Applications	<b>ENG*213</b> Poetry
<b>ACC*271</b> Intermediate Accounting I	<b>CSC*115</b> Introduction to Programming with Alice	<b>ENG*214</b> Drama
<b>ACC*272</b> Intermediate Accounting II	<b>CSC*205</b> Visual Basic I	<b>ENG*218</b> Autobiography
<b>BBG*101</b> Introduction to Business	<b>CSC*231</b> Database Design I	<b>ENG*220</b> Studies in American Literature
<b>BBG*215</b> Global Business	<b>CSC*249</b> Contemporary Business Application Development I	<b>ENG*221</b> American Literature I
<b>BBG*231</b> Business Law I	<b>CSC*262</b> Programming Mobile Devices I	<b>ENG*222</b> American Literature II
<b>BBG*232</b> Business Law II	<b>CSC*295</b> Coop Ed/Work Experience	<b>ENG*231</b> British Literature I
<b>BBG*234</b> Legal Environment of Business	<b>CST*120</b> Introduction to Operating Systems	<b>ENG*232</b> British Literature II
<b>BBG*294</b> Business Internship	<b>CST*141</b> Computer Hardware	<b>ENG*233</b> Shakespeare I
<b>BBG*295</b> Cooperative Work Experience	<b>CST*163</b> Windows Server Administration	<b>ENG*234</b> Shakespeare II
<b>BES*118</b> Small Business Management	<b>CST*201</b> Introduction to Management Information Systems	<b>ENG*241</b> World Literature I
<b>BFN*201</b> Principles of Finance	<b>CST*228</b> Voice and Data Interworking	<b>ENG*242</b> World Literature II
<b>BMG*202</b> Principles of Management	<b>CST*231</b> Data Communication and Networking	<b>ENG*262</b> Women in Literature
<b>BMG*204</b> Managerial Communications	<b>CST*270</b> Network Security Fundamentals	<b>ENG*291</b> Mythology
<b>BMG*210</b> Principles of Organizational Behavior	<b>EAS*106</b> Natural Disasters	<b>ENG*298</b> Special Topics in English
<b>BMG*220</b> Human Resource Management	<b>ECN*101</b> Principles of Macroeconomics	<b>EVS*100</b> Introduction to Environmental Science
<b>BMK*103</b> Principles of Selling Retailing	<b>ECN*102</b> Principles of Microeconomics	<b>EVS*111</b> Environmental Science Laboratory
<b>BMK*106</b> Principles of Selling	<b>ECN*220</b> International Economics	<b>HIM*205</b> Medical Coding 1
<b>BMK*201</b> Principles of Marketing	<b>ENG*102</b> Literature and Composition	<b>HIM*206</b> Medical Coding 2
<b>BMK*216</b> Internet Marketing	<b>ENG*110</b> Introduction to Literature	<b>HIM*295</b> Health Information Management Internship
<b>BMK*230</b> Advertising and Promotion	<b>ENG*200</b> Advanced Composition	<b>HON 101</b> Honors Seminar
<b>CJS*211</b> Criminal Law I	<b>ENG*202</b> Technical Writing	<b>HON 102</b> Honors Seminar II
<b>CJS*212</b> Criminal Law II	<b>ENG*210</b> Fiction	<b>HON 202</b> Honors Capstone Project
<b>CJS*213</b> Evidence and Criminal Procedure	<b>ENG*211</b> Short Story	<b>MAT*146</b> Math for the Liberal Arts
<b>CJS*294</b> Contemporary Issues in Criminal Justice		<b>PHL*101</b> Introduction to Philosophy
<b>CSA*135</b> Spreadsheet Applications		<b>PHL*111</b> Ethics
		<b>PHL*131</b> Logic
		<b>PHL*145</b> Sustainable Living
		<b>PHL*151</b> World Religions
		<b>PHL*199</b> Special Topics in Philosophy

# ETHICAL DIMENSIONS OF HUMANKIND

**Ethical Dimensions** is a competency embedded throughout the curriculum so that students will identify ethical principles that guide individual and collective actions and apply those principles to the analysis of contemporary social and political problems.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Ethical Dimensions general education core competency by being able to:

- Recognize and reflect critically on ethical issues.
- Apply appropriate concepts and terminology in identifying ethical problems and proposing and defending solutions to them.
- Apply standards and practices of scholarship, research, and documentation in defending positions and beliefs, including reevaluating beliefs in light of unforeseen implications or new evidence.
- Recognize the value of creative, collaborative, and innovative approaches to problem-solving, including the ability to acknowledge differing points of view.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-ethics.pdf](http://www.ct.edu/files/pdfs/tap-outcome-ethics.pdf)

---

# HISTORICAL KNOWLEDGE

**Historical Knowledge** courses are designed so that students will study the interrelatedness of various realms of human experience from multiple historical perspectives.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Historical Knowledge general education core competency by being able to:

- Identify and differentiate types of historical sources including popular, academic, primary, and secondary.
- Recognize ever-changing interpretations of history.
- Place the development of societies in national and/or international contexts.
- Explain the influence and agency of social circumstances, which may include race, class, gender, and others, on historical events
- Describe the impact of the past on subsequent events, including the present.
- Examine the complex, dynamic, and interrelated nature of change.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-history.pdf](http://www.ct.edu/files/pdfs/tap-outcome-history.pdf)

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Historical Knowledge general education core competency.

**BIO\*109** Principles of Biotechnology

**HIS\*101** Western Civilization I

**HIS\*102** Western Civilization II

**HIS\*107** History of Puerto Rico

**HIS\*121** World Civilization I

**HIS\*122** World Civilization II

**HIS\*201** United States History I

**HIS\*202** United States History II

**HIS\*244** Europe in the 20th Century

**MUS\*101** Music History and Appreciation I

**MUS\*104** World Music

**MUS\*137** History and Appreciation of Jazz

**MUS\*138** Rock and Roll History and Appreciation

**THR\*101** Introduction to Theatre

**THR\*102** Theatre History



# GLOBAL KNOWLEDGE

## ADDITIONAL GENERAL EDUCATION COURSES FOR TAP PATHWAY STUDENTS

The **Creativity and Global Knowledge** general education categories provide a means for Connecticut Community College students to fulfill additional general education requirements beyond the 30 credits already agreed upon in the common package in TAP degree programs.

These categories applies ONLY to students who enroll in and complete a TAP/Transfer Ticket degree at a Connecticut Community College and transfer to a CSU or COSC. Each CSU and COSC may develop separate policies regarding the acceptance of these credits for transfer students who do not complete a TAP/Transfer Ticket degree or who never enrolled in a TAP/Transfer Ticket degree.

**Global Knowledge** fulfills requirements for CCSU's Social Sciences, ECSUs Individuals and Societies, SCSU's Global Awareness, WCSU's General Education Elective, and COSC's Global Understanding.

The courses vetted by each Community College for Creativity and Global Knowledge will be accepted at the four CSUs and COSC (Global Knowledge) as fulfilling the additional general education requirements specified above.

The vetted courses do not need to have equivalents at the receiving CSU or COSC.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Global Knowledge general education core competency by being able to:

- Apply theories and methods of social sciences.
- Make informed evaluations of contemporary social institutions and phenomena outside the United States.
- Explore non-U.S. perspectives on global social institutions and phenomena.

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Global Knowledge general education core competency.

**ANT\*101** Introduction to Anthropology

**ANT\*205** Cultural Anthropology

**BBG\*215** Global Business

**BIO\*109** Principles of Biotechnology

**BIO\*222** Molecular Biotechniques

**BMG\*202** Principles of Management

**BMK\*201** Principles of Marketing

**COM\*154** Film Study & Appreciation

**ECN\*102** Principles of Microeconomics

**ECN\*220** International Economics

**GEO\*101** Introduction to Geography

**HLT\*160/SOC\*160** Introduction to Public Health

**MUS\*104** World Music

**PHL\*151** World Religions

**POL\*103** Introduction to International Relations

# ORAL COMMUNICATION IN ENGLISH

Oral Communication in English courses are designed so that students will be prepared to develop oral messages of varying lengths and styles that communicate effectively and appropriately across a variety of settings.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Oral Communication in English general education core competency by being able to:

- **Respond to Rhetorical Situations:**
  - Identify and evaluate the specific audience and purpose in different communication situations, and adapt the communication appropriately to those situations.
  - Develop effective messages that influence attitudes, beliefs, and actions through appropriate logical, ethical, and emotional appeals.
  - Recognize when others do not understand the message and then manage those misunderstandings.
  - Listen effectively by understanding, remembering, interpreting, evaluating, and responding appropriately to the speech of others.
- **Use Sources**
  - Locate, evaluate, use, and acknowledge sources appropriate to the communication purpose.
  - Synthesize and integrate others' ideas purposefully and ethically into students' own communication.
  - Summarize, paraphrase, and quote accurately the ideas of others, clearly differentiating them from the students' own ideas.
- **Craft Logical Arguments**
  - Select an appropriate and effective medium for communicating.
  - Provide clear and logical evidence, support, or illustration for their assertions.
  - Choose appropriate and effective organizing methods for the message, employing effective transitions and signposts.
- **Apply Language Conventions**
  - Use diction, tone, and level of formality appropriate to audience, purpose, and situation.
  - Use pronunciation, grammar, articulation, and nonverbal behaviors appropriate for the message and designated audience.
- **Formulate Effective Communication Strategies**
  - Reflect on and explain the effectiveness of their communication choices regarding the audience, purpose, and situation.
  - Speak ethically by accepting responsibility for their communication practices and by communicating openly and directly.
  - Revise and rehearse speeches before delivery.
  - Work collaboratively with others, including managing discussion, tasks, and information.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-oral.pdf](http://www.ct.edu/files/pdfs/tap-outcome-oral.pdf)

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Oral Communication general education core competency.

**BBG\*115** Business Software Applications  
**BMG\*204** Managerial Communications  
**COM\*172** Interpersonal Communication  
**COM\*173** Public Speaking  
**HSE\*202** Introduction to Counseling/ Interviewing  
**ODD\*110** Ophthalmic Materials I

**SOC\*120** Group Dynamics  
**VET\*102** Veterinary Office Management & Communication  
**VET\*280** Veterinary Technician Externship I  
**VET\*286** Veterinary Technician Externship II

# QUANTITATIVE REASONING

**Quantitative Reasoning** courses are designed so that 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.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Quantitative Reasoning general education core competency by being able to:

- Represent mathematical, and quantitative information symbolically, graphically, numerically, and verbally.
- Apply quantitative methods to investigate routine and novel problems. This includes calculations/procedures, mathematical and/or statistical modeling, prediction, and evaluation.
- Interpret mathematical and quantitative information and draw logical inferences from representations such as formulas, equations, graphs, tables, and schematics.
- Evaluate the results obtained from quantitative methods for accuracy and/or reasonableness.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-quantitative.pdf](http://www.ct.edu/files/pdfs/tap-outcome-quantitative.pdf)

## 2019-20 COURSE LIST – TRANSFER-ORIENTED PROGRAMS AND CSCU TRANSFER TICKETS

The following Middlesex Community College courses are designated as fulfilling the Quantitative Reasoning general education core competency.

**EGR\*250** Computational Methods for Engineering

**HIM\*230** Healthcare Statistics and Data Analysis

**MAT\*146** Math for the Liberal Arts

**MAT\*158** Graphs, Functions, and Matrices

**MAT\*167** Principles of Statistics

**MAT\*173** College Algebra with Technology

**MAT\*186** Precalculus

**MAT\*210** Discrete Mathematics

**MAT\*254** Calculus I

**MAT\*256** Calculus II

**MAT\*268** Calculus III: Multivariable

**MAT\*272** Linear Algebra

**MAT\*285** Differential Equations

## CHEMISTRY AND ENGINEERING

ADDITIONAL QUANTITATIVE REASONING COURSES FOR STUDENTS WHO TOOK CERTAIN CHE\* AND EGR\* COURSES PRIOR TO THE FALL 2017 SEMESTER

The following Middlesex Community College courses in Chemistry and Engineering are Program Requirements in various majors. They were previously designated as fulfilling the Quantitative Reasoning general education core competency. Students matriculating in 2017-18 and later may not use these courses to fulfill the Quantitative Reasoning general education core competency.

**CHE\*121** General Chemistry I

**CHE\*122** General Chemistry II

**CHE\*250** Instrumental Analysis

**EGR\*111** Introduction to Engineering

**EGR\*211** Applied Mechanics I (Statics)

**EGR\*212** Applied Mechanics II (Dynamics)

**EGR\*214** Engineering Thermodynamics

**EGR\*221** Introduction to Electric Circuit Analysis

# SCIENTIFIC KNOWLEDGE & UNDERSTANDING

**Scientific Knowledge & Understanding** courses are designed so that 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.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Scientific Knowledge & Understanding general education core competency by being able to:

- Communicate using appropriate scientific terminology.
- Use representations and models to communicate scientific knowledge and solve scientific problems.
- Plan and implement data collection strategies appropriate to a particular scientific question.
- Articulate the reasons that scientific explanations and theories are refined or replaced.
- Evaluate the quality of scientific information on the basis of its source and the methods used to generate it.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-knowledge.pdf](http://www.ct.edu/files/pdfs/tap-outcome-knowledge.pdf)

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Scientific Knowledge & Understanding general education core competency.

**AST\*101** Principles of Astronomy

**BIO\*105** Introduction to Biology

**BIO\*110** Principles of the Human Body

**BIO\*111** Introduction to Nutrition

**BIO\*115** Human Biology

**BIO\*121** General Biology I

**BIO\*122** General Biology II

**BIO\*173** Introduction to Ecology

**BIO\*211** Human Anatomy and Physiology I

**BIO\*212** Human Anatomy and Physiology II

**BIO\*235** Microbiology

**BIO\*263** Molecular Genetics

**CHE\*101** Introductory Chemistry

**CHE\*111** Concepts of Chemistry

**CHE\*112** Principles of Organic and Biochemistry

**CHE\*121** General Chemistry I

**CHE\*122** General Chemistry II

**CHE\*220** Biochemistry

**CHE\*250** Instrumental Analysis

**EAS\*102** Earth Science

**EAS\*106** Natural Disasters

**EAS\*107** Earth Resources

**EGR\*111** Introduction to Engineering

**EGR\*211** Applied Mechanics I (Statics)

**EGR\*212** Applied Mechanics II (Dynamics)

**EGR\*214** Engineering Thermodynamics

**EGR\*221** Introduction to Electric Circuit Analysis

**EVS\*100** Introduction to Environmental Science

**EVS\*111** Environmental Science Laboratory

**GLG\*120** Dynamic Earth

**RAD\*200** Radiologic Physics & Diagnostic Imaging Modalities

**RAD\*206** Quality Assurance

**RAD\*219** Radiographic Equipment and Image Production

**SCI\*103** Recent Discoveries in Science

**SCI\*114** Survey of Science *Effective Spring 2020*

**SCI\*285** Forensic Science with Lab

**VET\*100** Introduction to Animal Care

**VET\*101** Introduction to Veterinary Technology

**VET\*102** Veterinary Office Management & Communication

**VET\*151** Small Animal Veterinary Technology with Lab

**VET\*152** Large Animal Veterinary Technology with Lab

**VET\*201** Veterinary Anatomy and Physiology I with Lab

**VET\*202** Veterinary Anatomy and Physiology II with Lab

**VET\*206** Veterinary Laboratory Procedures

**VET\*212** Principles of Imaging with Lab

**VET\*220** Animal Pathology

**VET\*230** Veterinary Anesthesia and Surgical Nursing with Lab

**VET\*238** Parasitology

**VET\*240** Periodontology and Oral Radiology

**VET\*250** Principles of Pharmacology for Vet Tech

**VET\*280** Veterinary Technician Externship I

**VET\*286** Veterinary Technician Externship II



# SCIENTIFIC REASONING

**Scientific Reasoning** courses are designed so that students will 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.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Scientific Reasoning general education core competency by being able to:

- Explain the methods of scientific inquiry that lead to the acquisition of knowledge. Such methods include observations, testable hypotheses, logical inferences, experimental design, data acquisition, interpretation, and reproducible outcomes.
- Apply scientific methods to investigate real-world phenomena, and routine and novel problems. This includes data acquisition and evaluation, and prediction.
- Represent scientific data symbolically, graphically, numerically, and verbally.
- Interpret scientific information and draw logical inferences from representations such as formulas, equations, graphs, tables, and schematics.
- Evaluate the results obtained from scientific methods for accuracy and/or reasonableness.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-scientific.pdf](http://www.ct.edu/files/pdfs/tap-outcome-scientific.pdf)

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Scientific Reasoning general education core competency.

**BIO\*105** Introduction to Biology  
**BIO\*109** Principles of Biotechnology  
**BIO\*115** Human Biology  
**BIO\*121** General Biology I  
**BIO\*122** General Biology II  
**BIO\*173** Introduction to Ecology  
**BIO\*211** Human Anatomy and Physiology I  
**BIO\*212** Human Anatomy and Physiology II  
**BIO\*235** Microbiology  
**BIO\*263** Molecular Genetics  
**CAT\*201/MRI\*201** Cross Sectional Anatomy I  
**CHE\*101** Introductory Chemistry Effective Spring 2020  
**CHE\*111** Concepts of Chemistry  
**CHE\*112** Principles of Organic and Biochemistry  
**CHE\*121** General Chemistry I  
**CHE\*122** General Chemistry II  
**CHE\*220** Biochemistry  
**CHE\*250** Instrumental Analysis  
**CSC\*105** Programming Logic  
**CSC\*220** Object Oriented Programming Using JAVA  
**CST\*141** Computer Hardware  
**EGR\*111** Introduction to Engineering  
**EGR\*211** Applied Mechanics I (Statics)

**EGR\*212** Applied Mechanics II (Dynamics)  
**EGR\*214** Engineering Thermodynamics  
**EGR\*221** Introduction to Electric Circuit Analysis  
**GLG\*120** Dynamic Earth  
**HLT\*160/SOC\*160** Introduction to Public Health  
**MAM\*202** Mammography Clinical Experience  
**MAT\*167** Principles of Statistics  
**PHY\*110** Introductory Physics  
**PHY\*121** General Physics I  
**PHY\*122** General Physics II  
**PHY\*221** Calculus-Based Physics I  
**PHY\*222** Calculus-Based Physics II  
**PSY\*111** General Psychology I  
**PSY\*240** Social Psychology  
**RAD\*200** Radiologic Physics & Diagnostic Imaging Modalities  
**RAD\*206** Quality Assurance  
**RAD\*219** Radiographic Equipment and Image Production  
**SCI\*114** Survey of Science Effective Spring 2020  
**SCI\*285** Forensic Science with Lab  
**SOC\*240** Criminology

## HIM\*205 AND HIM\* 206 (HEALTH INFORMATION MANAGEMENT) COURSES

Additional scientific reasoning courses for students who took these courses prior to the fall 2017 semester. These two courses were previously designated as fulfilling the Scientific Reasoning general education core competency. Students matriculating in 2017-18 and later may not use these courses to fulfill the Scientific Reasoning general education core competency.

**HIM\*205** Medical Coding  
**HIM\*206** Medical Coding 2

# SOCIAL PHENOMENA

**Social Phenomena** courses are designed so that students will develop an increased understanding of the influences that shape a person's, or group's 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.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Social Phenomena general education core competency by being able to:

- Explain social, organizational, political, economic, historical, or cultural elements that influence and are influenced by individuals and groups.
- Explain theories and research methods used to investigate social phenomena.
- Explain ethical issues pertaining to social contexts and phenomena.
- Explain issues of diversity within and across cultures.
- Apply concepts or theories of social phenomena to real world situations (e.g., service learning, group work, clubs, organizations, civic engagement, conflict resolution and internships).

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-social.pdf](http://www.ct.edu/files/pdfs/tap-outcome-social.pdf)

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Social Phenomena general education core competency

<b>ANT*101</b> Introduction to Anthropology	<b>POL*103</b> Introduction to International Relations
<b>ANT*205</b> Cultural Anthropology	<b>POL*111</b> American Government
<b>CJS*101</b> Introduction to Criminal Justice	<b>POL*112</b> State and Local Government
<b>CJS*102</b> Introduction to Corrections	<b>POL*293</b> Connecticut Legislative Internship
<b>CJS*105</b> Introduction to Law Enforcement	<b>PSY*111</b> General Psychology
<b>CJS*106</b> Introduction to Homeland Security	<b>PSY*201</b> Life Span Development
<b>CJS*220</b> Criminal Investigation	<b>PSY*204</b> Child and Adolescent Development
<b>CJS*250</b> Police Organization and Management	<b>PSY*240</b> Social Psychology
<b>CJS*255</b> Ethical Issues in Criminal Justice Leadership	<b>PSY*243</b> Theories of Personality <i>Effective Spring 2020</i>
<b>CJS*288</b> Careers in Criminal Justice	<b>PSY*245</b> Abnormal Psychology
<b>CJS*290</b> Practicum in Criminal Justice	<b>RAD*109</b> Methods of Patient Care I
<b>CJS*294</b> Contemporary Issues in Criminal Justice	<b>RAD*209</b> Methods of Patient Care II
<b>COM*101</b> Introduction to Mass Communication	<b>RAD*271</b> Advanced Clinical Internship
<b>COM*120</b> Social Media	<b>SOC*101</b> Principles of Sociology
<b>COM*125 / DGA*125</b> New Media Production	<b>SOC*103</b> Social Problems
<b>ECN*101</b> Principles of Macroeconomics	<b>SOC*117</b> Minorities in the U.S.
<b>ECN*102</b> Principles of Microeconomics	<b>SOC*120</b> Group Dynamics
<b>ECN*220</b> International Economics	<b>SOC*190</b> Self and Others: Dynamics of Diversity
<b>FRE*101</b> Elementary French I <i>Effective Spring 2020</i>	<b>SOC*210</b> Sociology of the Family
<b>FRE*102</b> Elementary French II <i>Effective Spring 2020</i>	<b>SOC*213</b> Human Sexuality
<b>FRE*201</b> Intermediate French I <i>Effective Spring 2020</i>	<b>SOC*221</b> Social Inequality
<b>FRE*202</b> Intermediate French II <i>Effective Spring 2020</i>	<b>SOC*240</b> Criminology
<b>GEO*101</b> Introduction to Geography	<b>SOC*241</b> Juvenile Delinquency
<b>HLT*160/SOC*160</b> Introduction to Public Health	<b>SOC*277</b> Social Survey Research
<b>HSE*101</b> Introduction to Human Services	<b>SPA*101</b> Elementary Spanish I
<b>ITA*101</b> Elementary Italian I <i>Effective Spring 2020</i>	<b>SPA*102</b> Elementary Spanish II <i>Effective Spring 2020</i>
<b>ITA*102</b> Elementary Italian II <i>Effective Spring 2020</i>	<b>SPA*201</b> Intermediate Spanish I
<b>ITA*201</b> Intermediate Italian <i>Effective Spring 2020</i>	<b>SPA*202</b> Intermediate Spanish II <i>Effective Spring 2020</i>
<b>POL*102</b> Introduction to Comparative Politics	

# WRITTEN COMMUNICATION IN ENGLISH

**Written Communication in English** courses are designed so that students will be prepared to develop written texts of varying lengths and styles that communicate effectively and appropriately across a variety of settings.

## LEARNING OUTCOMES

Students will demonstrate mastery of the Written Communication in English general education core competency by being able to:

- **Respond to Rhetorical Situations**
  - Identify and evaluate the specific audience and purpose in different writing situations, and adapt their writing appropriately to those situations.
  - Develop effective prose that influences attitudes, beliefs, and actions through appropriate logical, ethical, and emotional appeals.
- **Use Sources**
  - Locate and evaluate sources appropriate to the rhetorical situation
  - Read, comprehend, and summarize an argument from a complex piece of writing.
  - Analyze, evaluate, and respond to an argument from a complex piece of writing.
  - Summarize, paraphrase, and quote accurately the ideas of others, clearly differentiating them from the students' own ideas.
  - Synthesize and integrate others' ideas purposefully and ethically, with correct and appropriate documentation.
- **Craft Logical Arguments**
  - Generate a controlling idea or thesis.
  - Provide clear and logical evidence, support, or illustration for their assertions.
  - Choose appropriate and effective organizing methods, employing effective transitions and signposts.
  - Write a focused and sustained argument of at least 1500 words that demonstrates all of the written communication outcomes.
- **Apply Language Conventions**
  - Use diction, tone, and level of formality appropriate to audience, purpose, and situation.
  - Apply the conventions of Standard English grammar, spelling, and mechanics.
- **Formulate Effective Writing Strategies**
  - Develop flexible strategies for generating, revising, editing, and proofreading their writing.
  - Reflect on and explain the effectiveness of their writing choices regarding the audience, purpose, and situation.

## ASSESSMENT

Basic Assessment Rubric: [www.ct.edu/files/pdfs/tap-outcome-written.pdf](http://www.ct.edu/files/pdfs/tap-outcome-written.pdf)

## 2019-20 COURSE LIST

The following Middlesex Community College courses are designated as fulfilling the Written Communication general education core competency. (For full course descriptions, hover over the "Numbers" below.)

**CJS\*290** Practicum in Criminal Justice

**ENG\*101** Composition

**ENG\*101E** Composition (Embedded)

**ENG\*102** Literature and Composition

**ENG\*200** Advanced Composition

**ENG\*202** Technical Writing

**ENG\*210** Fiction

**ENG\*211** Short Story

**ENG\*213** Poetry

**ENG\*214** Drama

**ENG\*218** Autobiography

**ENG\*220** Studies in American Literature

**ENG\*221** American Literature I

**ENG\*222** American Literature II

**ENG\*231** British Literature I

**ENG\*232** British Literature II

**ENG\*233** Shakespeare I

**ENG\*234** Shakespeare II

**ENG\*241** World Literature I

**ENG\*242** World Literature II

**ENG\*262** Women in Literature

**ENG\*291** Mythology

**ENG\*298** Special Topics in English

# ACCOUNTING ASSOCIATE DEGREE

## *Business & Hospitality*

---

**Program Coordinator:** Associate Professor Susan Lugli

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5840

**Email:** [slugli@mxcc.edu](mailto:slugli@mxcc.edu)

### DESCRIPTION

This program is designed to serve both the student who wishes to acquire the requisite skills to pursue a career in accounting upon graduation or improve present skills, and for the student who wishes to transfer to a four-year college. Students intending to transfer should meet with the Coordinator of the Accounting program for advising.

### LEARNING OUTCOMES

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

- Organize, analyze, and interpret numerical data through knowledge and comprehension of accounting concepts and principles.
- Identify, gather, measure summarize, verify, analyze, and interpret useful financial and non-financial data.
- Identify and solve unstructured problems in unfamiliar setting and exercise judgment based on facts.
- Communicate through development of proficiency in oral/written/electronic communication skills and the development of the ability to explain financial data to others.
- Demonstrate leadership skill through the development of the ability to work collaboratively with a diverse team, including organization, control, and assessment of group-based work, and provide leadership when appropriate.
- Apply current technology including the ability to use spreadsheet software to analyze business problems, communicate using work processing and presentation software, develop accounting information using general ledger software, access information via internet, and understand information integrity and security issues.
- Develop a professional orientation through awareness of legal, regulatory, and ethical issues facing the profession, awareness of global financial practices, and understanding the methods for creating and managing change in organizations.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).



## ACCOUNTING

Associate in Science Degree  
Transfer-Oriented Program

This program is a Transfer-Oriented Degree that is intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate courses to ensure seamless transfer to your intended transfer institution.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
Program Requirement	ACC*113: Principles of Financial Accounting	3		
Program Requirement	BMG*202: Principles of Management	3		
<b>Gen Ed: Social Phenomena (1 of 2)</b>	ECN*102: Microeconomics	3		
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	<b>Choose one Computer Course Elective from:</b> <ul style="list-style-type: none"> <li>• CSC*101: Intro to Computers</li> <li>• CSA*135: Spreadsheet Applications</li> <li>• CSA*140: Database Applications</li> <li>• CST*201: Intro to Management Information Systems</li> </ul>	3		
<b>Second Semester (Spring) – 15 credits</b>				
Program Requirement	ACC*117: Principles of Managerial Accounting	3		
Program Requirement	BMK*201: Principles of Marketing	3		
<b>Gen Ed: Social Phenomena (2 of 2)</b>	ECN*101: Macroeconomics	3		
<b>Gen Ed: Historical Knowledge</b>		3		
<b>Gen Ed: Written Communication</b>		3		
<b>Third Semester (Fall) – 15 credits</b>				
Program Requirement	ACC*271: Intermediate Accounting I	3		
<b>Gen Ed: Oral Communication</b>	BMG*204: Managerial Communications	3		
<b>Gen Ed: Scientific Reasoning *</b>	PSY*111: General Psychology I	3		
<b>Gen Ed: Aesthetic Dimensions</b>		3		
Program Requirement	ACC*125: Accounting Computer Applications I	3		
<b>Fourth Semester (Spring) – 16 credits</b>				
Program Requirement	ACC*272: Intermediate Accounting II	3		
Program Requirement	BBG*231: Business Law I <b>OR</b> BBG*234: Legal Environment of Business	3		
Program Requirement	BFN*201: Principles of Finance <b>OR</b> CSA*135: Spreadsheet Applications	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*167: Elementary Statistics	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding WITH LAB</b>		4		
<b>TOTAL CREDITS</b>		<b>61</b>		

# ACCOUNTING ASSISTANT CERTIFICATE

## *Business & Hospitality*

**Program Coordinator:** Associate Professor Susan Lugli

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5840

**Email:** slugli@mxcc.edu

### DESCRIPTION

This ten-course, 30-credit certificate program provides individuals with the skills necessary to be employed in the accounting field at positions of full charge bookkeepers or accounting assistants. Courses from the Accounting Assistant Certificate will transfer to the Accounting Associate Degree.

Requirements	Cr	Semester Taken	Grade
ACC* 113: Principles of Financial Accounting	3		
ACC* 117: Principles of Managerial Accounting	3		
ACC* 271: Intermediate Accounting I	3		
ACC* 272: Intermediate Accounting II	3		
BMG* 202: Principles of Management	3		
BMG* 204: Managerial Communications	3		
CSA* 135: Spreadsheet Applications	3		
Computer Course Elective: CSC* 101, CSA* 140 or CST* 201	3		
ENG* 101: Composition	3		
ACC* 125 Accounting Computer Applications I	3		
<b>TOTAL CREDITS</b>	<b>30</b>		

# ACCOUNTING TECHNICIAN CERTIFICATE

## *Business & Hospitality*

---

**Program Coordinator:** Associate Professor Susan Lugli

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5840

**Email:** slugli@mxcc.edu

### DESCRIPTION

This seven-course, 21-credit certificate program is designed for specific training in accounting and other business subjects for entry level positions in the accounting field as an accounting clerk, payroll clerk, or entry level bookkeeper. Courses from the Accounting Technician Certificate will transfer to the Accounting Associate Degree.

Requirements	Cr	Semester Taken	Grade
ACC* 100 Basic Accounting OR ACC*113 Principles of Financial Accounting	3		
ACC*113 Principles of Financial Accounting OR ACC*117 Principles of Managerial Accounting	3		
ACC*125: Accounting Computer Applications I	3		
BBG*294 Business Internship or BBG* 295: Co-op Work Experience 1	3		
Computer Course Elective: CSC* 101, CSA* 140 or CST* 201	3		
CSA* 135: Spreadsheet Applications	3		
BBG*115: Business Software Application	3		
<b>TOTAL CREDITS</b>	<b>21</b>		

# ART STUDIES ASSOCIATE DEGREE

## Humanities and Creative Arts

**Program Coordinator:** Professor Judith DeGraffenried

**Office Location:** Snow Hall, Room 407

**Telephone:** (860) 343-5871

**Email:** [jdegraffenried@mxcc.edu](mailto:jdegraffenried@mxcc.edu)

This program is a CSCU TAP Transfer Ticket Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Additional Gen Ed: Creativity</b>	ART*111: Drawing I	3		
<b>Gen Ed: Social Phenomena (1 of 2)</b>		3		
<b>Gen Ed: Aesthetic Dimensions</b>		3		
Unrestricted Elective		3		
<b>Second Semester (Spring) – 15-17 credits</b>				
Program Requirement	ART*101: Art History I	3		
<b>Gen Ed: Written Communication</b>		3		
<b>Gen Ed: Quantitative Reasoning</b>		3-4		
<b>Gen Ed: Scientific Reasoning *</b>		3-4		
Program Requirement	ART*121: 2-D Design	3		
<b>Third Semester (Fall) – 15- 16 credits</b>				
<b>Gen Ed: Scientific Knowledge &amp; Understanding*</b>		3-4		
<b>Gen Ed: Social Phenomena (2 of 2)</b>		3		
Program Requirement	ART*102: Art History II	3		
Program Requirement	ART*122: 3-D Design	3		
Unrestricted Elective		3		
<b>Fourth Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Oral Communication</b>		3		
<b>Gen Ed: Historical Knowledge</b>		3		
Program Requirement	Select 3 courses, with no more than one course from each group 1-7: 1. ART*112: Drawing II 2. ART*109: Color Theory OR ART*253: Oil Painting I 3. ART*167: Printmaking I 4. ART*131: Sculpture I OR ART*163: Ceramic Handbuilding 5. GRA*150: Intro to Graphic Design 6. ART*250: Digital Photography 7. Unrestricted Elective	9		
<b>TOTAL CREDITS</b>		<b>61</b>		
*Note: You must Complete One science course that includes a laboratory. It can be in either the Scientific Reasoning or Scientific Knowledge category				
** Unrestricted Elective: Any course numbered 100 or above				

# AUDIO & MUSIC PRODUCTION CERTIFICATE

## *Humanities and Creative Arts*

**Program Advisor:** Professor Rich Lenoce  
**Office Location:** Chapman Hall, Room 606  
**Telephone:** (860) 343-5796  
**Email:** [rlenoce@mxcc.edu](mailto:rlenoce@mxcc.edu)

### DESCRIPTION

Audio and Music Production is a career-oriented certificate program designed to prepare students to work in various types of audio-related positions in music recording and media. Students can specialize in either music production or audio production for media, with some overlap between these two areas. The program emphasizes hands-on training using professional-level, state-of-the-art, digital audio technology and software with some required coursework in music. While not designed as a transfer program, the curriculum includes several courses modeled after those offered by similar bachelor degree programs and should allow for easy transfer to these types of programs. MxCC's new audio recording and post-production studios and labs are Pro Tools based and will allow students to learn the advanced-level skills necessary to be competent professional audio technicians.

This certificate is a 30-credit certificate program intended as a stackable credential for students looking to specialize in audio and music recording and production. When enrolling in this program as a standalone occupational certificate, it is recommended that students entering the program either have an associate degree or higher or are enrolled in the Digital Media Production Associate degree program to improve employability upon graduation.

As the certificate is comprised entirely of courses within MxCC's Digital Media Production A.S. degree, students may switch to pursue the full degree instead of or in addition to the certificate with no penalties.

Requirements			
Course	CR	Semester Taken	Grade
COM*131 – Audio Production	3		
MUS*111 - Fundamentals of Music	3		
MUS*117 – Electronic Music	3		
MUS*219 – Electronic Music Composition/Audio Technology II	3		
MUS*237 – Principles of Music Recording	3		
MUS*238 – Adv. Music Mixing & Processing	3		
Music Studies Elective - MUS*101 <b>or</b> MUS*104 <b>or</b> MUS*137 <b>or</b> MUS*138	3		
COM *287 Advanced Media Production or COM*295 Internship	3		
MUS*/COM*/DGA* Electives	3		
Open Elective	3		
<b>Total Credits</b>	<b>30</b>		

# BIOCHEMISTRY STUDIES

## ASSOCIATE DEGREE

### STEM (Science, Technology, Engineering, Math)

Program Coordinator: Dr. Frank Stellabotte

Office Location: Wheaton Hall, Room 209

Telephone: (860) 343-5747

Email: [fstellabotte@mxcc.edu](mailto:fstellabotte@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 14 credits				
Gen Ed: Written Communication	LNG*101 (or LNG*101L): Composition	3		
Gen Ed: Quantitative Reasoning	MAT*186 Pre-Calculus	4		
Gen Ed: Scientific Reasoning	CHL*121: General Chemistry I	4		
Gen Ed: Aesthetic Dimensions		3		
Second Semester (Spring) – 15 credits				
Gen Ed: Written Communication II		3		
Gen Ed: Scientific Knowledge & Understanding	CHL*122: General Chemistry II	4		
Program Requirement	BIO*121: General Biology I	4		
Program Requirement	MAT*254: Calculus I	4		
Third Semester (Fall) – 15 credits				
Program Requirement	CHF*211: Organic Chemistry I*	4		
Gen Ed: Social Phenomena		3		
Program Requirement	PHY*221: Calculus-based Physics I	4		
Program Requirement	BIO*225: Microbiology	4		
Fourth Semester (Spring) – 16 credits				
Program Requirement	CHF*212: Organic Chemistry II*	4		
Gen Ed: Continuing Learning & Information Literacy		3		
Gen Ed: Historical Knowledge		3		
Gen Ed: Oral Communication		3		
Unrestricted Elective**		3		
TOTAL CREDITS		60		
<p>*These courses are not offered at MxCC. In order to complete them you will need to take them at another institution. Ask your advisor for help registering for these courses.</p> <p>**You are free to choose any course at or above 100-level but either of the following are recommended: BIO*122 or PHY*222 as these courses are required at certain four year universities.</p>				



# BIOLOGY STUDIES ASSOCIATE DEGREE

## STEM (Science, Technology, Engineering, Math)

**Program Coordinator:** Dr. Frank Stellabotte

**Office Location:** Wheaton Hall, Room 209

**Telephone:** (860) 343-5747

**Email:** fstellabotte@mxcc.edu

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*186: Pre-Calculus	4		
<b>Gen Ed: Scientific Reasoning</b>	BIO*121: General Biology I	4		
<b>Gen Ed: Scientific Knowledge</b>	CHE*121: General Chemistry I	4		
<b>Second Semester (Spring) –14- 15 credits</b>				
Program Requirement	BIO*122: General Biology II	4		
Program Requirement	CHE*122: General Chemistry II	4		
Program Requirement	Choose one of the following: <ul style="list-style-type: none"> <li>MAT 254: Calculus I</li> <li>Creativity</li> <li>Global Knowledge</li> </ul>	3-4		
<b>Gen Ed: Written Communication II</b>		3		
<b>Third Semester (Fall) – 14 credits</b>				
Program Requirement	Choose one of the following: <ul style="list-style-type: none"> <li>BIO*211: Anatomy and Physiology I</li> <li>BIO*222: Molecular Biotechniques</li> <li>BIO*235: Microbiology</li> <li>BIO*263: Molecular Genetics</li> <li>BIO*270: Ecology</li> </ul>	4		
Program Requirement	PHY*121: General Physics I	4		
<b>Gen Ed: Social Phenomena I</b>		3		
<b>Gen Ed: Aesthetic Dimension</b>		3		
<b>Fourth Semester (Spring) – 17 credits</b>				
<b>Gen Ed: Oral Communication</b>		3		
<b>Gen Ed: Historical Knowledge</b>		3		
<b>Gen Ed: Social Phenomena II</b>		3		
Program Requirement	Choose one of the following: <ul style="list-style-type: none"> <li>BIO*211: Anatomy and Physiology I</li> <li>BIO*212: Anatomy and Physiology II</li> <li>BIO*222: Molecular Biotechniques</li> <li>BIO*235: Microbiology</li> <li>BIO*263: Molecular Genetics</li> <li>BIO*270: Ecology</li> </ul>	4		
Program Requirement	PHY*122: General Physics II	4		
<b>TOTAL CREDITS</b>		<b>60-61</b>		

# BIOTECHNOLOGY ASSOCIATE DEGREE

## ***STEM (Science, Technology, Engineering, Math)***

---

**Program Coordinator:** Dr. Frank Stellabotte

**Office Location:** Wheaton Hall, Room 209

**Telephone:** (860) 343-5747

**Email:** [fstellabotte@mxcc.edu](mailto:fstellabotte@mxcc.edu)

### **DESCRIPTION**

The Biotechnology degree program is designed for students who wish to enter the field of scientific research or who wish to transfer to a four-year program in biology, chemistry or a related field. The program will provide students with skills and knowledge necessary to work in the biotechnology, pharmaceutical, or basic research fields. This program will also provide the majority of the freshman and sophomore level coursework required of biology majors at most four-year institutions. Students may be either full-time or part-time. This program is appropriate for the traditional or nontraditional student. Graduates of the program will be able to find employment in a variety of research settings, including the biotechnology and pharmaceutical industries, private and university research laboratories and State run labs. Graduates are well prepared to continue their education in a biology related field immediately after graduation, or later in their careers.

### **LEARNING OUTCOMES**

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

- Conduct themselves as lab technicians in a biotechnology laboratory with the basic skills and knowledge required to function effectively in a research setting.
- Demonstrate proficiencies in both basic and advanced principles of chemistry and biology that are required by a person working as a lab technician or planning to enter into a four-year college science program.
- Explain the basic principles of genetics, molecular biology, cell biology, chemistry, biochemistry, and microbiology.
- Employ sterile technique in the handling of microbial cultures with knowledge of what is safe and what is hazardous.
- Prepare solutions and perform accurate measurements using precision instruments such as balances and micropipettors.
- Demonstrate skills in the use of recombinant DNA techniques, PCR, DNA sequence analysis, HPLC, gas chromatography, mass spectroscopy, IR spectroscopy, UV/VIS spectroscopy, as well as the use of the computer to collect and analyze experimental data.
- Recognize the ethical issues that are relevant to the field of biotechnology.

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## BIOTECHNOLOGY

Associate in Science Degree  
Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 13 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Gen Ed: Historical Knowledge</b>	BIO*109: Principles of Biotechnology	3		
Program Requirement	CSC*101: Introduction to Computers <b>OR</b> Higher	3		
Program Requirement	CHE*121: General Chemistry I	4		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Quantitative Reasoning</b>	MAT*167: Principles of Statistics	3		
<b>Gen Ed: Scientific Knowledge OR Scientific Reasoning</b>	BIO*121: General Biology I	4		
Program Requirement	CHE*122: General Chemistry II	4		
Program Requirement	MAT*173: College Algebra <b>OR</b> Higher	4		
<b>Third Semester (Fall) – 15 credits</b>				
Program Requirement	BIO*222: Molecular Biotechniques	4		
Program Requirement	BIO*235: Microbiology	4		
Program Requirement	BIO*263: Molecular Genetics	4		
<b>Gen Ed: Written Communication</b>	<b>Choose one:</b> COM*173: Public Speaking <b>OR</b> ENG*202: Technical Writing	3		
<b>Fourth Semester (Spring) – 17 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>		3		
<b>Gen Ed: Social Phenomena</b>		3		
Program Requirement	BIO*296: Biotechnology Internship	3		
Program Requirement	CHE*220: Biochemistry	4		
Program Requirement	CHE*250: Instrumental Analysis	4		
<b>TOTAL CREDITS</b>		<b>60</b>		

# BIOTECHNOLOGY CERTIFICATE

## STEM (Science, Technology, Engineering, Math)

**Program Coordinator:** Dr. Frank Stellabotte

**Office Location:** Wheaton Hall, Room 209

**Telephone:** (860) 343-5747

**Email:** [fstellabotte@mxcc.edu](mailto:fstellabotte@mxcc.edu)

### DESCRIPTION

The Biotechnology Certificate is a 22-credit, 6-course program that can be completed in one year for full-time students. This certificate is a stackable credential for students who already possess a related A.S. or B.S. degree from the U.S. or abroad – and who are returning to school for employment and technology-based training. It equips students with necessary skills and knowledge, along with good management practices that focus on quality, sterility, documentation, regulatory compliance, and safety in the laboratory environment. These key qualifications are crucial to working in today's biotechnology field.

This certificate program – which includes an internship – keeps students current with the newest discoveries and advancements in biotechnology. It increases and improves their laboratory techniques skills – from the basics such as solution preparation and micropipetting to more advanced skills including performing bacterial transformations and operating large benchtop equipment such as a High Performance Liquid Chromatograph (HPLC).

As the certificate is comprised entirely of courses within MxCC's Biotechnology A.S. degree, students may switch to pursue the full degree instead of or in addition to the certificate (with no penalties).

### LEARNING OUTCOMES

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

- Conduct themselves as biotechnology lab technicians with the basic skills and knowledge required to function effectively in a research setting.
- Demonstrate proficiencies in both basic and advanced principles of chemistry and biology that are required by a person working as a lab technician or planning to enter into a four-year college science program.
- Explain the basic principles of genetics, molecular biology, cell biology, chemistry, biochemistry, and microbiology.
- Employ sterile technique in the handling of microbial cultures with knowledge of what is safe and what is hazardous.
- Prepare solutions and perform accurate measurements using precision instruments such as balances and micropipettors.
- Demonstrate skills in the use of recombinant DNA techniques, PCR, DNA sequence analysis, HPLC, gas chromatography, mass spectroscopy, IR spectroscopy, UV/VIS spectroscopy, as well as the use of the computer to collect and analyze experimental data.
- Recognize the ethical issues that are relevant to the field of biotechnology.

Requirements	Cr	Semester Taken	Grade
BIO* 109: Principles of Biotechnology	3		
BIO* 222: Molecular Biotechniques	4		
BIO* 235: Microbiology OR BIO* 263: Molecular Genetics	4		
CHE* 112: Principles Organic Chemistry & Biochem. OR CHE* 220: Biochemistry	4		
CHE* 250: Instrumental Analysis	4		
BIO* 296: Biotechnology Internship	3		
<b>TOTAL CREDITS</b>	<b>22</b>		

# BROADCAST COMMUNICATIONS CERTIFICATE

## *Business & Hospitality*

**Program Coordinator:** Professor Richard Lenoce

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5796

**Email:** rlenoce@mxcc.edu

### DESCRIPTION

This certificate program is comprised of 30 credits of directed electives from Communication and Digital Arts courses. This program intended is for those students who have earned a degree in another area of study or are working in the field and looking to obtain additional course work in communications and professional certification. Each student's program is tailored to their career goals and must be developed in consultation with and approved by the Digital Media Production program coordinator.

Requirements	Cr	Semester Taken	Grade
ENG* 101: Composition	3		
MAT* Elective	3-4		
<b>Select 24 credits from the following:</b>			
ART*147 Digital Cinematography OR ART*250 Digital Photography	3		
COM*101 Introduction to Mass Communications	3		
COM*104 Careers in Media	3		
COM*111 Scriptwriting	3		
COM*226 Journalism I	3		
COM*125 New Media Production	3		
COM*131 Audio Production	3		
COM*179 Performance for Film and Television	3		
COM*203 Media Aesthetics	3		
COM*228 Broadcast Journalism Workshop	3		
COM*231 Radio Production	3		
COM*264 Advanced Editing Workshop	3		
COM*287 Advanced Media Production	3		
COM*293 Corporate Media Production Practicum	3		
COM*294 Media Arts Workshop- Honors	3		
COM*295 Internship I	3		
COM*296 Internship II	3		
DGA*110 Computer Graphics	3		
DGA*182 Digital Video	3		
MUS*117 Electronic Music	3		
<b>TOTAL CREDITS</b>	<b>30-31</b>		

# BUSINESS ADMINISTRATION ASSOCIATE DEGREE

## ***Business & Hospitality***

---

**Program Coordinator:** Associate Professor Susan Lugli

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5840

**Email:** [slugli@mxcc.edu](mailto:slugli@mxcc.edu)

### **DESCRIPTION**

This program is designed to prepare students for exciting and dynamic career opportunities in the 21st century. It is designed to qualify students for entry level managerial and administrative positions or transfer to a four-year institution. With proper advising, students have successfully transferred with a maximum of earned college credit. Before registering, it is the student's responsibility to seek advising with a Business Administration faculty advisor or counselor.

### **LEARNING OUTCOMES**

- Upon successful completion of all program requirements, graduates will be able to:
- Analyze principles, techniques and major functions of management and business organizations
- Work independently and with others of diverse backgrounds
- Rationalize and present solutions to problems using business knowledge and knowledge from humanities, social sciences, mathematics and science disciplines
- Develop a sound ethical, philosophical and moral skill-set necessary to success in business
- Demonstrate a responsible attitude in relationships with employers and peers
- Demonstrate proficiencies in reading, writing, listening, presentation and analytical skills
- Prepare and interpret financial statements and use accounting for managerial decisions
- Understand and discuss financial issues dealing with the external environment and the market
- Understand the U.S. legal system and be able to apply the principles to the legal environment in which organizations conduct business
- Understand marketing principles and methods as they apply to satisfying consumers and society as a whole
- Demonstrate computer proficiency in word processing, electronic spreadsheet, database management, general ledger accounting systems and presentation software
- Demonstrate an understanding of how the American economic system is organized, how it functions and how it impacts the global economy

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).



## BUSINESS ADMINISTRATION

Associate in Science Degree  
Transfer-Oriented Program

This program is a Transfer-Oriented Degree intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate courses for seamless transfer.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Gen Ed: Social Phenomena (1 of 2)	ECN*102: Microeconomics	3		
Program Requirement	ACC*113: Principles of Financial Accounting	3		
Program Requirement	BMG*202: Principles of Management	3		
Unrestricted Elective (or MAT*137 or MAT*137E, Intermediate Algebra, if student placement requires this course)		3		
Second Semester (Spring) – 15-16 credits				
Program Requirement	ACC*117: Principles of Managerial Accounting	3		
Gen Ed: Oral Communication	BBG*115: Business Software Applications	3		
Program Requirement	BMK*201: Principles of Marketing	3		
Gen Ed: Social Phenomena (2 of 2)	ECN*101: Macroeconomics	3		
Gen Ed: Scientific Knowledge & Understanding		3(4)		
Third Semester (Fall) – 15-16 credits				
Program Requirement	BBG*231: Business Law I OR BBG*234: Legal Environment of Business	3		
Gen Ed: Written Communication II	ENG*102: Literature & Composition	3		
Gen Ed: Aesthetic Dimensions		3		
Gen Ed: Scientific Reasoning		3(4)		
Directed Business Elective (see choices below)	Note: If you are planning to attend Central Connecticut State University, you should take MAT*158, Functions, Graphs & Matrices	3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	BMG*204: Managerial Communications	3		
Program Requirement	CST*201: Intro to Management Information Systems	3		
Directed Business Elective (see choices below)	Note: BFN*201, Principles of Finance, is recommended for students wishing to transfer to a University business program	3		
Gen Ed: Quantitative Reasoning	MAT*167: Elementary Statistics	3		
Gen Ed: Historical Knowledge		3		
TOTAL CREDITS		60-62		
<i>*Note: You must Complete One science course that includes a laboratory. It can be in either the Scientific Reasoning or Scientific Knowledge category</i>				
<b>Directed Business Electives:</b> BBG*234, Legal Environment of Business, BBG*295, Cooperative Work Experience, BFN*201, Principles of Finance, BMG*220, Human Resource Management, BBG*294, Business Internship, BES*118, Small Business Management, BMG*210, Principles of Organizational Behavior, MAT*158, Functions, Graphs, and Matrices				

# BUSINESS SKILLS CERTIFICATE

## *Humanities & Creative Arts*

**Program Coordinator:** Associate Professor Susan Lugli

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5840

**Email:** slugli@mxcc.edu

### DESCRIPTION

This ten-course, 30-credit certificate program is designed to give students not majoring in business sufficient basic business skills to be able to function adequately at a rudimentary level in a workplace environment immediately upon completion. This certificate is comprised of courses designed to provide students with a basic understanding of business in society, basic technology skills, communication skills (both oral and written), and math skills. The certificate is tailored to meet individual student needs and interests by incorporating business elective courses. Students are encouraged to develop their individual areas of interest or maximize employment opportunities by choosing a specific elective option. Students deciding to continue on for an Associate in Science degree will find that all of the courses taken in this certificate program may apply to an Associate of Science in Business Administration, Accounting, or General Studies at Middlesex Community College.

Requirements	Cr	Semester Taken	Grade
ENG* 101: Composition	3		
ECN* 102: Principles of Microeconomics	3		
ECN* 101: Principles of Macroeconomics	3		
ACC* 113: Principles of Financial Accounting	3		
ACC* 117: Principles of Managerial Accounting	3		
CST* 201: Intro to Management Information Systems	3		
BMG* 202: Principles of Management	3		
BMK* 201: Principles of Marketing	3		
BMG* 204: Managerial Communications	3		
BFN* 201: Principles of Finance	3		
<b>TOTAL CREDITS</b>	<b>30</b>		

# BUSINESS STUDIES ASSOCIATE DEGREE

## ***Business & Hospitality***

**Pathway Advisor:** Associate Professor Susan Lugli

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5840

**Email:** slugli@mxcc.edu

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline. A minimum 2.50 cumulative GPA is required for Central Connecticut State University.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Add'l Gen Ed: Global Knowledge</b>	ECN*102: Microeconomics ( <i>See Notes 1, 3</i> )	3		
<b>Program Requirement</b>	ACC*113: Principles of Financial Accounting ( <i>See Notes 2, 3</i> )	3		
<b>Gen Ed: Oral Communication</b>		3		
Unrestricted Elective	<b>Choose one:</b> <ul style="list-style-type: none"> <li>• MAT 137 Intermediate Algebra, if needed to take MAT 158**</li> <li>• MAT 137 Intermediate Algebra, if needed to take MAT 173**</li> <li>• MAT 173 College Algebra, if needed to take MAT 186**</li> <li>• MAT 186 Precalculus, if needed to take MAT 254**</li> <li>• One Unrestricted Elective</li> </ul> <i>**Math prerequisites can increase the number of credits you need to complete this Pathway. Depending on the CSU Business program you transfer into, some of these pre-requisite credits can be absorbed as Unrestricted Electives in the B.A. degree.</i>	3		
<b>Second Semester (Spring) – 15-16 credits</b>				
<b>Gen Ed: Written Communication II</b>				
<b>Gen Ed: Social Phenomena I</b>	ECN*101: Macroeconomics ( <i>See Notes 1, 3</i> )	3		
<b>Program Requirement</b>	ACC*117 Principles of Managerial Accounting ( <i>See Notes 2, 3</i> )	3		
Program Requirement	<b>Choose one:</b> <ul style="list-style-type: none"> <li>• MAT*254 Calculus I (<i>See Notes 1, 3</i>) <i>Meets MAT requirement at CCSU, ECSU, SCSU, and WCSU</i></li> <li>• MAT*158 Functions, Graphs &amp; Matrices (<i>See Notes 1, 3</i>) <i>Meets MAT requirements at CCSU, ECSU, WCSU but not SCSU</i></li> </ul>	3		
<b>Program Requirement</b>	BMK*201: Principles of Marketing ( <i>See Note 2</i> )	3		
<b>Third Semester (Fall) – 15-16 credits</b>				
<b>Gen Ed: Scientific Reasoning</b>	( <i>See note 4</i> )	3-4		
<b>Gen Ed: Historical Knowledge</b>		3		
<b>Program Requirement</b>	BMG*202: Principles of Management ( <i>See Note 2</i> )	3		
<b>Program Requirement</b>	BMG*204: Managerial Communication ( <i>See Note 1</i> )	3		
Program Requirement	<b>Choose One:</b> <ul style="list-style-type: none"> <li>• BBG*231: Business Law (<i>See Note 2</i>)</li> <li>• BBG*234: Legal Environment of Business</li> </ul>			
<b>Fourth Semester (Spring) – 15 credits</b>				
<b>Program Requirement</b>	BFN*201: Principles of Finance ( <i>See Note 2</i> )	3		
<b>Gen Ed: Social Phenomena II</b>		3		
<b>Gen Ed: Aesthetic Dimensions</b>		3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*167: Principles of Statistics ( <i>See Notes 1, 3</i> )	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding</b>	( <i>See note 4</i> )	3-4		
<b>TOTAL CREDITS</b>		<b>61</b>		
<b>Note 1:</b> All courses marked with a 1 must have a C- or above <b>Note 2:</b> All courses marked with a 2 must have a C or above <b>Note 3:</b> The six courses marked with a 3 must have a cumulative 2.5 or above <b>Note 4:</b> At least one Science course must include a Lab component.				

# CERTIFIED NURSE AIDE CERTIFICATE

## ***Health Careers /Non-Credit Certificate***

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website With Complete Info:** [mxcc.edu/ce/courses/cna](http://mxcc.edu/ce/courses/cna)

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

WIOA, SNAP, HCAP, and VA funding eligible. Certified Nurse Aides (CNAs) play a vital role in healthcare delivery by providing routine patient care. Working under the supervision of a nurse, CNAs perform vital patient measurements, including temperatures, pulses, and blood pressures. CNAs have direct patient contact assisting with daily activities, such as, bathing, walking, and eating. The Certified Nurse Aide training program consists of lectures, skills development, and clinical training. Learn the proper way to perform nursing procedures essential to meeting the needs of patients under your care. The program is approved by the Connecticut State Department of Public Health. Note: Convicted felons may have difficulty finding employment in the healthcare industry.

### **PREREQUISITES**

1) High-school diploma or GED, 2) English language competency. An ESL evaluation is strongly recommended. To schedule your evaluation please call the MxCC Academic Success Center at 860-343-5770 and ask for an appointment to take the CNA ESL test. There is no charge. 3) Health Form signed by your physician including immunization information, PPD test for Tuberculosis, and seasonal flu vaccine. 4) Must be at least 18 years of age with valid identification. 5) Artificial nails not permitted. 6) A criminal background check may be required. Students who have a record of felonies or misdemeanors may be denied access to clinical training sites.

### **NEW! ONLINE OPTION**

Our new CNA Hybrid Online program provides an option for students who wish to take advantage of distance learning opportunities. This program is offered in a hybrid format and includes online modules with in-person clinical learning. Students complete six weekly modules of nursing theory that cover all of the same material as in-class CNA courses. Students also complete skills training in our nursing lab and clinical training at a local nursing facility. CNA online classes are supported by the Blackboard Learn course management system. This program is approved by the State Department of Public Health.

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **CT Pathways (SNAP)**– Jennifer Mueller • [jmueller@mxcc.edu](mailto:jmueller@mxcc.edu)
- **HCAP funding** – Omayra Vega • 203-624-1493 ext.216 • [ovega@workforcealliance.biz](mailto:ovega@workforcealliance.biz) or TaMesha Greene • 203-238-3688 ext.307 • [tgreene@workforcealliance.biz](mailto:tgreene@workforcealliance.biz).
- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 • [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)

# CHEMISTRY STUDIES ASSOCIATE DEGREE

## STEM (Science, Technology, Engineering, Math)

**Pathway Advisor:** Assistant Professor James Quinlan

**Office Location:** Wheaton Hall, Room 217

**Telephone:** (860) 343-5773

**Email:** [jquinlan@mxcc.edu](mailto:jquinlan@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 14-15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Gen Ed: Quantitative Reasoning	MAT*254: Calculus I	4		
Gen Ed: Scientific Reasoning	CHE*121: General Chemistry I	4		
Unrestricted Elective	Recommend: PHY*110: Introduction to Physics if haven't taken High School Physics.	3-4		
Second Semester (Spring) – 17 credits				
Gen Ed: Scientific Knowledge	CHE*122: General Chemistry II	4		
Program Requirement	MAT*256: Calculus II	4		
Gen Ed: Historical Knowledge		3		
Gen Ed: Aesthetic Dimensions		3		
Gen Ed: Written Communication II		3		
Third Semester (Fall) – 14 credits				
Program Requirement	CHE*211: Organic Chemistry I (Not offered at MxCC)	4		
Program Requirement	PHY*221: Calculus Based Physics I	4		
Gen Ed: Social Phenomena I		3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 14- 17 credits				
Program Requirement	CHE*212: Organic Chemistry II (Not offered at MxCC)	4		
Program Requirement	PHY*222: Calculus Based Physics II	4		
Gen Ed: Oral Communication		3		
Gen Ed: Social Phenomena II		3		
Unrestricted Elective**		3		
TOTAL CREDITS		61-62		
Unrestricted elective: Any course numbered 100 or higher.				
* Middlesex does not offer CHE*211 or CHE*212, so in order to complete this degree, you will have to take these class at another community college.				
** If you have taken PHY110 or MAT186, you will not need this elective.				

# CHILD DEVELOPMENT ASSOCIATE (CDA) CREDENTIAL CERTIFICATE

## *Social and Behavioral Sciences, Education, and Public Service*

**Program Coordinator:** Assistant Professor Norma Rosado-Javier

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5758

**Email:** [NRosado-Javier@mxcc.edu](mailto:NRosado-Javier@mxcc.edu)

### DESCRIPTION

The Child Development Associate Credential is designed to train individuals who wish to be certified by the Council for Early Childhood Professional Recognition. The CDA is a performance-based assessment of childcare workers, home visitors, center and family childcare providers.

The courses provide students with 120 hours of training for the CDA credentialing program. CDA credits can be transferred to the Early Childhood Certificate and Associate Degree programs. Successful completion of this 12-credit program will enable the candidate to apply for a CDA credential from the Council for Early Childhood Professional Recognition.

CDA trainees are expected to demonstrate the ability to nurture children's physical, social, emotional, and intellectual development. The CDA credential is proof of the childcare provider's competence in all areas of child growth and development.

Students completing the program will be able to find employment in daycare centers, preschool programs, Head Start programs, or similar settings.

Each of the CDA classes runs for 6 weeks if offered for cohort of students through Connecticut-Charts-A-Course agency or other child care Program contract courses.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

### REQUIREMENTS

SEMESTER I: COURSES	CREDITS
<b>ECE*101</b> Intro. to Early Childhood Education	3
<b>ECE*176</b> Health, Safety, & Nutrition (CDA-1)	3
Semester II or Summer: Courses or Summer & Credits	
<b>ECE*180</b> Child Development Credential Preparation Course (CDA-I)	3
and one of the following:	3
<b>ECE*141</b> Infant/Toddler Growth and Development	
<b>ECE*103</b> Creative Arts for Young Children	
<b>TOTAL CREDITS:</b>	<b>12</b>



# COMMUNICATIONS NETWORKING CERTIFICATE

## ***STEM (Science, Technology, Engineering, Math)***

**Program Coordinator:** Professor Donna Hylton

**Office Location:** Snow Hall, Room 512

**Telephone:** (860) 343-5774

**Email:** [dhylton@mxcc.edu](mailto:dhylton@mxcc.edu)

### **DESCRIPTION**

The certificate program will provide students with strong fundamentals in both data networking technologies and telecommunications networking technologies and will demonstrate the students understanding of networking concepts. An emphasis will be placed on CISCO network training in order to prepare students to take the CCNA (CISCO Certified Network Associate) exam. Students completing the program will receive training in Windows Server Administration that prepares them to complete the Microsoft 70-640 certification exam. There is also specialize instruction in computer security that is aligned with the industry-recognized CompTIA Security+ exam. Completing the certificate program will lead to such jobs as help desk staff, network technician, network coordinator. The Networking Certificate program is a 22-credit program; the courses required by this certificate may transfer to the Computer Information Technology Associate degree program at MxCC.

Requirements	Cr	Semester Taken	Grade
CSC* 295: Coop Ed/Work Experience	3		
CST* 120: Introduction to Operating Systems	3		
CST* 141: Computer Hardware	4		
CST* 163: Window Server Administration	3		
CST* 228: Voice and Data Interworking	3		
CST* 231: Data Communication & Networking	3		
CST* 270: Network Security Fundamentals	3		
<b>TOTAL CREDITS</b>	<b>22</b>		

# COMMUNICATION STUDIES ASSOCIATE DEGREE

## *Humanities and Creative Arts*

**Pathway Advisor:** Professor John Shafer

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5811

**Email:** [jshafer@mxcc.edu](mailto:jshafer@mxcc.edu)

This program is a CSCTU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	COM*101: Introduction to Mass Communication	3		
Gen Ed: Historical Knowledge		3		
Gen Ed: Aesthetic Dimensions		3		
Unrestricted Elective		3		
Second Semester (Spring) – 15-16 credits				
Gen Ed: Oral Communication	COM*172: Interpersonal Communication OR COM*173: Public Speaking	3		
Gen Ed: Social Phenomena I		3		
Gen Ed: Quantitative Reasoning		3		
Gen Ed: Scientific Knowledge *		3-4		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Program Requirement	Select One of the following: COM*111: Scriptwriting COM*125: New Media Prod. COM*129: Digital Video Prod. COM*131: Audio Production COM*153: Film Production COM*172: Interpersonal Comm. COM*203: Media Literacy COM*226: Journalism I DGA*101: Intro. to Digital Arts DGA*110: Computer Graphics	3		
Gen Ed: Scientific Reasoning *		3-4		
Gen Ed: Written Communication II		3		
Program Requirement	COM*Elective	3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	COM*Elective	3		
Gen Ed: Social Phenomena II		3		
Additional Gen Ed: Global Knowledge		3		
Additional Gen Ed: Creativity		3		
Unrestricted Elective	COM*Elective	3		
TOTAL CREDITS		60-61		
*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.				
** Unrestricted Elective: Any course numbered 100 or above.				

# COMPUTED TOMOGRAPHY POST-PRIMARY CERTIFICATION

## Health Careers

**Program Coordinator:** Dr. Judy Wallace

**Office Location:** Wheaton Hall, Room 209

**Telephone:** (860) 343-5780

**Email:** [jwallace@mxcc.edu](mailto:jwallace@mxcc.edu)

### DESCRIPTION

Middlesex Community College's Computed Tomography (CT) program is a two-semester, 21-credit program designed to prepare certified Radiographers for immediate employment in the workplace as CT Technicians in hospitals, clinics, and medical offices. The program emphasizes that quality patient care will be provided by individuals who have received instruction based on educational and instructional guidelines consistent with the profession. The program accepts and starts a new class during the fall semester each year.

Following the successful completion of all Program requirements and obligations to the college, students are awarded Certificate in Computed Tomography and may sit for the professional Registry exam sponsored by the American Registry of Radiologic Technologists (ARRT). A minimum score of 75 on the national post-primary certification examination is required for certification as a Computed Tomographer.

Our graduates are allied health professionals who administer ionizing radiation to humans for diagnostic, therapeutic or research purposes. They perform CT procedures and related techniques producing data at the request of and interpretation by a licensed independent practitioner. Employment opportunities include education, sub-specialization, sales and applications, and administration.

Requirements	Cr	Semester Taken	Grade
CAT*201/MRI*201: Cross Sectional Anatomy I	1		
CAT*202: CT Image Display, Post Processing and Quality Assurance I	2		
CAT*203: CT Procedures and Instrumentation I	2		
CAT*204: Clinical Experience I	4		
CAT*205/MRI*205: Cross Sectional Anatomy II	2		
CAT*206: CT Image Display, Post Processing and Quality Assurance II	3		
CAT*207: CT Procedures and Instrumentation II	3		
CAT*208: Clinical Experience II	4		
<b>TOTAL CREDITS</b>	<b>21</b>		

# COMPUTER ENGINEERING TECHNOLOGY

## TECHNOLOGY STUDIES ASSOCIATE DEGREE OPTION

### ***STEM (Science, Technology, Engineering, Math)***

---

**Program Coordinator:** Dr. Lin Lin

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5763

**Email:** [llin@mxcc.edu](mailto:llin@mxcc.edu)

#### **DESCRIPTION**

This program prepares students for transfer to institutions with Bachelor's Degree programs in Computer Engineering Technology, Industrial Technology, Networking Technology, or other related fields, or for entry into computer-based industry positions. The objectives of this hands-on, technically oriented program include:

- Provide students with a background in electric circuits, computer hardware and software, networking, and engineering standards to the building, testing, operation, and maintenance of computer systems and associated software systems.
- Provide students with the ability to apply science, engineering, and mathematical analysis in solving computer engineering technology problems.
- Prepare students to take the industry-based certification exams.
- Develop students' ability to apply written, oral, and graphical communication in both technical and non-technical environments.
- Develop students' ability to learn new concepts and techniques as required for continuing professional development.

The target audience for this program includes both full and part time students with an interest in pursuing a career as an IT Professional (including Network Administrator, Systems Administrator, Systems Analyst, Support Specialist), Programmer/Software Developer, or Computer Technologist or Engineer (Hardware/Software). This is a College of Technology Pathway Program with articulation agreements with four year institutions. Successful completion of the program allows students to enter their junior year in the Computer Engineering Technology Program at Central Connecticut State University. Consultation with the program coordinator is strongly recommended if students wish to transfer to other related programs or other institutions.

#### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## TECH. STUDIES: COMPUTER ENGINEERING TECHNOLOGY

Associate in Science Degree

College of Technology Transfer-Oriented Program

This program is a College of Technology Transfer-Oriented Degree that is intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate courses to ensure seamless transfer to your intended transfer institution.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 17 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Gen Ed: Aesthetic Dimensions</b>		3		
<b>Gen Ed: Historical Knowledge</b>		3		
Program Requirement	MAT*254: Calculus I	4		
Program Requirement	CST*141: Computer Hardware	4		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Oral Communication</b>	COM*173: Public Speaking	3		
<b>Gen Ed: Social Phenomena (1 of 2)</b>	ECN*102: Principles of Microeconomics	3		
Program Requirement	CSC*101: Intro to Computers	3		
<b>Gen Ed: Written Communication</b>	ENG*202: Technical Writing	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*167: Principles of Statistics	3		
<b>Third Semester (Fall) – 16 credits</b>				
Program Requirement	CST*231: Data Communication and Networking	3		
Program Requirement	CSC*105: Programming Logic	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding</b>	EGR*111: Introduction to Engineering	3		
<b>Gen Ed: Scientific Reasoning</b>	PHY*121: General Physics I	4		
Program Requirement	Philosophy (PHL*) Elective	3		
<b>Fourth Semester (Spring) – 14 credits</b>				
<b>Gen Ed: Social Phenomena (2 of 2)</b>	Social Phenomena Elective	3		
Program Requirement	CSC*220: Object-Oriented Programming Using JAVA	3		
Program Requirement	EGR*221: Introduction to Electric Circuit Analysis	4		
Program Requirement	PHY*122: General Physics II	4		
<b>TOTAL CREDITS</b>		<b>62</b>		

# COMPUTER INFORMATION TECHNOLOGY ASSOCIATE DEGREE

## ***STEM (Science, Technology, Engineering, Math)***

---

**Program Coordinator:** Professor Donna Hylton

**Office Location:** Snow Hall, Room 512

**Telephone:** (860) 343-5774

**Email:** [dhylton@mxcc.edu](mailto:dhylton@mxcc.edu)

### **DESCRIPTION:**

The Computer Information Technology (CIT) program is designed to provide students with a well-rounded technical foundation and options in which they can concentrate their skills in either software development or networking. For students who enter the program without a firm grasp on a career direction, the program's core gives a broad range of subject areas that the students can experience before formalizing their concentration. A report published by the U.S. Bureau of Labor explains, "To keep IT systems running, a large workforce is needed to maintain networks, create new software, and ensure information security. In addition, the proliferation of smart phones has given rise to a new "app economy," in which new employment opportunities are available for workers who create the programs that run on mobile devices." The CIT degree incorporates networking, programming, database design, network security, and mobile device programming. All of these are high-demand areas of IT. An internship experience allows the student to apply their skills to an on-the-job experience. Upon graduation, the student is prepared to obtain a job in the IT field or pursue an advanced degree at a four-year college or university.

### **LEARNING OUTCOMES**

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

- Develop the ability to analyze, develop, and design code through knowledge and comprehension of information systems concepts and skills.
- Develop strategic and critical thinking skills through development of the ability to identify, gather, measure, summarize, verify, analyze, design, develop and test programs and hardware design.
- Develop the ability to identify and solve unstructured problems in unfamiliar settings and exercise judgment based on facts.
- Develop mastery in communication by gaining proficiency in oral/written/electronic communication skills and the ability to explain programming concepts and code and related technical issues to others.
- Develop leadership skills through the development of the ability to work collaboratively with a diverse team, including organization, control, and assessment of group-based work, and provide leadership when appropriate.
- Develop the skills to apply current technology, analyze business problems, and design and develop software and solve technical issues; apply word processing, spreadsheet, database, presentation, email, and collaborative software skills in a professional context.
- Develop the skills to communicate using network technologies, access information via internet, and understand information integrity and security issues.

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).



## COMPUTER INFORMATION TECHNOLOGY

Associate in Science Degree  
Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the C SCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15-16 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT* 137: Intermediate Algebra <b>OR</b> higher	3(4)		
Program Requirement	CST*120: Introduction to Operating Systems	3		
Program Requirement	<b>Choose one:</b> CSC*105: Programming Logic <b>OR</b> CSC*115: Introduction to Programming with Alice	3		
Program Requirement	<b>Choose one:</b> CSC*101: Intro to Computers <b>OR</b> Open Elective if student confirms computer proficiency	3		
<b>Second Semester (Spring) – 15-16 credits</b>				
Program Requirement	CST*201: Introduction to Management Information Systems	3		
<b>Gen Ed: Written Communication</b>	ENG* 202: Technical Writing	3		
Program Requirement	<b>Choose one:</b> CSC*220: Java Programming (for students in the Programming Track) <b>OR</b> CST*163: Windows Server Administration (for students in the Networking Track)	3		
<b>Gen Ed: Social Phenomena</b>	ECN*102: Microeconomics	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding <b>OR</b> Scientific Reasoning</b>		3(4)		
<b>Third Semester (Fall) – 15-16 credits</b>				
Program Requirement	<b>Choose one:</b> DGA* elective <b>OR</b> CST*141: Computer Hardware <b>OR</b> CSA/CSC/CST Elective	3(4)		
<b>Gen Ed: Oral Communication</b>	COM*173: Public Speaking	3		
Program Requirement	<b>Choose one:</b> CSC*249: Contemporary Business Application Development (for students in the Programming Track) <b>OR</b> CST*231: Communications Networking (for students in the Networking Track)	3		
Program Requirement	CSA*140: Database Applications	3		
Program Requirement	CST*270: Network Security Fundamentals	3		
<b>Fourth Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>		3		
Program Requirement	CSC*231: Database Design I	3		
Program Requirement	<b>Choose one:</b> CSC*262: Programming Mobile Devices (for students in the Programming Track) <b>OR</b> CST*228: Voice and Data Interworking (for students in the Networking Track)	3		
Program Requirement	CSC*295: Coop Ed/Work Experience	3		
Program Requirement	PSY* <b>OR</b> SOC* Elective	3		
<b>TOTAL CREDITS</b>		<b>60-62</b>		

# COMPUTER SCIENCE STUDIES ASSOCIATE DEGREE

## STEM (Science, Technology, Engineering, Math)

Program Coordinator: Dr. Lin Lin  
Office Location: Wheaton Hall, Room 313  
Telephone: (860) 343-5763  
Email: [llin@mxcc.edu](mailto:llin@mxcc.edu)

This program is a CSU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 17 credits</b>				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	CSC*105: Programming Logic (with a C or better)	3		
Gen Ed: Quantitative Reasoning	MAT*186: Pre-Calculus	4		
Program Requirement*	CSA*140: Database Applications	3		
Gen Ed: Scientific Reasoning	Select one of the following: <ul style="list-style-type: none"> <li>BIO*121: General Biology I</li> <li>CHE*121: General Chemistry I</li> <li>PHY*221: Calculus-Based Physics I</li> </ul>	4		
<b>Second Semester (Spring) – 14 credits</b>				
Program Requirement	CSC*220: Object-Oriented Programming Using Java (with a C or better)	3		
Program Requirement	CSC*231: Database Design I (with a C or better)	3		
Program Requirement	MAT*254: Calculus I (with a C or better)	4		
Gen Ed: Scientific Knowledge	Select the second course in the sequence you began the first semester. <ul style="list-style-type: none"> <li>BIO*122: General Biology II</li> <li>CHE*122: General Chemistry II</li> <li>PHY*222: Calculus-Based Physics II</li> </ul>	4		
<b>Third Semester (Fall) – 16 credits</b>				
Program Requirement	MAT*256: Calculus II (with a C- or better)	4		
Gen Ed: Written Communication II		3		
Gen Ed: Social Phenomena I		3		
Gen Ed: Historical Knowledge		3		
Gen Ed: Aesthetic Dimensions		3		
<b>Fourth Semester (Spring) – 16 credits</b>				
Program Requirement**	CSC*XXX: Client-side Web Design (MxCC Does Not Offer This Course, see below)	3		
Program Requirement**	EET*XXX: Digital Systems (with a C- or better) (MxCC Does Not Offer This Course, see below)	4		
Program Requirement	MAT*210: Discrete Math (with a C or better)	3		
Gen Ed: Social Phenomena II		3		
Gen Ed: Oral Communication		3		
<b>TOTAL CREDITS</b>		<b>63</b>		
*Prerequisite for CSC 231 at MxCC; adds an additional 3 credits to the community college degree; will be received at the CSU as either a CS elective or Open Elective; in most cases, it results in the student needing to complete 123 credits for the bachelor's degree.				
**Middlesex does not offer CSC*XXX or EET*XXX so in order to complete this degree, you will have to take these classes at another community college.				

# CORPORATE MEDIA PRODUCTION CERTIFICATE

## *Humanities and Creative Arts*

**Program Coordinator:** Professor Richard Lenoce

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5796

**Email:** [rlenoce@mxcc.edu](mailto:rlenoce@mxcc.edu)

### DESCRIPTION

The Corporate Media certificate program offers hands-on education in video productions as used in business. Emphasis is on creating marketing, training, instructional and promotional videos. The COM\*287, COM\*295 and COM\*293 Corporate Media Practicum act as capstone courses providing students with experience in producing corporate video productions for businesses, non-profits and government agencies in preparation for employment.

This certificate is a 30-credit occupational certificate program intended as a stackable credential for students looking to specialize in Corporate Media production. When enrolling in this program as a standalone occupational certificate, it is recommended that students entering the program either have an associate degree or higher or are enrolled in the Digital Media Production Associate degree program to improve employability upon graduation.

As the certificate is comprised entirely of courses within MxCC's Digital Media Production A.S. degree, students may switch to pursue the full degree instead of or in addition to the certificate (with no penalties).

### PROGRAM OBJECTIVES

- Provide students with a knowledge and experience with technology used in corporate media production, business and new media such as cameras, video editing workstations, microphones, video recorders and web-based applications.
- Provide students with critical thinking skills so that style can be applied to their productions.
- Familiarize students with media content produced for business including sales, marketing and employee videos, educational television, event production, public relations and advertising.
- Prepare students for entry-level positions with course work, a developed resume, portfolio and internship experience.
- Develop students' ability to apply written, oral, and visual communications to business environments.
- Develop students' ability to learn new concepts and techniques as required for continuing professional development.

Requirements			
Course	CR	Semester Taken	Grade
BMG*204, Managerial Communications or BES*118 Small Business Management	3		
BMK*201 Principles of Marketing	3		
COM*111 Scriptwriting	3		
COM*129 Digital Video Production	3		
COM*131 Audio Production or COM/DGA*125 New Media	3		
ART*/COM*147 Digital Cinematography	3		
COM*264 Advanced Editing Workshop	3		
COM*287 Advanced Media Production or COM*295 Internship	3		
COM*293 Corporate Media Practicum	3		
Open Elective	3		
<b>Total Credits</b>	<b>30</b>		

# CRIMINAL JUSTICE ASSOCIATE DEGREE

## *Social and Behavioral Sciences, Education, and Public Service*

---

**Program Coordinator:** Associate Professor Rebecca Rist-Brown

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5849

**Email:** [rristbrown@mxcc.edu](mailto:rristbrown@mxcc.edu)

### DESCRIPTION

Students interested in careers in law enforcement, corrections, security, and the court system should consider this program. The Associate in Science degree will allow a student to pursue a career immediately upon completion or transfer to a four year institution. This degree program provides preparation for career opportunities in criminal justice and for the continuation of education at a four-year college or university. The curriculum examines police science, law, judicial studies, and corrections.

### LEARNING OUTCOMES

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

- Identify and explain the basic structures and functions of the criminal justice system.
- Interpret the basic concepts and functions of criminal law.
- Integrate multidisciplinary theories which constitute the basis for understanding criminality and victimization.
- Apply constitutional principles that protect the rights of individuals and regulate criminal justice practices and procedures.
- Discuss the importance of social and ethical issues confronting the criminal justice systems.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## CRIMINAL JUSTICE

Associate in Science Degree  
Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	CJS*101: Introduction to Criminal Justice	3		
Gen Ed: Quantitative Reasoning	MAT* 137 or higher	3		
Program Requirement	SOC*240: Criminology	3		
MxCC General Education Requirement (1 of 2)	Historical Knowledge elective:	3		
Second Semester (Spring) – 15 credits				
Gen Ed: Aesthetic Dimensions		3		
Program Requirement	CJS*213: Evidence and Procedures	3		
MxCC General Education Requirement (2 of 2)	Written Communication elective:	3		
Program Requirement	CJS*211: Criminal Law I	3		
Program Requirement	<b>Choose One:</b> <ul style="list-style-type: none"><li>CJS*290: Practicum in Criminal Justice</li><li>CJS*288: Careers in Criminal Justice</li><li>Any CJS* Elective</li></ul>	3		
Third Semester (Fall) – 15-16 credits				
Program Requirement	CJS*294: Contemporary Issues in Criminal Justice	3		
Program Requirement	Scientific Knowledge & Understanding elective:	3(4)		
Gen Ed: Social Phenomena	SOC*101: Principles of Sociology	3		
Program Requirement	Criminal Justice Elective (1 of 4)	3		
Gen Ed: Scientific Reasoning	PSY*111: General Psychology I	3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	Criminal Justice Elective (2 of 4)	3		
Program Requirement	Criminal Justice Elective (3 of 4)	3		
Program Requirement	Criminal Justice Elective (4 of 4)	3		
Unrestricted Elective		3		
Unrestricted Elective		3		
TOTAL CREDITS		60(61)		
Unrestricted Elective: Any course numbered 100 or above				

# CRIMINOLOGY STUDIES ASSOCIATE DEGREE

## *Social and Behavioral Sciences, Education, and Public Service*

**Program Coordinator:** Associate Professor Rebecca Rist-Brown

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5849

**Email:** rristbrown@mxcc.edu

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed:</b> Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	CJS*101: Introduction to Criminal Justice	3		
<b>Gen Ed:</b> Quantitative Reasoning	MAT*167: Principles of Statistics	3		
<b>Gen Ed:</b> Social Phenomena	SOC*101: Principles of Sociology	3		
<b>Gen Ed:</b> Aesthetic Dimensions		3		
<b>Second Semester (Spring) – 15-16 credits</b>				
Program Requirement	CJS*105: Introduction to Law Enforcement	3		
Program Requirement	CJS*213: Evidence and Procedures	3		
<b>Gen Ed:</b> Written Communication		3		
<b>Gen Ed:</b> *Scientific Reasoning		3-4		
<b>Gen Ed:</b> Historical Knowledge		3		
<b>Third Semester (Fall) – 15-16 credits</b>				
Program Requirement	CJS*102: Introduction to Corrections	3		
Program Requirement	SOC*240: Criminology	3		
<b>Gen Ed:</b> *Scientific Knowledge & Understanding		3-4		
<b>Gen Ed:</b> Global Knowledge OR Creativity		3		
Unrestricted Elective		3		
<b>Fourth Semester (Spring) – 15 credits</b>				
Program Requirement	Choose one course from: CJS*211: Criminal Law CJS*220: Criminal Investigation CJS*225: Forensic Science CJS*290: Practicum in Criminal Justice CJS*294: Contemporary Issues in Crim. Justice CJS*298: Special Topics in Criminal Justice	3		
<b>Gen Ed:</b> Oral Communication		3		
<b>Gen Ed:</b> Social Phenomena	PSY*111: General Psychology I	3		
Unrestricted Elective		3		
Unrestricted Elective		3		
<b>TOTAL CREDITS</b>		<b>61</b>		
*At least one of these must include a lab				



# DIGITAL MARKETING CERTIFICATE

## Humanities and Creative Arts

**Program Coordinator:** Associate Professor Susan Lugli

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5840

**Email:** [slugli@mxcc.edu](mailto:slugli@mxcc.edu)

Tell a good story, be creative, work with others. That's what professionals in the digital marketing field do. They are visual, analytical, love social media, and live in the virtual world. The Digital Marketing certificate prepares students for entry-level digital marketing positions. It also can boost current marketable skills on a resume and help facilitate a career change.

The Digital Marketing certificate is a career path that includes business, communications, English, and new media production courses. While the Digital Marketing program is offered as a certificate, the program can also be an area of specialization for the New Media Production associate degree and can be taken concurrently.

### LEARNING OUTCOMES

Upon completion of this certificate, a student will be able to:

- Understand and apply segmentation, targeting, positioning, branding, and the marketing mix in pursuit of long-term marketing objectives.
- Develop and apply integrated marketing strategies for all channels.
- Analyze principles, techniques and major functions of management and business organizations.
- Create Search Engine Marketing (SEM) & Conversion Rate Optimization (CRO) techniques (campaigns), evaluate their effectiveness and recommend changes that will improve an e-commerce campaign's conversion rates.
- Understand the various methods of online display advertising and create online display ad campaigns and measure its ROAS (return on ad spend based on budgeting) for an e-commerce site.
- Understand and interpret web analytics; determine the appropriate KPIs for any type of website and make appropriate recommendations to an e-commerce website based on the conversion funnel and analytics.
- Understand and implement best practices in marketing to a database of current and potential customers via email.
- Create compelling content including titles, bylines and copy and utilize knowledge of social media tactics to design an effective social media campaigns.
- Use new media including social media, blogs, web sites and online portfolios for course presentations and job preparation.
- Effectively use a variety of industry standard tools and processes for producing contemporary forms of digital media across multiple delivery platforms and delivery systems.

Requirements			
Course	CR	Semester Taken	Grade
DGA*110 Computer Graphics	3		
BMK*201 Principles of Marketing	3		
BMG*202 Principles of Management	3		
BMK*216 Internet Marketing	3		
COM*120 Social Media	3		
ECN*101 Macroeconomics	3		
DGA*241 Internet Web Design I	3		
ENG*101 (or ENG*101E): Composition	3		
COM*295 Internship	3		
Any course in ACC/BBG/BMG/DGA/COM/ENG	3		
<b>Total Credits</b>	<b>30</b>		

# DIGITAL MEDIA PRODUCTION ASSOCIATE DEGREE WITH EMBEDDED CERTIFICATES

## *Humanities and Creative Arts*

---

**Program Coordinator:** Professor Richard Lenoce

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5796

**Email:** [rlenoce@mxcc.edu](mailto:rlenoce@mxcc.edu)

### DESCRIPTION

The Digital Media Production Associate in Applied Science (A.A.S.) degree qualifies students to work in the many industries that require skills in digital technology and media production such as video production, broadcast television, digital cinema, digital and interactive media, audio recording and mixing, radio, social media, computer graphics, web design, audio and music production, and animation. During the first semester, full-time students take the same classes within the major and have the same schedule. Before the end of their first semester, students are required to enroll in a certificate, specializing in one of several areas of media production: Audio and Music, Corporate Media, Film and Video, Multimedia Design, News and Sports, and Web Design and Development. To meet graduation requirements, each student will produce a thesis project and participate in an internship in their area of specialization. Placement in ENG\*101 is required for most courses.

### LEARNING OUTCOMES

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

- Effectively use a variety of industry standard tools and processes for producing contemporary forms of digital media across multiple delivery platforms and delivery systems.
- Use advanced technologies within a chosen area of specialization with the goal of successfully transitioning from school to working in the industry.
- Plan, create and maintain a professional portfolio highlighting and marketing professional skills and capabilities. Showcase this portfolio via websites, blogs, and social media to achieve employment and educational goals.
- Demonstrate key competencies in media writing, video production, audio production, graphic design, interactive media, photography and other technologies within digital media arts.
- Apply critical thinking and aesthetic judgments in creating collaborative Digital Media projects.
- Communicate clearly, concisely, visually, verbally and in writing, using techniques appropriate for the intended audience.
- Apply course knowledge and gain media production experience in a work environment through experiential learning including internships, practicums and community engaged learning.

### ASSESSMENTS OF STUDENT LEARNING

- Equipment and software certification tests
- Project and instructor portfolio review
- Workflow analysis and instructor review
- Review of effective project delivery across platforms
- Work site supervisor and evaluation
- Continuous instructor review of online portfolio and social media presence
- Grading of written materials
- Application of aesthetic techniques to class projects
- Thesis project instructor review and/or review by professional
- Ability to apply aesthetics examined in media works to personal and class projects
- Demonstrate successful collaboration with peers and professionals as needed
- Demonstrate media literacy skills through presentation of written, aural and visual media
- Research and evaluate media through audience analysis and critiques
- Instructor review of experiential learning blogs and logs
- On-site work supervisor evaluations of student work ethic, projects and collaboration
- Instructor review of student experiential learning evaluation

## AUDIO AND MUSIC PRODUCTION

Associate in Applied Arts Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Digital Media Core Course	COM*104: Careers in Media	3		
Digital Media Core Course	DGA*101: Introduction to Digital Arts	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*203: Media Literacy	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*129: Digital Video Production	3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137 or higher	3(4)		
Audio & Music Requirement	COM*131: Audio Production	3		
Audio & Music Requirement	MUS*117: Electronic Music	3		
One course chosen from any of these competencies: Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, or Written Communication		3		
Audio & Music Requirement	MUS*111: Fundamentals of Music	3		
<b>Third Semester (Fall) – 15 credits</b>				
Audio & Music Requirement	MUS*219: Electronic Music Composition	3		
Audio & Music Requirement	MUS*237: Principles of Music Recording	3		
<b>Gen Ed: Social Phenomena</b>		3		
COM* or DGA* Elective		3		
Audio & Music Requirement	MUS*101 or MUS*104 or MUS*137 or MUS*138	3		
<b>Fourth Semester (Spring) – 15-16 credits</b>				
Digital Media Core Capstone 1 of 2	COM*287: Advanced Media Production	3		
Digital Media Core Capstone 2 of 2	COM*295: Internship	3		
Audio & Music Requirement	MUS*238: Advanced Music Mixing & Processing	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding OR Scientific Reasoning Elective</b>		3(4)		
Unrestricted Elective	Any course numbered 100 or higher	3		
<b>TOTAL CREDITS</b>		<b>60-62</b>		

## CORPORATE MEDIA CERTIFICATE

Associate in Applied Arts Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Digital Media Core Course	COM*104: Careers in Media	3		
Digital Media Core Course	DGA*101: Introduction to Digital Arts	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*203: Media Literacy	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*129: Digital Video Production	3		
<b>Second Semester (Spring) – 15-16 credits</b>				
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137 or higher	3(4)		
Corporate Media Requirement	COM*111: Scriptwriting	3		
Corporate Media Requirement	COM*/DGA*125: New Media Production	3		
Corporate Media Requirement	ART*/COM*147: Digital Cinematography	3		
Corporate Media Requirement	DGA*110: Computer Graphics	3		
<b>Third Semester (Fall) – 15 credits</b>				
Corporate Media Requirement	COM*131: Audio Production	3		
Corporate Media Requirement	BMK*201: Principles of Marketing	3		
<b>Gen Ed: Social Phenomena</b>		3		
Corporate Media Requirement	BMG*204: Managerial Communications OR BES*118: Small Business Management	3		
Corporate Media Requirement	COM*264: Advanced Editing Workshop	3		
<b>Fourth Semester (Spring) – 15-16 credits</b>				
Digital Media Core Capstone 1 of 2	COM*287: Advanced Media Production	3		
Digital Media Core Capstone 2 of 2	COM*295: Internship	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding OR Scientific Reasoning Elective</b>		3(4)		
One course chosen from any of these competencies: Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, or Written Communication		3		
Unrestricted Elective	Any course numbered 100 or higher	3		
<b>TOTAL CREDITS</b>		<b>60-62</b>		

## DIGITAL MARKETING

Associate in Applied Arts Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Digital Media Core Course	COM*104: Careers in Media	3		
Digital Media Core Course	DGA*101: Introduction to Digital Arts	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*203: Media Literacy	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*129: Digital Video Production	3		
<b>Second Semester (Spring) – 15-16 credits</b>				
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137 or higher	3(4)		
Digital Marketing Requirement	BMK*201: Principles of Marketing	3		
Digital Marketing Requirement	BMG*202: Principles of Management	3		
Digital Marketing Requirement	ECN*101: Macroeconomics	3		
Digital Marketing Requirement	DGA*110: Computer Graphics	3		
<b>Third Semester (Fall) – 15 credits</b>				
Digital Marketing Requirement	BMK*216: Internet Marketing	3		
Digital Marketing Requirement	COM*120: Social Media	3		
<b>Gen Ed: Social Phenomena</b>		3		
Digital Marketing Requirement	DGA*241: Internet Web Design I	3		
Unrestricted Elective	Any course numbered 100 or higher	3		
<b>Fourth Semester (Spring) – 15-16 credits</b>				
Digital Media Core Capstone 1 of 2	COM*287: Advanced Media Production	3		
Digital Media Core Capstone 2 of 2	COM*295: Internship	3		
Unrestricted Elective	Any course numbered 100 or higher	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding OR Scientific Reasoning Elective</b>		3(4)		
Digital Marketing Requirement	Any course in ACC/BBG/BMG/DGA/COM/ENG	3		
<b>TOTAL CREDITS</b>		<b>60-62</b>		

## FILM & MEDIA PRODUCTION

Associate in Applied Arts Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Digital Media Core Course	COM*104: Careers in Media	3		
Digital Media Core Course	DGA*101: Introduction to Digital Arts	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*203: Media Literacy OR COM*154: Film Study & Appreciation	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*129: Digital Video Production	3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137 or higher	3(4)		
Film & Video Requirement	COM*111: Scriptwriting	3		
Film & Video Requirement	COM*220: Television Studio Production	3		
Film & Video Requirement	ART*/COM*147: Digital Cinematography OR COM*131: Audio Production	3		
One course chosen from any of these competencies: Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, or Written Communication		3		
<b>Third Semester (Fall) – 15 credits</b>				
Film & Video Requirement	COM*153: Film Production	3		
Film & Video Requirement	COM*228: Broadcast Journalism	3		
<b>Gen Ed: Social Phenomena</b>		3		
Film & Video Requirement	COM*131: Audio Production OR DGA* Elective	3		
Film & Video Requirement	COM*264: Advanced Editing	3		
<b>Fourth Semester (Spring) – 15-16 credits</b>				
Digital Media Core Capstone 1 of 2	COM*287: Advanced Media Production	3		
Digital Media Core Capstone 2 of 2	COM*295: Internship	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding OR Scientific Reasoning Elective</b>		3(4)		
COM*/DGA* Elective		3		
Unrestricted Elective	Any course numbered 100 or higher	3		
<b>TOTAL CREDITS</b>		<b>60-62</b>		



## MULTIMEDIA DESIGN

Associate in Applied Arts Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Digital Media Core Course	COM*104: Careers in Media	3		
Digital Media Core Course	DGA*101: Introduction to Digital Arts	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*203: Media Literacy	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*129: Digital Video Production	3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137 or higher	3(4)		
Multimedia Requirement	ART*121: Two-Dimensional Design	3		
Multimedia Requirement	DGA*110: Computer Graphics	3		
Multimedia Requirement	COM*125/DGA*125: New Media Production	3		
ART*/COM*/DGA*/GRA Elective		3		
<b>Third Semester (Fall) – 15 credits</b>				
Multimedia Requirement	DGA*120: Digital Image Editing I	3		
Multimedia Requirement	GRA*150: Introduction to Graphic Design OR DGA*260 Animation	3		
<b>Gen Ed: Social Phenomena</b>		3		
Multimedia Requirement	DGA*250: Interactive Multimedia Production	3		
ART*/COM*/DGA*/GRA* Elective		3		
<b>Fourth Semester (Spring) – 15-16 credits</b>				
Digital Media Core Capstone 1 of 2	COM*287: Advanced Media Production	3		
Digital Media Core Capstone 2 of 2	COM*295: Internship	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding OR Scientific Reasoning Elective</b>		3(4)		
One course chosen from any of these competencies: Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, or Written Communication		3		
Unrestricted Elective	Any course numbered 100 or higher	3		
<b>TOTAL CREDITS</b>		<b>60-62</b>		

## NEWS & SPORTS CERTIFICATE

Associate in Applied Arts Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Digital Media Core Course	COM*104: Careers in Media	3		
Digital Media Core Course	DGA*101: Introduction to Digital Arts	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*203: Media Literacy	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*129: Digital Video Production	3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137 or higher	3(4)		
News & Sports Requirement	COM*220: Television Studio Production	3		
News & Sports Requirement	COM*111: Scriptwriting	3		
News & Sports Requirement	COM*226: Journalism	3		
News & Sports Requirement	ART*/COM*147: Digital Cinematography OR COM*131 Audio Production	3		
<b>Third Semester (Fall) – 15 credits</b>				
News & Sports Requirement	DGA*110: Computer Graphics OR DGA*120: Digital Image Editing I	3		
News & Sports Requirement	COM*228: Broadcast Journalism	3		
<b>Gen Ed: Social Phenomena</b>		3		
News & Sports Requirement	COM*264: Advanced Editing	3		
One course chosen from any of these competencies: Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, or Written Communication		3		
<b>Fourth Semester (Spring) – 15-16 credits</b>				
Digital Media Core Capstone 1 of 2	COM*287: Advanced Media Production	3		
Digital Media Core Capstone 2 of 2	COM*295: Internship	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding</b> <b>OR Scientific Reasoning Elective</b>		3(4)		
News & Sports Requirement	COM*101: Mass Communications	3		
Unrestricted Elective	Any course numbered 100 or higher	3		
<b>TOTAL CREDITS</b>		<b>60-62</b>		

## WEB DESIGN & DEVELOPMENT

Associate in Applied Arts Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Digital Media Core Course	COM*104: Careers in Media	3		
Digital Media Core Course	DGA*101: Introduction to Digital Arts	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*203: Media Literacy	3		
<b>Gen Ed: Aesthetic Dimensions</b>	COM*129: Digital Video Production	3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137 or higher	3(4)		
Web Design & Dev. Requirement	COM*120: Social Media	3		
Web Design & Dev. Requirement	DGA*110: Computer Graphics	3		
Web Design & Dev. Requirement	DGA*241: Internet Web Design I	3		
ART*/COM*/DGA*/GRA* Elective	(ART*121 Recommended)	3		
<b>Third Semester (Fall) – 15 credits</b>				
Web Design & Dev. Requirement	DGA*120: Digital Image Editing I	3		
<b>Gen Ed: Social Phenomena</b>		3		
Web Design & Dev. Requirement	DGA*242: Internet Web Design II	3		
Web Design & Dev. Requirement	DGA*250: Interactive Multimedia Production	3		
ART*/COM*/DGA*/GRA* Elective		3		
<b>Fourth Semester (Spring) – 15-16 credits</b>				
Digital Media Core Capstone 1 of 2	COM*287: Advanced Media Production	3		
Digital Media Core Capstone 2 of 2	COM*295: Internship	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding OR Scientific Reasoning Elective</b>		3(4)		
One course chosen from any of these competencies: Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, or Written Communication		3		
Unrestricted Elective	Any course numbered 100 or higher	3		
<b>TOTAL CREDITS</b>		<b>60-62</b>		

# EARLY CHILDHOOD EDUCATION ASSOCIATE DEGREE

## *Social and Behavioral Sciences, Education, and Public Service*

---

**Program Coordinator:** Assistant Professor Norma Rosado-Javier

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5758

**Email:** [NRosado-Javier@mxcc.edu](mailto:NRosado-Javier@mxcc.edu)

### DESCRIPTION

The Associate in Science Program in Early Childhood Education is designed for students who wish to enter the field of early childhood education or who are already employed in an early childhood education setting and wish to earn a credential and expand their knowledge and competency in working with young children. The program provides students with the skills and competencies necessary to work effectively with children from birth through age eight. Students may be either full-time or part-time.

Graduates of the program will be able to find employment in day care centers, preschool programs, Head Start programs, or similar. Associate degree holders would also be eligible for head teacher status in child care centers or could seek further education in a Connecticut Early Childhood Education Teacher Certification program. It will also allow one to transfer to a four-year institution.

The Early Childhood Education Program is accredited by the National Association for the Education of Young Children, 1313 L Street, NW, Suite 500, Washington, DC 20005.

### LEARNING OUTCOMES

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

- Promote child development and learning by understanding of what young children are like; understanding what influences their development; and using this understanding to create great environments where all children can thrive. This knowledge of how children develop and learn will help to provide opportunities that support the physical, social, emotional, language, cognitive, and aesthetic development of all young children from birth through age eight.
- Build family and community relationships through understanding and valuing children's families and communities; create respectful, reciprocal relationships; and involve all families in their children's development and learning.
- Observe, document, and assess through understanding the purposes of assessment; use effective assessment strategies; and use assessment responsibly, to positively influence children's development and learning.
- Teach and learn through building close relationships with children and families; use developmentally effective teaching and learning strategies; have sound knowledge of academic disciplines or content areas; and be able to combine all of these to give children experiences that promote development and learning.
- Become a professional by identifying themselves with the early childhood profession; are guided by ethical and other professional standards; are continuous, collaborative learners; thinks reflectively and critically; and advocate for children, families, and the profession.

## EARLY CHILDHOOD EDUCATION

Associate in Science Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	ECE*101: Intro to Early Childhood Education	3		
Program Requirement	ECE*106: Music and Movement for Young Children	3		
Program Requirement	ECE*176: Health Safety, and Nutrition	3		
<b>Gen Ed: Social Phenomena I</b>	PSY*111: General Psychology I	3		
<b>Second Semester (Spring) – 15-16 credits</b>				
Program Requirement	ECE*103: Creative Art Experiences for Young Children	3		
Program Requirement	<b>Choose one:</b> ECE*141: Infant/Toddler Growth and Development OR ECE*180: CDA Preparation Course	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137 or higher	3(4)		
Program Requirement	PSY*204: Child and Adolescent Development	3		
<b>Gen Ed: Social Phenomena II</b>	SOC* Elective	3		
<b>Third Semester (Fall) – 15- 16 credits</b>				
<b>Gen Ed: Oral Communication</b>	COM*173: Public Speaking	3		
Program Requirement	ECE*131: Children's Literature	3		
Program Requirement	ECE*210: Observation and Participation Seminar	3		
Program Requirement	ECE*215: The Exceptional Learner	3		
<b>Gen Ed: Scientific Knowledge OR Scientific Reasoning Elective</b>		3(4)		
<b>Fourth Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>		3		
Program Requirement	ECE*231: Early Language and Literacy Development	3		
Program Requirement	ECE*275: Child, Family, and School Relations	3		
Program Requirement	ECE*295: Student Teaching Practicum	6		
<b>TOTAL CREDITS</b>		<b>60-62</b>		

# EARLY CHILDHOOD EDUCATION CERTIFICATE

## *Social and Behavioral Sciences, Education, and Public Service*

**Program Coordinator:** Assistant Professor Norma Rosado-Javier

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5758

**Email:** [NRosado-Javier@mxcc.edu](mailto:NRosado-Javier@mxcc.edu)

### DESCRIPTION

The nine-course, 30-credit Certificate Program in Early Childhood Education (ECE) is designed for students who wish to enter the field of early childhood education or who are already employed in an early childhood education setting and wish to earn a credential and expand their knowledge and competency in working with young children. The program will provide students with the skills and competencies necessary to work effectively with children from birth through age eight. Students may be either full-time or part-time. Graduates of the program will be able to find employment in day care centers, preschool programs, Head Start programs, or similar. Courses from the Early Childhood Certificate will transfer to the Early Childhood Associate in Science degree program.

Requirements	Cr	Semester Taken	Grade
ECE*101 Intro. to Early Childhood Education	3		
ENG*101 Composition	3		
PSY*111 General Psychology	3		
<b>One of the following:</b> ECE* 103 Creative Art Experiences for Young Children or ECE*106 Music and Movement for Children	3		
ECE*176 Health, Safety, and Nutrition	3		
PSY*204 Child and Adolescent Psychology (ECE*182)	3		
ECE*210 Observation and Participation	3		
ECE*295 Student Teaching	6		
<b>Directed Electives (select one from the list below)</b> ECE*141 Infant/Toddler Development ECE*215 The Exceptional Learner ECE*231 Early Literacy Development ECE*275 Child, Family, and School Relations	3		
<b>TOTAL CREDITS</b>	<b>30</b>		



# EMERGENCY MEDICAL TECHNICIAN

## ***Health Careers/Non-Credit Certificate***

---

### **CONTINUING EDUCATION DIVISION**

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website With Complete Info:** [mxcc.edu/ce/courses/emt](http://mxcc.edu/ce/courses/emt)

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

WIOA, HCAP, VA funding eligible. The Emergency Medical Technician (EMT) program is designed for anyone who is interested in learning more about the emergency response system and in caring for patients in the back of an ambulance en route to the hospital. Students will gain the basic knowledge and skills necessary to provide patient care and transportation to sick and injured patients.

Topics covered in this course include patient assessment, cardiac arrest management, airway management, patient immobilization, diabetic emergencies, strokes, and seizures.

Students meet for lectures and skills training on campus and also complete a mandatory observation at Middlesex Hospital in the emergency department.

This course is offered in cooperation with Middlesex Hospital, Office of Emergency Medical Services, and the Connecticut Department of Public Health. The curriculum prepares students to take the exams to become nationally registered and state of Connecticut certified.

This program is open to students age 16 and older.

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **HCAP funding** – Omayra Vega • 203-624-1493 ext.216 • [ovega@workforcealliance.biz](mailto:ovega@workforcealliance.biz) or TaMesha Greene • 203-238-3688 ext.307 • [tgreene@workforcealliance.biz](mailto:tgreene@workforcealliance.biz).
- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 • [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)

# ENGINEERING SCIENCE ASSOCIATE DEGREE

## ***STEM (Science, Technology, Engineering, Math)***

---

**Program Coordinator:** Dr. Lin Lin

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5763

**Email:** [llin@mxcc.edu](mailto:llin@mxcc.edu)

### **DESCRIPTION**

The MxCC Engineering Science associate degree program is part of the Connecticut College of Technology Pathways program, which prepares students to complete an Associate of Science degree in Engineering Science and make seamless transition into a Bachelor of Science Degree Program in Engineering with junior level status in the receiving institution.

### **LEARNING OUTCOMES**

Upon successful completion of the program, students will be able to:

- Identify and formulate engineering problems by applying engineering, mathematical, scientific and technological principles and concepts.
- Solve engineering problems using critical thinking and problem-solving skills.
- Work as a member of a team.
- Recognize the need for (or Engage in) life-long learning and remain current in one's field.

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## ENGINEERING SCIENCE

Associate in Science Degree, College of Technology Transfer-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 17 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101(E): Composition	3		
<b>Gen Ed: Historical Knowledge</b>	HIS* Elective	3		
Program Requirement	EGR*111: Introduction to Engineering	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding</b>	CHE*121: General Chemistry I	4		
<b>Gen Ed: Quantitative Reasoning</b>	MAT* 254: Calculus I	4		
<b>Second Semester (Spring) – 17 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*102: Composition and Literature	3		
<b>Gen Ed: Social Phenomena</b>	Social Phenomena Elective	3		
Program Requirement	EGR*221 Introduction to Electric Circuit Analysis	4		
Program Requirement	MAT*256: Calculus II	4		
Program Requirement	CSC*105: Programming Logic OR EGR*250: Comp Methods for Engineering	3		
<b>Third Semester (Fall) – 16-17 credits</b>				
Program Requirement	PHL*111: Ethics	3		
<b>Gen Ed: Scientific Reasoning</b>	PHY*221: Calculus-Based Physics I	4		
Program Requirement	ART*, DGA*, or MUS* Elective	3		
Program Requirement	EGR*211: Applied Mechanics I (Statics)	3		
Program Requirement	EGR*214: Engineering Thermodynamics OR CHE*122: General Chemistry II	3/4		
<b>Fourth Semester (Spring) – 14 credits</b>				
Program Requirement	PHY*222: Calculus-Based Physics II	4		
Program Requirement	MAT*285: Differential Equations	3		
Program Requirement	EGR*212 Applied Mechanics II (Dynamics)	3		
Program Requirement	MAT*268: Calculus III Multivariable	4		
<b>TOTAL CREDITS</b>		<b>64-65</b>		

# ENGINEERING TECHNOLOGY

## TECHNOLOGY STUDIES ASSOCIATE DEGREE OPTION

### ***STEM (Science, Technology, Engineering, Math)***

---

**Program Coordinator:** Dr. Lin Lin

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5763

**Email:** [llin@mxcc.edu](mailto:llin@mxcc.edu)

#### **DESCRIPTION**

The Connecticut College of Technology Pathways program allows students to complete an associate degree at MxCC, and continue on to complete a bachelor degree in Industrial Technology, Engineering Technology, Electronic Technology, Computer-Aided Design or Technology Education at Central Connecticut State University's School of Engineering, Science and Technology. The Technology Studies: Engineering Technology Option prepares students primarily to transfer to complete a B.S. degree in civil or mechanical engineering technology.

Upon successful completion of all Technology Studies options program requirements, students will be able to:

- Apply appropriate mathematical and scientific principles to engineering and technology applications.
- Demonstrate proficiency in technical fundamentals to analyze and resolve technology problems.
- Apply knowledge and skills to develop, interpret, and select appropriate technological processes.

#### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## TECHNOLOGY STUDIES: ENGINEERING TECHNOLOGY

Associate in Science Degree, Transfer-Oriented Program

This program is a College of Technology Transfer-Oriented Degree that is intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate course to ensure seamless transfer to your intended transfer institutions.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 16 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>	Fine Arts Elective	3		
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>General Education Requirement</b>	HIS* OR ECN* Elective	3		
<b>Program Requirement</b>	MAT*186: Precalculus	4		
<b>General Education Requirement</b>	GEO*, HIS* OR POL* Elective	3		
<b>Second Semester (Spring) – 16 credits</b>				
<b>Gen Ed: Oral Communication</b>	COM*173: Public Speaking	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*167: Principles of Statistics	3		
<b>General Education Requirement</b>	PHL* Elective	3		
<b>Gen Ed: Written Communication</b>	ENG*202: Technical Writing	3		
<b>Program Requirement</b>	MAT*254: Calculus I	4		
<b>Third Semester (Fall) – 18 credits</b>				
<b>Gen Ed: Scientific Knowledge &amp; Understanding</b>	CHE*121: General Chemistry I	4		
<b>Gen Ed: Scientific Reasoning</b>	PHY*121: General Physics I	4		
<b>Gen Ed: Social Phenomena (1 of 2)</b>	ECN*102: Microeconomics	3		
<b>Program Requirement</b>	MAT*256: Calculus II	4		
<b>Program Requirement</b>	EGR*211: Applied Mechanics I (Statics)	3		
<b>Fourth Semester (Spring) – 16 credits</b>				
<b>Gen Ed: Social Phenomena (2 of 2)</b>	PSY* OR SOC* Elective	3		
<b>Program Requirement</b>	CHE*122: General Chemistry II OR PHY*122: General Physics II	4		
<b>Program Requirement</b>	EGR*212: Applied Mechanics II (Dynamics)	3		
<b>Directed Elective ++</b>	CAD*110: Introduction to CAD	3		
<b>Directed Elective ++</b>	(consult Program Coordinator)	3		
<b>TOTAL CREDITS</b>		<b>66</b>		
++ Please consult Program Coordinator.				

# ENGLISH STUDIES ASSOCIATE DEGREE

## *Humanities and Creative Arts*

**Discipline Coordinator:** Professor Christine Ruggiero

**Office Location:** Snow Hall, Room 520

**Telephone:** (860) 343-5878

**Email:** [cruggiero@mxcc.edu](mailto:cruggiero@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Gen Ed: Quantitative Reasoning		3		
Gen Ed: Aesthetic Dimensions		3		
Unrestricted Elective		3		
Unrestricted Elective		3		
Second Semester (Spring) – 15-16 credits				
Program Requirement	ENG*102: Literature and Composition	3		
Gen Ed: Scientific Reasoning *		3-4		
Gen Ed: Historical Knowledge		3		
Unrestricted Elective		3		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Program Requirement	ENG*221: American Literature I <i>You must also take ENG*232 British Literature II</i> OR ENG*231: British Literature I <i>You must also take ENG*222 American Literature II</i>	3		
Program Requirement	ENG*291: Mythology OR ENG*241: World Literature I OR ENG*242: World Literature II	3		
Gen Ed: Scientific Knowledge *		3-4		
Gen Ed: Social Phenomena I		3		
Additional Gen Ed: Creativity		3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	ENG*222: American Literature II OR ENG*232: British Literature II <i>See note in Third Semester requirements</i>	3		
Gen Ed: Social Phenomena II		3		
Gen Ed: Oral Communication		3		
Add'l Gen Ed: Global Knowledge		3		
Unrestricted Elective		3		
TOTAL CREDITS		60-61		
*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.				
** Unrestricted Elective: Any course numbered 100 or above.				



# ENTREPRENEURSHIP CERTIFICATE

## *Business & Hospitality*

**Program Coordinator:** Associate Professor Susan Lugli

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5840

**Email:** [slugli@mxcc.edu](mailto:slugli@mxcc.edu)

### DESCRIPTION

This ten-course, 30-credit certificate program is designed for individuals interested in owning their own business. Students completing the program will possess the fundamental knowledge and skills necessary to succeed in a self owned business. Sanctioned by the United States Small Business Administration, this certificate combines a liberal arts component which emphasizes a communications competence and provides the technical knowledge and perspective needed to start, manage or grow a business. A student will be able to pursue a career or apply courses to an Associate in Science degree.

Requirements	Cr	Semester Taken	Grade
ACC*113: Principles of Financial Accounting	3		
BBG*115: Business Software Applications <b>OR</b> CST*201: Intro to Management Information Systems	3		
BES* 118: Small Business Management	3		
BMG*202: Principles of Management	3		
BMG*204: Managerial Communications	3		
BMK*106: Principles of Selling	3		
BMK*201: Principles of Marketing	3		
COM*173: Public Speaking	3		
ECN*102: Microeconomics	3		
ENG*101: Composition	3		
<b>TOTAL CREDITS</b>	<b>30</b>		

# ENVIRONMENTAL SCIENCE

## ASSOCIATE DEGREE

### ***STEM (Science, Technology, Engineering, Math)***

---

**Program Coordinator:** Dr. Mark Busa

**Office Location:** Wheaton Hall, Room 217

**Telephone:** (860) 343-5779

**Email:** [mbusa@mxcc.edu](mailto:mbusa@mxcc.edu)

#### **DESCRIPTION**

This curriculum is designed to prepare students for employment at the assistant or semi-professional level in public or private organizations dealing with pollution prevention and control. It is intended to be flexible by allowing substitution of courses that will tailor the curriculum to individual student needs or occupational objectives.

As a final experience students complete an internship that provides valuable job training and frequently leads to full time employment.

#### **LEARNING OUTCOMES**

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

- Discuss the major environmental issues facing society, including their short- and long-term impacts and the potential for applying sustainable technologies and solutions.
- Demonstrate knowledge of the fundamental scientific principles underlying environmental issues, emphasizing interrelationships between biological, chemical, and geological processes in the Earth system.
- Apply the scientific method of inquiry to environmental questions using a combination of laboratory skills, field skills, knowledge of experimental design, statistical analysis, and critical thinking.
- Use appropriate computational, graphical, and communication methods to analyze and present scientific data effectively, using up-to-date technologies as appropriate.
- Research and assess the accuracy of information from a variety sources, including print publications, broadcast media, and online resources.
- Work effectively both individually and as a team member to assess environmental problems and conduct scientific investigations.
- Perform work in accordance with standard laboratory and field safety procedures.
- Identify career options and educational pathways for a variety of environmental science careers locally, regionally, and nationally, including skills and knowledge needed to be successful.

#### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## ENVIRONMENTAL SCIENCE

Associate in Science Degree  
Transfer-Oriented Program

This program is a Transfer-Oriented Degree that is intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate courses to ensure seamless transfer to your intended transfer institution.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 14 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101: Composition	3		
Program Requirement	EVS*100 Intro to Environmental Science	3		
Program Requirement	EVS*111: Environmental Science Laboratory (Fall only)	1		
Program Requirement	EVS* 135: Exploring Environmental Careers (Fall only)	1		
Program Requirement	CSC*101: Intro to Computers OR higher	3		
<b>Gen Ed: Social Phenomena (1 of 2)</b>		3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Scientific Knowledge &amp; Understanding</b>	GLG*120: Dynamic Earth (Spring only)	4		
<b>Gen Ed: Scientific Reasoning</b>	CHE*121: General Chemistry I	4		
Program Requirement	MAT*173: College Algebra with Technology (or higher)	4		
<b>Gen Ed: Aesthetic Dimensions</b>		3		
<b>Third Semester (Fall) – 14 - 15 credits</b>				
Program Requirement	BIO*173: Introduction to Ecology (Fall only)	4		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*167: Principles of Statistics (or higher)	3-4		
Directed Elective (1 of 2)	(see list below)	4		
<b>Gen Ed: Written Communication</b>		3		
<b>Fourth Semester (Spring) – 16- 17 credits</b>				
Directed Elective (2 of 2)	(see list below)	4		
<b>Gen Ed: Social Phenomena (2 of 2)</b>		3		
<b>Gen Ed: Oral Communication</b>	COM* 173: Public Speaking	3		
Science OR Engineering Elective (Must be 4 credits if Math elective was 3 credits)		3-4		
<b>Gen Ed: Historical Knowledge Elective</b>		3		
<b>TOTAL CREDITS</b>		<b>60</b>		
<b>Directed Elective List:</b> BIO*121: General Biology I, BIO*122: General Biology II, CHE*122: General Chemistry II, CHE*250: Instrumental Analysis, PHY*121: General Physics I, or PHY*122: General Physics II				

# FILM & VIDEO PRODUCTION CERTIFICATE

## *Humanities and Creative Arts*

**Program Coordinator:** Professor Richard Lenoco

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5796

**Email:** [rlenoco@mxcc.edu](mailto:rlenoco@mxcc.edu)

### DESCRIPTION

The Film and Video certificate program teaches video production as applied to the broadcast television, film, corporate and digital media industries with an emphasis on narrative, documentary/news and informational programming. This hands-on program teaches all aspects of field, studio and video post-production on advanced technology in the college's Center for New Media. The Advanced Media Production and Internship act as capstone courses providing students with portfolio examples of professional work and on-site work experience in preparation for entry level positions or contract employment in the field.

This 30-credit certificate program is intended as a stackable credential for students looking to specialize in digital video production. When enrolling in this program as a standalone occupational certificate, it is recommended that students entering the program either have an associate degree or higher or are enrolled in the Digital Media Production Associate degree program to improve employability upon graduation.

As the certificate is comprised entirely of courses within MxCC's Digital Media Production A.S. degree, students may switch to pursue the full degree instead of or in addition to the certificate with no penalties

Requirements			
Course	CR	Semester Taken	Grade
COM*129 Digital Video Production	3		
Art/COM*147 Digital Cinematography or COM*131 Audio	3		
COM* 101 Introduction to Mass Communication	3		
COM*111 Scriptwriting	3		
COM*153 Film Production	3		
COM*220 Television Studio Production	3		
COM*228 Broadcast Journalism	3		
COM*264 Advanced Editing	3		
ENG* 101 College Composition or Open Elective when taken as part of the New Media Production degree program or if student already has a degree.	3		
COM*287 Advanced Media Production or COM*295 Internship	3		
<b>Total Credits</b>	<b>30</b>		

# FRENCH STUDIES ASSOCIATE DEGREE

## Humanities and Creative Arts

**Pathway Advisor:** Professor Angelo Glaviano

**Office Location:** Snow Hall, Room 520

**Telephone:** (860) 343-5807

**Email:** [aglaviano@mxcc.edu](mailto:aglaviano@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	FRE*101: Elementary French I	3		
Gen Ed: Social Phenomena I		3		
Gen Ed: Aesthetic Dimension		3		
Unrestricted Elective		3		
Second Semester (Spring) – 15- 16 credits				
Program Requirement	FRE*102: Elementary French II	3		
Gen Ed: Written Communication II		3		
Gen Ed: Scientific Reasoning *		3-4		
Gen Ed: Quantitative Reasoning		3		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Program Requirement	FRE*201: Intermediate French I	3		
Gen Ed: Scientific Knowledge *		3-4		
Gen Ed: Social Phenomena II		3		
Additional Gen Ed: Creativity		3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	FRE*202: Intermediate French II	3		
Gen Ed: Oral Communication		3		
Gen Ed: Historical Knowledge		3		
Additional Gen Ed: Global Knowledge		3		
Unrestricted Elective		3		
TOTAL CREDITS		60-61		
<i>*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.</i>				
<i>** Unrestricted Elective: Any course numbered 100 or above.</i>				

# FINE ARTS ASSOCIATE DEGREE

## *Humanities and Creative Arts*

---

**Program Coordinator:** Professor Judith DeGraffenried

**Office Location:** Snow Hall, Room 407

**Telephone:** (860) 343-5871

**Email:** [jdegraffenried@mxcc.edu](mailto:jdegraffenried@mxcc.edu)

### **DESCRIPTION**

Students may follow one of two tracks to earn a Fine Arts degree:

The Fine Arts Track provides a transfer program in the fine arts for students who wish to continue in this field after graduation. In addition to the primary transfer function, this program also provides cultural enrichment for students wishing only the associate degree.

The Graphic Design Track provides students with the basic skills required for entry level employment as graphic designers and illustrators in design studios, publishing companies, printerries, and service bureaus. This track emphasizes the development of aesthetic sensibilities using traditional mediums as well as new technologies. Students should take required courses first, then choose electives to meet their specific career goals. Students who plan to transfer to a four-year college are advised to check with the intended college concerning the number of transferable credits. Completion of the requirements of an additional program "track" does not constitute a different degree.

### **LEARNING OUTCOMES**

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

- Implement fundamental design skills as they relate to graphic design
- Demonstrate a level of technical as well as creative skills appropriate for employment in the graphic design industry
- Demonstrate an understanding and application of terminology used in today's graphic design environments
- Demonstrate competency in the use of the computer and in the use of the major programs that have been created for the graphic design field
- Make use of the fundamentals of typography, and use that knowledge to effectively integrate text and image within a cohesive design
- Work effectively within a team environment with a diverse employment population.
- Demonstrate effective presentation skills
- Demonstrate the traits and attitudes that promote ongoing success and strong work ethic as related to the graphic design industry (good communication skills, research ability, meeting deadlines, punctuality).
- Apply the integrated skills and knowledge to the successful completion of an on-the-job graphic design internship.

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).



## FINE ARTS

Associate in Arts Degree  
Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>MxCC General Education Requirement (1 of 2)</b>	ART*101: Art History I	3		
Program Requirement	ART*109: Color Theory	3		
<b>Gen Ed: Aesthetic Dimensions</b>	ART*111: Drawing I	3		
Program Requirement	ART*121: Two-Dimensional Design	3		
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>MxCC General Education Requirement (2 of 2)</b>	ART*102: Art History II	3		
Program Requirement	ART*112: Drawing II	3		
Program Requirement	ART*122: 3-D Design	3		
Program Requirement	ART*215: Illustration	3		
<b>Gen Ed: Social Phenomena</b>		3		
<b>Third Semester (Fall) – 15-16 credits</b>				
Program Requirement	ART*131: Sculpture	3		
Program Requirement	ART*155: Watercolors	3		
Program Requirement	ART* Elective	3		
Program Requirement	ART*253: Oil Painting I	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*137: Intermediate Algebra or higher	3-4		
<b>Fourth Semester (Spring) – 15-16 credits</b>				
Program Requirement	ART* Elective	3		
Program Requirement	ART*/DGA* Elective	3		
Program Requirement	ART*/DGA* Elective	3		
Program Requirement	ART*254: Oil Painting II	3		
<b>Gen Ed: Scientific Knowledge OR Scientific Reasoning</b>		3-4		
<b>TOTAL CREDITS</b>		60-62		

# GENERAL STUDIES ASSOCIATE DEGREE

## *Humanities and Creative Arts*

---

**Associate Dean:** Elizabeth Slupski

**Office Location:** Founders Hall, Room 131

**Telephone:** (860) 343-5895

**Email:** [eslupski@mxcc.edu](mailto:eslupski@mxcc.edu)

### DESCRIPTION

General Studies is intended for students who wish to design a personalized degree program for exploration or to meet educational and career goals. It's also for students who may have credits from several colleges who wish to "collect" their credits into an Associate Degree credential. This program is not designed primarily for transfer purposes. It does not provide adequate guidance for meeting the admissions and transfer requirements of baccalaureate institutions without careful assistance from advisors at both Middlesex and the college or university where a student plans to attend.

MxCC is committed to a sound liberal arts education and the development of a solid foundation of professional skills, which are incorporated through specific requirements in the program. The program also offers a great deal of flexibility as a basis for further study or career paths. However, transferring students who wish to pursue liberal arts degrees are encouraged to consider the Liberal Arts and Science program, which is specifically designed for this purpose. Other transferring students should ask their advisor to recommend the best program to meet their specific needs.

### LEARNING OUTCOMES

Upon successful completion of all General Studies degree program requirements, graduates will:

- Demonstrate a clear connection among elective choices and their personal, occupational or academic ambitions.
- Work with others, including culturally and intellectually diverse peoples; think critically; and gain an appreciation for life-long learning.
- Become adept in written and spoken communication skills.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## GENERAL STUDIES

### Associate in Science Degree

This program is intended for students who wish to design a personalized degree program for exploration or to meet educational and career goals, and for students who may have credits from several colleges who wish to "collect" their credits into an Associate Degree credential. This program is not designed primarily for transfer purposes. It does not provide adequate guidance for meeting bachelor's degree requirements without careful assistance from an advisor

Category	Course	Cr	Semester Taken	Grade
<b>General Education for Career Programs – 23 credits</b>				
Aesthetic Dimensions		3		
Two courses chosen from any of these competencies: Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, and/or Written Communication	Elective 1:	3		
	Elective 2:	3		
Quantitative Reasoning Any MAT* course numbered 100 and above	MAT*	3-4		
Scientific Knowledge OR Scientific Reasoning		3-4		
Social Phenomena		3		
Written Communication	ENG* 101: Composition	3		
<b>Program Requirements - 15 credits</b>				
Continuing Learning/ Information Literacy		3		
Critical Analysis/Logical Thinking		3		
Historical Knowledge		3		
Oral Communication		3		
Written Communication	ENG* 102: Literature & Composition	3		
<b>Unrestricted Electives - 24 credits</b>				
<i>Any credit courses offered by the college to meet a student's interests and goals. Courses must be numbered 100 and above.</i>				
Unrestricted Elective				
Unrestricted Elective				
Unrestricted Elective				
Unrestricted Elective				
Unrestricted Elective				
Unrestricted Elective				
Unrestricted Elective				
Unrestricted Elective				
<b>TOTAL CREDITS</b>		60-62		
<b>Two (2) courses (6 credits minimum) numbered 200 or higher are required to complete graduation requirements for the General Studies Degree.</b>				

# GEOGRAPHY STUDIES DEGREE

## Social and Behavioral Sciences, Education, and Public Service

Pathway Advisor: Professor Tad Lincoln

Office Location: Snow Hall, Room 508

Telephone: (860) 343-5817

Email: [tlincoln@mxcc.edu](mailto:tlincoln@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	LNG*101 (or LNG*101L): Composition	3		
Gen Ed: Aesthetic Dimensions		3		
Program Requirement	Choose one: • GEO*101: Introduction to Geography • GEO*102: Introduction to Human Geography* • GEO*111: World Regional Geography*	3		
Gen Ed: Historical Knowledge		3		
Unrestricted Elective**		3		
Second Semester (Spring) – 15-16 credits				
Gen Ed: Written Communication II		3		
Gen Ed: Quantitative Reasoning		3		
Program Requirement	Choose one: • GEO*101: Introduction to Geography • GEO*102: Introduction to Human Geography* • GEO*111: World Regional Geography*	3		
Gen Ed: Scientific Reasoning***		3-4		
Unrestricted Elective**		3		
Third Semester (Fall) – 15-16 credits				
Gen Ed: Scientific Knowledge & Understanding***		3-4		
Add'l Gen Ed: Creativity		3		
Gen Ed: Social Phenomena		3		
Unrestricted Elective**	GEO*204: Geography and Tourism Development* is recommended.	3		
Unrestricted Elective**		3		
Fourth Semester (Spring) – 15 credits				
Gen Ed: Cont. Learning & Intell. Lit.		3		
Add'l Gen Ed: Global Knowledge		3		
Gen Ed: Oral Communication		3		
Unrestricted Elective**		3		
Unrestricted Elective**		3		
TOTAL CREDITS		60-62		

\*These courses are not offered at MxCC. In order to complete them you will need to take them at another institution. Ask your advisor for help registering for these courses.

\*\*You are free to choose any courses at or above 100-level but consider taking any pre-requisites needed for courses within the program as well as any language requirements you will need for a four year degree.

\*\*\*One of the science courses must be a 4 credit lab course.

# HEALTH CAREER PATHWAYS

## Health Careers

**Pathway Advisor:** Dr. Judy Wallace

**Office Location:** Wheaton Hall, Room 209

**Telephone:** (860) 343-5780

**Email:** [jwallace@mxcc.edu](mailto:jwallace@mxcc.edu)

### DESCRIPTION

This program is designed to assist the student to achieve 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 programs 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.

### LEARNING OBJECTIVES

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

- Demonstrate competence in written and oral communication.
- Demonstrate critical thinking, logical reasoning and problem solving skills.
- Effectively utilize and interpret medical terminology.
- 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.
- Use and apply scientific methods.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

Requirements	Cr	Semester Taken	Grade
ENG*101: Composition	3		
<sup>1</sup> MAT*137: Intermediate Algebra	3		
PSY*111: General Psychology I	3		
BIO*105: Introduction to Biology OR BIO*115: Human Biology OR BIO*121: General Biology I	4		
BIO*211: Human Anatomy & Physiology I	4		
BIO*212: Human Anatomy & Physiology II	4		
CHE*111: Concepts of Chemistry	4		
HLT*103: Investigations in Health Careers	3		
<b>TOTAL CREDITS</b>	<b>28</b>		

<sup>1</sup> MAT\*136 from Norwalk CC or MAT\*138 from Manchester CC will also fill this requirement.

# HEALTH INFORMATION MANAGEMENT ASSOCIATE DEGREE

## *Health Careers*

---

**Program Coordinator:** Associate Professor Jill Flanigan

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5791

**Email:** [jflanigan@mxcc.edu](mailto:jflanigan@mxcc.edu)

### **DESCRIPTION**

The Health Information Management (HIM) program provides an understanding of the many aspects of the emerging field of healthcare technology and information management. HIM professionals are involved in the design, collection, storage, utilization, and transmission of data required to meet the professional, legal, and administrative record-keeping requirements of healthcare delivery systems. They also work with clinical, financial, epidemiological, administrative, and coded healthcare and insurance data. This associate degree program will provide students the skills necessary to enter the job market as a HIM technician. This curriculum provides the foundation of a baccalaureate HIM degree and students may choose to transfer to a four-year college, or pursue employment in the field.

*Note: Transfer credit for the following courses can only be accepted from CAHIIM-accredited institutions: HIM 113, HIM 157, HIM 201, HIM 205, HIM 206, HIM 220, HIM 230, HIM 256, HIM 290, HIM 295.*

### **LEARNING OUTCOMES**

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

- Apply knowledge of data content structure and standards to evaluate data sources, apply classification system guidelines including ICD-10-CM, ICD-10-PCS, CPT, HCPCS II, and SNOMED, and ensure health record documentation is complete and accurate.
- Protect health information by controlling access, ensuring information security, and understanding the legal and ethical issues in the use of health data.
- Participate in the implementation and use of information technology in the healthcare organization including establishing data standards, ensuring data quality, utilizing decision support tools, and performing data analysis.
- Utilize healthcare data to manage the revenue cycle of the healthcare organization through understanding of payment methods and systems in all care settings.
- Evaluate organization compliance with regulations and standards to support licensing, accreditation, and reimbursement.
- Apply information governance principles by collecting, storing, protecting, and using organizational data strategically, especially in performance improvement activities.
- Understand and apply knowledge of pathophysiology, pharmacology, anatomy & physiology, medical terminology, computer concepts and computer applications as they relate to health information management.

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## HEALTH INFORMATION MANAGEMENT

Associate in Science Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the C SCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 16 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	MED*125: Medical Terminology	3		
<b>Gen Ed: Scientific Knowledge OR Scientific Reasoning</b>	BIO*115: Human Biology	4		
Program Requirement	HIM*201: Health Information Management Principles	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*167: Principles of Statistics	3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*102: Literature and Composition	3		
Program Requirement	HIM*206: Medical Coding II	3		
Program Requirement	HIM*203: Pathophysiology	3		
Program Requirement	HIM*205: Medical Coding I	3		
Program Requirement	HIM*256: Legal and Ethical Issues of HIM	3		
<b>Third Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>		3		
<b>Gen Ed: Oral Communication</b>	COM*173: Public Speaking	3		
Program Requirement	HIM*113: Healthcare Delivery Systems and Reimbursement	3		
Program Requirement	HIM*157: Healthcare Informatics	3		
Program Requirement	CSA*140: Database Applications	3		
<b>Fourth Semester (Spring) – 14 credits</b>				
<b>Gen Ed: Social Phenomena</b>	SOC*160: Intro to Public Health	3		
Program Requirement	HIM*213: Pharmacology for HIM	1		
Program Requirement	HIM*220: Supervision/Quality Management	3		
Program Requirement	HIM*230: Healthcare Statistics and Data Analysis	3		
Program Requirement	HIM*290: Certification Exam Preparation	1		
Program Requirement	HIM*295: Health Information Management Internship	3		
<b>TOTAL CREDITS</b>		<b>60</b>		



# HEALTH INFORMATION MANAGEMENT CERTIFICATE

## Health Careers

**Program Coordinator:** Associate Professor Jill Flanigan

**Office Location:** Wheaton Hall, Room 313

**Telephone:** (860) 343-5791

**Email:** [jflanigan@mxcc.edu](mailto:jflanigan@mxcc.edu)

### DESCRIPTION

The HIM Certificate offers students a curriculum that is focused on the medical coding and reimbursement aspects of the health information management field while still introducing student to privacy, compliance, and ethics. Information technology is an integral part of the medical world, and health information management is a growing field which has experienced expansion in recent years with the transition in healthcare from traditional practices using paper to highly efficient electronic record-keeping. HIM professionals are involved in the design, collection, storage, utilization, and transmission of data required to meet the professional, legal, and administrative record-keeping requirements of healthcare delivery systems. They also work with clinical, financial, epidemiological, administrative, and coded healthcare and insurance data. This program is approved by the AHIMA Professional Certificate Approval Program January of 2018 – January of 2021 with annual interim approval during these years. *Note: Transfer credit for the following courses can only be accepted from CAHIIM-accredited institutions: HIM 113, HIM 157, HIM 201, HIM 205, HIM 206, HIM 220, HIM 230, HIM 256, HIM 290, HIM 295.*

### LEARNING OUTCOMES

Upon completion of the Certificate, graduates will be able to:

- Apply knowledge of data content structure and standards to apply classification system guidelines including ICD-10-CM, ICD-10-PCS, CPT, HCPCS II, and SNOMED, and ensure health record documentation is complete and accurate.
- Protect health information by controlling access, ensuring information security, and understanding the legal and ethical issues in the use of health data.
- Utilize healthcare data to manage the revenue cycle of the healthcare organization through understanding of payment methods and systems in all care settings.
- Evaluate organization compliance with regulations and standards to support reimbursement.
- Understand and apply knowledge of pathophysiology, pharmacology, anatomy & physiology, medical terminology, computer concepts and computer applications as they relate to health information management.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

Requirements	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 10 Credits</b>			
MED*125: Medical Terminology	3		
BIO*115: Human Biology	4		
HIM*201: Health Info Management Principles	3		
<b>Second Semester (Spring) – 10 Credits</b>			
HIM*203: Pathophysiology	3		
HIM*213: Pharmacology for HIM	1		
HIM*205: Medical Coding I	3		
HIM*206: Medical Coding II	3		
<b>Third Semester (Fall) – 10 Credits</b>			
HIM*215: Clinical Coding PPE I	3		
HIM*216: Clinical Coding PPE II	3		
HIM*217: Clinical Coding PPE III	3		
HIM*290: Certification Exam Preparation	1		
<b>TOTAL CREDITS</b>	<b>30</b>		

# HELP DESK TECHNICIAN CERTIFICATE

## *STEM (Science, Technology, Engineering, Math)*

**Program Coordinator:** Professor Donna Hylton

**Office Location:** Snow Hall, Room 512

**Telephone:** (860) 343-5774

**Email:** [dhylton@mxcc.edu](mailto:dhylton@mxcc.edu)

### DESCRIPTION

This certificate program prepares students to be software and hardware help desk technicians. The help desk technician is frequently the first position available to an Information Technology professional and it can lead to network administration and network support positions. Students in the program will learn to design and use problem solving techniques; use oral and written communication within a business environment; implement management and customer service skills in team building activities; learn terminology in networking environments; and use technical skills in implementing software and hardware installations. Additional training is obtained through a required on-the-job internship. Upon completion of the program students will be able to design and use critical thinking to solve problems and work in an Information Technology department applying software, hardware, and technical skills. The Help Desk Technician Certificate program is a 25-credit program; the courses required by this certificate may transfer to the Computer Information Technology Associate degree program at MxCC.

Requirements	Cr	Semester Taken	Grade
BMK*123: Principles of Customer Service	3		
CSC*295: Coop Ed/Work Experience	3		
CST*120: Introduction to Operating Systems	3		
CST*141: Computer Hardware	4		
CST*163: Windows Server Administration	3		
CST*231: Data Communication and Networking	3		
CST*270: Network Security Fundamentals	3		
CST*201: Intro to Management Information Systems OR any CSA*/CSC*Elective	3		
<b>TOTAL CREDITS</b>	<b>25</b>		

# HUMAN SERVICES ASSOCIATE DEGREE

## *Social and Behavioral Sciences, Education, and Public Service*

---

**Program Coordinator:** Dr. Jennifer Hernandez

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5816

**Email:** [jhernandez@mxcc.edu](mailto:jhernandez@mxcc.edu)

### DESCRIPTION

This curriculum is designed to prepare students to perform effectively in a human service setting and/or to transfer to a baccalaureate program in human services, social work, psychology, counseling, or other fields in the helping profession. Emphasis is on the empirical and theoretical aspects of the disciplines of psychology, sociology, social work, counseling, and group work, with application through practicum experience in community facilities and settings. Students are trained to work with specialists in psychology, social work, community services, anti-poverty programs, mental health, mental retardation, gerontology, juvenile justice, substance abuse, education, and advocacy. Certificates in Juvenile Justice, Therapeutic Recreation, and Substance Abuse Education may be taken concurrently with the Human Services Associate Degree. All human services students must be advised by full-time faculty from the Human Services Program.

### LEARNING OUTCOMES

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

- Explain and compare the theories pertaining to adjustment and development;
- Explain and compare the theories of treatment methods and intervention modalities;
- Explain and compare the etiological factors in psychopathology, including the biological, sociological, and psychological factors;
- Demonstrate attitudes of openness, candor, cooperation, and support through group work and interaction;
- Demonstrate the use of methods of research and reporting, using psychological, sociological, and clinical terminology;
- Demonstrate an understanding of the personality and behavioral factors, both integrative (adaptive) and disintegrative (maladaptive) which contribute to individuals/clients' coping skills dealing with stress, conflict, and hardship;
- Demonstrate an understanding of the normative developmental patterns that occur in individuals from conception through old age and how this understanding impacts our understanding of abnormal behavior and clinical interventions;
- Integrate knowledge and skill in achieving competency in functional and responsive therapeutic abilities;
- Demonstrate skill in client needs assessment and in the provision of information and referral for client access to resources, whether the client be an individual, family, group, or community;
- Demonstrate an awareness of themselves as change agents through the use of such vehicles as recreational activities, modeling, contracting, client and community intervention, advocacy, and constructive use of confrontation;
- Analyze the impact of collaborative social service systems.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## HUMAN SERVICES

Associate in Science Degree -- Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Social Phenomena</b>	HSE*101: Intro to Human Services	3		
<b>MxCC Gen Ed:</b> Select one course from Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, or Written Communication		3		
<b>Gen Ed: Quantitative Reasoning for Career Programs</b>		3		
<b>Gen Ed: Scientific Reasoning</b>	PSY*111: General Psychology I	3		
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Second Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>		3		
Program Requirement	<b>Choose one:</b> SOC*101: Principles of Sociology <b>OR</b> SOC* 103: Social Problems	3		
Unrestricted Elective <i>Any course numbered 100 or above</i>		3		
Program Requirement	HSE*202: Intro to Interviewing/Counseling	3		
Program Requirement	<b>Choose one:</b> PSY*201: Life Span Development <b>OR</b> PSY*204: Child and Adolescent Development	3		
<b>Third Semester (Fall) – 15 credits</b>				
<b>MxCC Gen Ed:</b> Select one course from Aesthetic Dimensions, Historical Knowledge, Oral Communication, Social Phenomena, or Written Communication	COM*173: Public Speaking	3		
Unrestricted Elective - <i>Any course numbered 100 or above; SOC*210 is recommended</i>		3		
Program Requirement	HSE*288: Developmental Practicum	3		
Program Requirement: SOC*, PSY* <b>OR</b> SSC* Elective		3		
Program Elective <i>Human Services Certificate courses may be used here</i>		3		
<b>Fourth Semester (Spring) – 15 credits</b>				
Program Requirement	HSE*289: Psychiatric Practicum	3		
Program Requirement	PSY*245: Abnormal Psychology	3		
Program Requirement	SOC*120: Group Dynamics	3		
Two Program Electives <i>Human Services Certificate courses may be used here</i>		3		
		3		
<b>TOTAL CREDITS</b>		<b>60</b>		

# HISTORY STUDIES ASSOCIATE DEGREE

## *Humanities and Creative Arts*

Pathway Advisor: Dr. Victor Triay  
 Office Location: Snow Hall, Room 508  
 Telephone: (860) 343-5746  
 Email: [vtriay@mxcc.edu](mailto:vtriay@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	HIS*201: United States History I	3		
Gen Ed: Aesthetic Dimensions		3		
Gen Ed: Social Phenomena I		3		
Unrestricted Elective		3		
Second Semester (Spring) – 15-16 credits				
Program Requirement	HIS*202: United States History II	3		
Gen Ed: Scientific Reasoning *		3-4		
Gen Ed: Written Communication II		3		
Gen Ed: Quantitative Reasoning		3		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Gen Ed: Scientific Knowledge *		3-4		
Gen Ed: Social Phenomena II		3		
Additional Gen Ed: Creativity		3		
Unrestricted Elective		3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 15 credits				
Gen Ed: Historical Knowledge	Cannot use HIS*201 or HIS 202*	3		
Gen Ed: Oral Communication		3		
Additional Gen Ed: Global Knowledge		3		
Unrestricted Elective		3		
Unrestricted Elective		3		
TOTAL CREDITS		60-61		
<i>*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.</i>				
<i>** Unrestricted Elective: Any course numbered 100 or above.</i>				

# ITALIAN STUDIES ASSOCIATE DEGREE

## Humanities and Creative Arts

**Pathway Advisor:** Professor Angelo Glaviano

**Office Location:** Snow Hall, Room 520

**Telephone:** (860) 343-5807

**Email:** [aglaviano@mxcc.edu](mailto:aglaviano@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	ITA*101: Elementary Italian I	3		
Gen Ed: Social Phenomena I		3		
Gen Ed: Aesthetic Dimension		3		
Unrestricted Elective		3		
Second Semester (Spring) – 15-17 credits				
Program Requirement	ITA*102: Elementary Italian II	3		
Gen Ed: Written Communication II		3		
Gen Ed: Scientific Reasoning *		3-4		
Gen Ed: Quantitative Reasoning		3-4		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Program Requirement	ITA*201: Intermediate Italian I	3		
Gen Ed: Scientific Knowledge *		3-4		
Gen Ed: Social Phenomena II		3		
Additional Gen Ed: Creativity		3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	ITA*202: Intermediate Italian II	3		
Gen Ed: Oral Communication		3		
Gen Ed: Historical Knowledge		3		
Additional Gen Ed: Global Knowledge		3		
Unrestricted Elective		3		
TOTAL CREDITS		60-61		
<i>*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.</i>				
<i>** Unrestricted Elective: Any course numbered 100 or above.</i>				

# LIBERAL ARTS & SCIENCES ASSOCIATE DEGREE

## *Humanities and Creative Arts*

---

**Associate Dean:** Ricardo Barrett

**Office Location:** Founders Hall, Room 121

**Telephone:** (860) 343-5823

**Email:** [rbarrett@mxcc.edu](mailto:rbarrett@mxcc.edu)

### **DESCRIPTION**

This curriculum is designed for students who wish to transfer to a liberal arts program at a four-year institution. It consists of a broad program of general knowledge in the humanities and contains a science option for those students wishing to focus more intently in the sciences. Students should choose electives with consideration toward their intended field of specialization.

### **LEARNING OUTCOMES**

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

- Read, write and communicate analytically in forms that involve and document outside sources.
- Understand the major literary, artistic and philosophical features of western and non-western cultures.
- Define the concept and function of culture.
- Demonstrate knowledge of the major developments in western civilization.
- Understand world events in terms of social scientific theories and paradigms.
- Demonstrate the ability to conduct meaningful research.
- Use mathematical tools and technology to create mathematical models.
- Analyze and solve problems numerically, graphically and symbolically.
- Use appropriate techniques to gather and analyze data.
- Apply the scientific method to solving problems.
- Understand and apply scientific principles.
- Work with others, including culturally and intellectually diverse peoples; think critically; and gain an appreciation for life-long learning.
- Demonstrate proficiency in a foreign language at the intermediate level.

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).



## LIBERAL ARTS & SCIENCES

### Associate Degree Transfer-Oriented Program

This program is a Transfer-Oriented Degree that is intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate courses to ensure seamless transfer to your intended transfer institution.

Category		Course	Cr	Semester Taken	Grade
General Education for Transfer Programs – 30-33 Credits					
Gen Ed: Aesthetic Dimensions			3		
Gen Ed: Historical Knowledge			3		
Gen Ed: Oral Communication			3		
Gen Ed: Quantitative Reasoning <i>Must be a Math course above MAT*137</i>			3-4		
Scientific Knowledge Elective	<i>At least one should have a laboratory component</i>		7-8		
Scientific Reasoning Elective					
Gen Ed: Social Phenomena (1 of 2)			3		
Gen Ed: Social Phenomena (2 of 2)			3		
Gen Ed: Written Communication		ENG*101 (or ENG*101E): Composition	3		
Gen Ed: Written Communication		ENG*102: Literature & Composition	3		
Additional General Education Course Electives – 12 credits					
Continuing Learning/Information Literacy			3		
Three courses chosen from any of these competencies: Aesthetic Dimensions, Historical Knowledge, Oral Communication, Quantitative Reasoning, Scientific Knowledge & Understanding, Scientific Reasoning, Social Phenomena, and/or Written Communication. <i>Some math and science courses are offered for 4 credits.</i>			3		
			3		
			3		
Foreign Language Requirement – 6 credits					
Foreign Language Elective (1 of 2) <i>Two courses must be in the same language</i>			3		
Foreign Language Elective (2 of 2) <i>Two courses must be in the same language</i>			3		
Unrestricted Electives – 12 credits					
Unrestricted Elective <i>Any course numbered 100 or above</i>			3		
Unrestricted Elective <i>Any course numbered 100 or above</i>			3		
Unrestricted Elective <i>Any course numbered 100 or above</i>			3		
Unrestricted Elective <i>Any course numbered 100 or above</i>		<i>This course may not be necessary if the total of all other credits is 60 or greater.</i>	3		
TOTAL MINIMUM CREDITS			60		
* 4-credit language courses will transfer in for 4 credits. Foreign language requirements may be waived for previous coursework (including American Sign Language), native fluency, AP/CLEP/Subject SAT exams, or documented disability exemptions. In such cases, a student will need to substitute open electives to complete a minimum of 60 total credits for the Associate Degree.					

# MAGNETIC RESONANCE IMAGING (MRI) CERTIFICATE

## *Health Careers*

Program Coordinator: Dr. Judy Wallace  
Office Location: Wheaton Hall, Room 209  
Telephone: (860) 343-5780  
Email: [jwallace@mxcc.edu](mailto:jwallace@mxcc.edu)

Requirements	Cr	Semester Taken	Grade
CAT* 201/MRI* 201: Cross Sectional Anatomy I	1		
MRI* 202: MRI Pathology I	1		
MRI* 203: MRI Procedures and Instrumentation I	2		
MRI* 204: MRI Image Quality, Equipment and Safety Essentials	2		
MRI* 206: Clinical Experience I	4		
CAT* 205/MRI* 205: Cross Sectional Anatomy II	2		
MRI* 207: MRI Pathology II	1		
MRI* 208: MRI Procedures and Instrumentation II	2		
MRI* 209: MRI Image Quality, Equipment and Safety Essentials	2		
MRI* 210: MRI Clinical Experience II	4		
<b>TOTAL CREDITS</b>	<b>21</b>		

# MAMMOGRAPHY POST-PRIMARY CERTIFICATION

## *Health Careers*

**Program Coordinator:** Dr. Judy Wallace  
**Office Location:** Wheaton Hall, Room 209  
**Telephone:** (860) 343-5780  
**Email:** [jwallace@mxcc.edu](mailto:jwallace@mxcc.edu)

### DESCRIPTION

The Middlesex Community College Mammography Certificate program is a one-semester program for certified Radiographers interested in a career as a Mammographer. Students are trained to meet the standards contained in the Practice Standards for Medical Imaging and Radiation Therapy Technologists Mammography Practice Standards; [http://media.asrt.org/pdf/governance/practicestandards/ps\\_mamm.pdf](http://media.asrt.org/pdf/governance/practicestandards/ps_mamm.pdf)

Following the successful completion of all Program requirements and obligations to the college, students are awarded Certificate in Mammography and may sit for the professional Registry exam sponsored by the American Registry of Radiologic Technologists (ARRT). A minimum score of 75 on the national post-primary certification examination is required for certification as a Mammographer.

The program adheres to MXCC Student and Faculty Non-Discrimination policies in that there is no discrimination of student or faculty on the basis of race, color, national or ethnic origin, religion, age, sex, marital or veteran status, sexual orientation, physical disability, or any other legally protected status.

Our graduates are allied health professionals who administer ionizing radiation and high frequency sound waves for diagnostic, therapeutic or research purposes. A mammography technologist performs breast imaging procedures and related techniques producing data at the request of and with interpretation by a licensed independent practitioner. The mammographer performs the breast imaging procedures that create mammographic and sonographic images needed for diagnosis. Employment opportunities include education, sub-specialization, sales and applications, and administration.

Requirements	Cr	Semester Taken	Grade
MAM*201: Principles of Mammography	4		
MAM*202: Mammography Clinical Experience	4		
<b>TOTAL CREDITS</b>	<b>8</b>		

# MANAGEMENT INFORMATION SYSTEMS ASSOCIATE DEGREE

## ***Business & Hospitality***

---

**Program Coordinator:** Professor Donna Hylton

**Office Location:** Snow Hall, Room 512

**Telephone:** (860) 343-5774

**Email:** [dhylton@mxcc.edu](mailto:dhylton@mxcc.edu)

### **DESCRIPTION**

The Management Information Systems program combines Business and Information Technology curricula which includes general education, business, and computer courses that are normally taken at a baccalaureate institution. Business and computer science majors may see this degree as a conduit that transitions them into the highly desirable field of technology management. The program will reinforce the communication, business, and technology skills necessary to succeed in the business environment. Courses in this program will transfer to other four-year colleges in the Management Information Systems and/or computer degree programs. Students intending to transfer should meet with the Coordinator of the Management Information Systems program for advising. According to the U.S. Bureau of Labor Statistics, the employment of computer and information systems managers is expected to grow 15% from 2014 to 2024; this is much faster than the average of all occupations. Demand for computer and information systems managers will continue to grow as firms increasingly expand their operations to include digital platforms.

### **LEARNING OUTCOMES**

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

- Analyze, develop, and design code through knowledge and comprehension of information systems concepts and skills
- Identify, gather, measure, summarize, verify, analyze, design, develop and test programs and hardware design.
- Identify and solve unstructured problems in unfamiliar setting and exercise judgment based on facts.
- Communicate through development of proficiency in oral/written/electronic communication skills and the development of the ability to explain programming concepts and code to others.
- Work collaboratively with a diverse team, including organization, control, and assessments of group-based work, and provide leadership when appropriate.
- Apply current technology, analyze business problems, and design and develop software.
- Communicate using network technologies, access information via internet, and understand information integrity and security issues.
- Gain awareness of legal, regulatory, and ethical issues facing the profession, awareness of information technology and network security, and understanding the methods for creating and managing change in organizations.

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## MANAGEMENT INFORMATION SYSTEMS

Associate in Science Degree – Transfer-Oriented Program

This program is a Transfer-Oriented Degree that is intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate courses to ensure seamless transfer to your intended transfer institution.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT* 167: Principles of Statistics	3		
Program Requirement	<b>Choose one:</b> BMG*202: Principles of Management <b>OR</b> BMK*201: Principles of Marketing	3		
Program Requirement	CSC*105: Programming Logic	3		
Program Requirement	CST*201: Intro to Management Info Systems	3		
<b>Second Semester (Spring) – 16 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG* 202: Technical Writing	3		
Program Requirement	BMG*204: Managerial Communications	3		
<b>Gen Ed: Scientific Reasoning</b>	CSC*220: Java Programming	3		
<b>Gen Ed: Social Phenomena (1 of 2)</b>	<b>Choose one:</b> ECN*101: Macroeconomics <b>OR</b> ECN*102: Microeconomics	3		
<b>Gen Ed: Scientific Knowledge &amp; Understanding – with Lab</b>		4		
<b>Third Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Historical Knowledge</b> <i>Must be a History Department course</i>	HIS*	3		
<b>Gen Ed: Oral Communication</b>	COM*173: Public Speaking	3		
Program Requirement	CSC*205: Visual Basic I	3		
Program Requirement	ACC*113 Principles of Financial Accounting	3		
Program Requirement	<b>Choose one:</b> • CSA*140: Database Applications • CST*120: Intro to Operating Systems • CST*228: Voice and Data Interworking • CST*231: Data Communication and Networking • DGA*241: Internet Web Design	3		
<b>Fourth Semester (Spring) – 15 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>		3		
Program Requirement	<b>Choose one:</b> BBG*231 Business Law I <b>OR</b> BBG*234 Legal Environment of Business	3		
Program Requirement	<b>Choose one:</b> ACC*117: Principles of Managerial Accounting <b>OR</b> BFN*201: Principles of Finance	3		
Program Requirement	<b>Choose one:</b> BBG*295 Cooperative Work Experience <b>OR</b> CSC*295: Coop Ed/Work Experience	3		
<b>Gen Ed: Social Phenomena (2 of 2)</b>	SOC*101: Principles of Sociology	3		
<b>TOTAL CREDITS</b>		<b>61</b>		

# MANUFACTURING ENGINEERING TECHNOLOGY

## TECHNOLOGY STUDIES ASSOCIATE DEGREE OPTION *Manufacturing and Applied Technology*

---

**Program Director:** Tracy Ariel

**Office Location:** Snow Hall, Room 512

**Telephone:** (860) 343-5856

**Email:** [tariel@mxcc.edu](mailto:tariel@mxcc.edu)

### DESCRIPTION

The Manufacturing Engineering Technology degree is a pathway for students wanting to earn a Bachelor of Science degree at Central Connecticut State University and other four year institutions. This program is similar to the Technology Studies: Manufacturing Machine Technology degree program we currently offer with the difference being more of an emphasis on mathematics and science. Although designed to be a transfer program, graduates of pathway program are also well prepared for employment. Graduates are prepared for high tech jobs in manufacturing by developing the technical skills, computer literacy, analytical and critical thinking skills, and soft skills required employment. Since manufacturing jobs make up more than 10% of jobs in the state of Connecticut and with an aging workforce, graduates of this program have strong career prospects. Manufacturing Engineers do interesting work at a higher than average rate of pay with full fringe benefits. Graduates of this pathway have the option of completing a Bachelor of Science degree as either full time or as part time students earning an income and gaining practical experience in their field.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## TECH. STUDIES: MANUFACTURING ENGINEERING TECH

Associate in Science Degree

College of Technology Transfer-Oriented Program

This program is a College of Technology Transfer-Oriented Degree that is intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate courses to ensure seamless transfer to your intended transfer institution.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 16 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Gen Ed: Historical Knowledge		3		
Program Requirement	EGR*112 Engineering Drawings Specifications	3		
Program Requirement	MFG*150 Introduction to Machine Technology	4		
Program Requirement	GEO*, POL*, HIS* Elective	3		
Second Semester (Spring) – 17 credits				
Program Requirement	CAD*110: Introduction to CAD OR CAD*220: Parametric Design	3		
Gen Ed: Scientific Reasoning	CHE*121: General Chemistry I	4		
Program Requirement	MFG*202: Precision Machining OR MFG*165: Intermediate Machine Technology*	3		
Program Requirement	MFG*203: Precision Machining Lab <i>Not required if student is co-enrolled in, or has completed, MFG*165</i>	1		
Gen Ed: Oral Communication	COM*173: Public Speaking	3		
Gen Ed: ECN* Elective		3		
Third Semester (Fall) – 17 credits				
Gen Ed: Oral Communication	ENG*202: Technical Writing	3		
Gen Ed: Quantitative Reasoning	MAT*254: Calculus I	4		
Gen Ed: Scientific Reasoning	PHY*121: General Physics OR PHY*221: Calculus Based Physics	4		
Program Requirement	MFG*168: CNC I	3		
Program Requirement	MFG*239: Geometric Dimensioning & Tolerancing	3		
Fourth Semester (Spring) – 16 credits				
Gen Ed: Aesthetic Dimension		3		
Program Requirement	EGR*211: Applied Mechanics (Statics)	3		
Program Requirement	MAT*256: Calculus II	4		
Program Requirement	MFG*256: Manufacturing Machinery CNC II	3		
Gen Ed: Social Phenomena		3		
TOTAL CREDITS		66		
*MxCC does not offer this course. Please see your advisor in order to discuss taking this course at an alternate location.				



# MANUFACTURING MACHINE TECHNOLOGY

## TECHNOLOGY STUDIES ASSOCIATE DEGREE OPTION

### *Manufacturing and Applied Technology*

---

**Program Director:** Tracy Ariel

**Office Location:** Snow Hall, Room 512

**Telephone:** (860) 343-5856

**Email:** [tariel@mxcc.edu](mailto:tariel@mxcc.edu)

#### **DESCRIPTION**

To consider a career in manufacturing two myths must be dispelled. Myth number one: Manufacturing jobs are dirty, noisy, and repetitious. Most of these jobs have gone overseas and what remains are high tech jobs that require computer literacy, strong analytical and critical thinking skills, and the ability to work as a member of a team. Myth number two: There is no future in manufacturing. Manufacturing jobs make up more than 10% of all jobs in the state of Connecticut. Through attrition and the need for a highly skilled workforce, manufacturers are facing a shortage of skilled workers. This could be an opportunity to explore a career doing interesting work at a higher than average rate of pay with full fringe benefits. Students completing this program can find careers as CNC (Computer Numerical Control) operators, inspectors and Tool & Die apprentices. Students completing a degree at a four-year institution can find careers in sales or management.

#### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## TECH. STUDIES: MANUFACTURING MACHINE TECHNOLOGY

Associate in Science Degree

College of Technology Transfer-Oriented Program

This program is a College of Technology Transfer-Oriented Degree that is intended to be completed before you continue your education at the baccalaureate level. Individual articulation agreements may exist with specific universities so that your degree is completely accepted with all credits transferring. Please check with your Academic Advisor to ensure you enroll in the appropriate courses to ensure seamless transfer to your intended transfer institution.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 or 16 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Gen Ed: Historical Knowledge		3		
Program Requirement	MFG*124: Blueprint Reading I <b>OR</b> EGR*112: Engineering Drawings Specifications	2 or 3		
Program Requirement	MFG*150: Introduction to Machine Technology	4		
Program Requirement	GEO*, POL*, HIS* Elective	3		
Second Semester (Spring) – 16 or 17 credits				
Program Requirement	CAD*110: Introduction to CAD <b>OR</b> CAD*220: Parametric Design	3		
Gen Ed: Scientific Knowledge & Understanding	CHE*111: Concepts of Chemistry <b>OR</b> CHE*121: General Chemistry I	4		
Program Requirement	MFG*202: Precision Machining <b>OR</b> MFG*165: Intermediate Machine Technology*	3		
Program Requirement	MFG*203: Precision Machining Lab <i>Not required if student is co-enrolled in, or has completed, MFG*165</i>	1		
Gen Ed: Oral Communication	COM*173: Public Speaking	3		
Gen Ed: Economics (ECN*) Elective		3		
Third Semester (Fall) – 17 credits				
Gen Ed: Written Communication	ENG*202: Technical Writing	3		
Gen Ed: Quantitative Reasoning	MAT*167: Principles of Statistics	4		
Gen Ed: Scientific Reasoning	PHY*110: Introductory Physics <b>OR</b> PHY*121: General Physics	4		
Program Requirement	MFG*168: CNC I	3		
Program Requirement	MFG*239: Geometric Dimensioning & Tolerancing	3		
Fourth Semester (Spring) – 18 or 19 credits				
Gen Ed: Aesthetic Dimension		3		
Program Requirement	QUA*114: Principles of Quality Assurance	3		
Program Requirement	MFG*105: Manufacturing Math II <b>OR</b> MAT*186: Pre-Calculus	3 or 4		
Gen Ed: Social Phenomena		3		
Program Requirement	MFG*256: Manufacturing Machinery CNC II	3		
Program Requirement: Philosophy (PHL*) Elective				
TOTAL CREDITS		66-69		
*MxCC does not offer this course. Please see your advisor in order to discuss taking this course at an alternate				

# MANUFACTURING MACHINE TECHNOLOGY CERTIFICATE

## *Manufacturing and Applied Technology*

**Program Director:** Tracy Ariel

**Office Location:** Snow Hall, Room 512

**Telephone:** (860) 343-5856

**Email:** [tariel@mxcc.edu](mailto:tariel@mxcc.edu)

### DESCRIPTION

Manufacturing jobs today make up more than 10 percent of all jobs in the state of Connecticut. Through attrition and the need for a highly skilled workforce, manufacturers are facing a shortage of skilled workers. This could be an opportunity to explore a career doing interesting work at a higher-than-average pay rate, with full benefits. Students completing this program can find careers as CNC (Computer Numerical Control) operators, inspectors and Tool & Die apprentices. Students wishing to advance their careers may do coursework on a full-time basis and complete the program within one year or on a part-time basis. We are currently offering a part-time night and weekend program. This program is designed to appeal to students that don't have the time to enroll and complete coursework as full-time college students. The goals are to encourage single parents and those that feel they are underemployed to pursue careers in manufacturing and to provide the opportunity for completion of the program within two years.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

Requirements	Cr	Semester Taken	Grade
CAD*110: Introduction to CAD or CAD*220 Parametric Design (SolidWorks)	3		
MFG*105 Manufacturing Math II	3		
MFG*120: Metrology	3		
MFG*124: Blueprint Reading I or EGR*112 Engineering Drawing Specifications	2 or 3		
MFG*125 Blueprint Reading II	3		
MFG*150: Introduction to Machine Technology	4		
MFG*160: Introduction to GD&T* or MFG*239 Geometric Dimensioning & Tolerancing	3		
MFG*165 Intermediate Machine Technology* or MFG*202 Precision Machining	3		
MFG*203 Precision Machining Lab (Not required if student completes MFG*165)	1		
MFG*166: Benchwork	1		
MFG*168: CNC I	3		
MFG*256 Manufacturing Machinery CNC II	3		
QUA*114: Principles of Quality Control	3		
<b>TOTAL CREDITS</b>	<b>35-36</b>		
<i>*MxCC does not offer these courses. Please see your advisor as needed.</i>			

# MATHEMATICS STUDIES

## ASSOCIATE DEGREE

### STEM (Science, Technology, Engineering, Math)

**Discipline Coordinator:** Professor Leonel Carmona

**Office Location:** Wheaton Hall, Room 310

**Telephone:** (860) 343-5769

**Email:** lcarmona@mxcc.edu

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 14 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Gen Ed: Quantitative Reasoning	MAT*186: Pre-Calculus*	4		
Gen Ed: Aesthetic Dimension		3		
Gen Ed: Scientific Reasoning	Select one of the following: <ul style="list-style-type: none"><li>BIO*121: General Biology I</li><li>CHE*121: General Chemistry I</li><li>PHY*121: General Physics I</li></ul>	4		
Second Semester (Spring) – 14 credits				
Program Requirement	MAT*254: Calculus I*	4		
Gen Ed: Written Communication II		3		
Unrestricted Elective		3		
Gen Ed: Scientific Knowledge	Select the second course in the sequence you began the first semester. <ul style="list-style-type: none"><li>BIO*122: General Biology II</li><li>CHE*122: General Chemistry II</li><li>PHY*122: General Physics II</li></ul>	4		
Third Semester (Fall) – 16 credits				
Program Requirement	MAT*256: Calculus II*	4		
Program Requirement	CSC*105: Programming Logic	3		
Gen Ed: Social Phenomena I		3		
Gen Ed: Historical Knowledge		3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 16 credits				
Program Requirement	MAT*268: Calculus III: Multivariable	4		
Program Requirement	MAT*272: Linear Algebra <b>OR</b> MAT*285: Differential Equations	3		
Gen Ed: Oral Communication		3		
Gen Ed: Social Phenomena II		3		
Unrestricted Elective		3		
TOTAL CREDITS		60		
*If you begin the Transfer Ticket with placement above Pre-calculus, you will receive 4 additional credits of open electives for each level of Pre-Calculus and Calculus you place out of.				
** Unrestricted Elective: Any course numbered 100 or above.				

# MEDICAL BILLING & CODING

## ***Health Careers/Non-Credit Certificate***

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website With Complete Info:** [mxcc.edu/ce/courses/medical-billing-and-coding](http://mxcc.edu/ce/courses/medical-billing-and-coding)

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

WIOA, HCAP, SNAP, and VA funding eligible. The Medical Office Billing & Coding Certificate Program is designed for those who want to begin medical billing and coding careers or prepare for a nationally-recognized certification exam. The training in this program will also provide you with the necessary skills required by employers seeking a medical biller or medical coder. Medical billers are responsible for submitting claims to insurance companies, Medicare, Medicaid, and in some instances, patients themselves on behalf of their employers or clients. Professional medical coders transform verbal descriptions of diseases, injuries, and procedures into numeric or alphanumeric codes. The coding of health-related data permits access to medical records by diagnoses and procedures for use in clinical care, research, and education. Students who successfully complete this program will be qualified to sit for the American Academy of Professional Coders (AAPC) – Certified Professional Coder Exam (CPC). For more information on the national certification exams or student membership with the AAPC or AHIMA, please visit either: [www.aapc.com](http://www.aapc.com) or [www.ahima.org](http://www.ahima.org). Students who pass the CPC exam are eligible to receive college credit through Charter Oak State College.

### **PROGRAM REQUIREMENTS**

The following 5 courses are included in the Medical Office Billing & Coding Program:

- 1) Medical Coding I
- 2) Medical Coding II
- 3) Medical Office Electronic Health Records
- 4) Medical Insurance
- 5) Medical Terminology and Anatomy for Coders

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **HCAP funding** – Omayra Vega • 203-624-1493 ext.216 / [ovega@workforcealliance.biz](mailto:ovega@workforcealliance.biz) or TaMesha Greene • 203-238-3688 ext.307 / [tgreene@workforcealliance.biz](mailto:tgreene@workforcealliance.biz).
- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 / [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)
- **CT Pathways (SNAP)**– Jennifer Mueller • [jmueller@mxcc.edu](mailto:jmueller@mxcc.edu)

# MULTIMEDIA DESIGN CERTIFICATE

## *Humanities and Creative Arts*

**Program Coordinator:** Professor Richard Lenoce

**Faculty Advisor:** Professor Richard Eriksen

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5796 [Lenoce] • (860) 343-5795 [Eriksen]

**Email:** rlenoce@mxcc.edu • reriksen@mxcc.edu

### DESCRIPTION

The Multimedia Design certificate program prepares students for careers in the field of interactive multimedia used in business, marketing, education, entertainment and the World Wide Web. Students learn interactive multimedia design, authoring and production including graphics, audio, video and animation. Graduates leave with a portfolio of work and experience that prepare them for careers as multimedia producers, web designers, project managers or media production specialists. COM\*287 Advanced Media Production and COM\*295 Internship act as capstone courses providing students with portfolio work and on-site work experiences in preparation for employment. Upon graduation, students will receive an Associate degree in Digital Media and an occupational certificate in Multimedia Design attesting to their specialized knowledge and skills in this area.

This 30-credit certificate program is intended as a stackable credential for students looking to specialize in interactive multimedia design. When enrolling in this program as a standalone occupational certificate, it is recommended that students entering the program either have an associate degree or higher or are enrolled in the Digital Media Production Associate degree program to improve employability upon graduation.

As the certificate is comprised entirely of courses within MxCC's Digital Media Production A.S. degree, students may switch to pursue the full degree instead of or in addition to the certificate with no penalties.

Requirements			
Course	CR	Semester Taken	Grade
ART*121 Two-Dimensional Design	3		
DGA*110 Computer Graphics	3		
DGA*120 Digital Image Editing I	3		
DGA/COM*125 New Media Production	3		
DGA*250 Interactive Multimedia Production	3		
GRA*150 Introduction to Graphic Design or DGA*260 Animation	3		
ART/COM/DGA/GRA Elective	3		
ART/COM/DGA/GRA Elective	3		
ENG*101 College Composition or Open Elective when taken as part of the New Media Production degree program or if student already has a degree. Open Elective	3		
COM*287 Advanced Media Production or COM*295 Internship	3		
<b>Total Credits</b>	<b>30</b>		

# NEWS & SPORTS PRODUCTION CERTIFICATE

## *Humanities and Creative Arts*

**Program Coordinator:** Professor Richard Lenoce

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5796

**Email:** [rlenoce@mxcc.edu](mailto:rlenoce@mxcc.edu)

### DESCRIPTION

The News and Sports Certificate offers hands-on education in the exciting field of news and sports production as used in the broadcast, event videography and digital media industries. Students will learn news and sports journalism as well as field, studio, and remote production in their courses. COM\*295 Internship act as a capstone course providing students with portfolio work and on-site work experiences in preparation for employment.

This 30-credit certificate program is intended as a stackable credential for students looking to specialize in news and sports video production. When enrolling in this program as a standalone occupational certificate, it is recommended that students entering the program either have an associate degree or higher or are enrolled in the Digital Media Production Associate degree program to improve employability upon graduation.

As the certificate is comprised entirely of courses within MxCC's Digital Media Production A.S. degree, students may switch to pursue the full degree instead of or in addition to the certificate (with no penalties).

Requirements			
Course	CR	Semester Taken	Grade
COM*129 Digital Video Production	3		
Art*147/COM*147 Digital Cinematography or COM*131 Audio Production	3		
DGA*110 Computer Graphics or DGA*120 Digital Imaging	3		
ENG101 College Composition or COM101 Mass Communications if student holds a degree or enrolled in the Digital Media production degree program.	3		
COM*111 Scriptwriting	3		
COM*220 Television Studio Production	3		
COM*226 Journalism	3		
COM*228 Broadcast Journalism	3		
COM*264 Advanced Editing	3		
COM*295 Internship	3		
<b>Total Credits</b>	<b>30</b>		



# NUTRITION & DIETETICS ADVISING PATHWAY TO GATEWAY CC

## *Health Careers*

**Pathway Advisor:** Dr. Judy Wallace

**Office Location:** Wheaton Hall, Room 209

**Telephone:** (860) 343-5780

**Email:** [jwallace@mxcc.edu](mailto:jwallace@mxcc.edu)

### **DESCRIPTION**

Careers in nutrition or dietetics are available to individuals with Associate, Bachelor's and Master's Degrees and include a wide range of professional opportunities including food preparation and management, nutrition program implementation, public health, education and research, and private practice.

The Nutrition & Dietetics Advising Pathway allows MxCC students to take 30 credit hours which will transfer as nine courses (29 credits) required by Gateway Community College's Nutrition and Dietetics Program. Gateway's program prepares students as Dietetic Technicians, Registered, qualified to take the DTR Examination. Please see notes (below) for information regarding course equivalencies. The transfer agreement is reflected in a Memorandum of Understanding.

<b>COURSES TAKEN AT MXCC</b>	<b>CREDITS</b>
HLT*103 Investigations into Health Careers	3
NTR*100 Introduction to Nutrition and Dietetics	1
BIO*115 Human Biology	4
BIO*111 Introduction to Nutrition	3
ENG*101 Composition	3
ENG*102 Literature and Composition or ENG*200 Advanced Composition	3
MAT*137 Intermediate Algebra	3
COM*173 Public Speaking	3
CHE*111 Concepts of Chemistry	4
Social Science Elective (SOC/HLT 160, Introduction to Public Health, recommended but not required)	3
<b>Total credits:</b>	<b>30</b>

### **Note these course equivalencies:**

<b>MxCC Advising Pathway</b>	<b>Gateway AS</b>
BIO*111	NTR*102
MAT*137	MAT*115
COM*173	COM*171
HLT*103 + NTR*100	NTR*101

# OPHTHALMIC DESIGN & DISPENSING ASSOCIATE DEGREE

## *Health Careers*

---

**Program Coordinator:** Dr. Aarlan Aceto

**Office Location:** Chapman Hall, Room 625

**Telephone:** (860) 343-5846

**Email:** [aaceto@mxcc.edu](mailto:aaceto@mxcc.edu)

### **DESCRIPTION**

This program is designed for individuals who are interested in becoming licensed opticians. Successful completion of this program will be accepted in lieu of the four-year, 8000-hour apprenticeship requirement to become a licensed optician.

Enrollment in the program is restricted because of limited lab facilities, and early application is encouraged. Only completed applications with all documents will be considered. Students are admitted to the fall term only. Students must take the placement test and place into ENG\*101 Composition and MAT\*137 to be eligible for this program. Official transcripts are required for transfer credit. Ophthalmic Design and Dispensing students must receive a grade of C or better in Ophthalmic Dispensing courses in order to obtain a degree in this program.

The Ophthalmic Design and Dispensing Program is accredited by the Commission on Opticianry Accreditation, One Dupont Circle NW, Suite 510, Washington DC 20036-1135.

### **LEARNING OUTCOMES**

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

- Communicate effectively through development of proficiency in oral/written/electronic communication skills
- Demonstrate proficiency in critical thinking and problem solving skills
- Complete the requirements for National Certification by the American Board of Opticianry
- Complete the requirements for National Certification by the National Contact Lens Examiners
- Demonstrate the practical skills required to successfully complete the optical portion of the State of Connecticut – Board of Examiners State Practical Exam
- Demonstrate the practical skills required to successfully complete the contact lens portion of the State of Connecticut – Board of Examiners State Practical Exam
- Demonstrate familiarity with the statutes and regulations in Chapter 381 (Opticians) of the Connecticut General Statutes and Regulations and successfully complete the State Law portion of the State of Connecticut – Board of Examiners State Practical Exam
- Meet the minimum education requirement for licensing as an optician in all of the states requiring licensure for opticians

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## OPHTHALMIC DESIGN & DISPENSING

Associate in Science Degree  
Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the CSCU system.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 14 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Gen Ed: Quantitative Reasoning for Career Programs</b>	MAT*137 (or MAT*137E): Intermediate Algebra (or higher, depending on placement)	3		
<b>Program Requirement</b>	ODD*101: Introduction to Ophthalmic Dispensing	4		
<b>Gen Ed: Scientific Knowledge &amp; Understanding OR Scientific Reasoning</b>	BIO*118: Anatomy & Physiology of the Eye	4		
<b>Second Semester (Spring) – 17 credits</b>				
<b>Program Requirement</b>	BMG*202: Principles of Management	3		
<b>MxCC General Education Requirement (1 of 2)</b>	COM*173: Public Speaking	3		
<b>Program Requirement</b>	ODD*102: Ophthalmic Dispensing I	4		
<b>Program Requirement</b>	ODD*110: Ophthalmic Materials I	4		
<b>Program Requirement</b>	ODD*120: Contact Lenses I	3		
<b>Summer Semester – 6 credits</b>				
<b>Program Requirement</b>	ODD*109: Optical Business Management	3		
<b>Program Requirement</b>	ODD*130: Low Vision	1		
<b>Program Requirement</b>	ODD*299: Opticianry Practicum	2		
<b>Third Semester (Fall) – 14 credits</b>				
<b>Gen Ed: Social Phenomena</b>		3		
<b>Program Requirement</b>	ODD*103: Ophthalmic Dispensing II	3		
<b>Program Requirement</b>	ODD*111: Ophthalmic Materials II	4		
<b>Program Requirement</b>	ODD*121: Contact Lenses II	4		
<b>Fourth Semester (Spring) – 17 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>		3		
<b>MxCC General Education Requirement (2 of 2)</b>	PSY*111: General Psychology I	3		
<b>Program Requirement</b>	ODD*104: Ophthalmic Dispensing III	3		
<b>Program Requirement</b>	ODD*112: Ophthalmic Materials III	4		
<b>Program Requirement</b>	ODD*122: Contact Lenses III	4		
<b>TOTAL CREDITS</b>		<b>68</b>		

# OPHTHALMIC MEDICAL ASSISTING CERTIFICATE

## *Health Careers*

**Program Coordinator:** Dr. Aarlan Aceto

**Office Location:** Chapman Hall, Room 625

**Telephone:** (860) 343-5846

**Email:** [aaceto@mxcc.edu](mailto:aaceto@mxcc.edu)

### DESCRIPTION

This program is designed for individuals who are interested in becoming ophthalmic or optometric assistants. Successful completion of this program will prepare our students for employment as an ophthalmic or optometric assistant and will assist the student in preparing for National Certification as a Certified Ophthalmic Assistant (COA). The courses will utilize the text, *Ophthalmic Medical Assisting, An Independent Study Source* (5th Edition), published by the American Academy of Ophthalmology (AAO) and recommended by the Joint Commission on Allied Health Personnel in Ophthalmology (JCAHPO) for preparation for the Certified Ophthalmic Assistant examination.

Students will be provided with all of the information they need to register for and take the certification exam once they have completed the coursework and clinical hours requirement. The College will offer assistance in placing students in employment in ophthalmology or optometry practices in the state or region. Enrollment in the program is restricted because of limited lab facilities, and early application is encouraged. Only completed applications with all required documents will be considered. Students are admitted in either the fall or spring semester. Students must take the placement test and place into ENG\*101 Composition or ENG\*101E or show evidence of successful completion of an equivalent level of English course(s) to be eligible for this program.

Requirements	Cr	Semester Taken	Grade
CSC*101: Intro to Computers	3		
OMA*101: Introduction to Ophthalmic Medical Assisting	3		
OMA*102: Ocular Anatomy, Physiology, and Pathology	3		
OMA*103: Ophthalmic Clinical Skills and Procedures	4		
OMA*104: Healthcare Policies and Procedures	3		
<b>TOTAL CREDITS</b>	<b>16</b>		

# PATIENT CARE TECHNICIAN

## ***Health Careers/Non-Credit Certificate***

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website With Complete Info:** [mxcc.edu/ce/courses/pct](http://mxcc.edu/ce/courses/pct)

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

WIOA, HCAP, SNAP, VA funding eligible. The Patient Care Technician (PCT) Certificate program is an exciting opportunity for Certified Nurse Aides to advance their skills, earn a better salary, and have more job options in a changing employment market. PCTs are valued members of many health care teams. They work in hospitals, rehabilitation settings, physician offices, clinics, and long-term care facilities. Upon completion of this program, students are eligible to sit for the National Health Career Association Certified Patient Care Technician Exam. This program does not prepare students to become Certified Phlebotomy Technicians or certified EKG technicians.

### **PREREQUISITES**

1) Current CNA license required, 2) High-school diploma or GED, and 3) English language competency. An ESL evaluation is recommended. To schedule your evaluation please call the MxCC Academic Success Center at 860-343-5770 and ask for an appointment to take the CNA ESL test. There is no charge. 4) A criminal background check and drug screen are required. Students who have a criminal record are denied access to clinical training sites. Note: Convicted felons may have difficulty finding employment in the healthcare field.

### **PROGRAM REQUIREMENTS**

The following 5 courses are included in the PCT program:

- 1) Advanced Nurse Aide
- 2) Phlebotomy Skills for the PCT
- 3) ECG and Pulse Oximetry
- 4) CPR or BLS
- 5) Hospital Clinical Experience (optional)

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **HCAP funding** – Omayra Vega • 203-624-1493 ext.216 / [ovega@workforcealliance.biz](mailto:ovega@workforcealliance.biz) or TaMesha Greene • 203-238-3688 ext.307 / [tgreene@workforcealliance.biz](mailto:tgreene@workforcealliance.biz).
- **CT Pathways (SNAP)** – Jennifer Mueller • [jmueller@mxcc.edu](mailto:jmueller@mxcc.edu).
- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 / [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)

# PERSONAL TRAINER CERTIFICATE

## *Health Careers/Non-Credit Certificate*

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website With Complete Info:** [mxcc.edu/ce/courses/personal-trainer](http://mxcc.edu/ce/courses/personal-trainer)

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

Certified Personal Trainer Course with Test Voucher Included

Get all the information needed to start an exciting fitness career & become a Certified Personal Trainer. It is a great way to become a successful Certified Personal Trainer with an option to complete an employer internship that can walk you into jobs. This challenging course is for candidates wanting LIVE instruction with in-depth, hands-on practical labs to master the essential career skills & knowledge. The course consists of 15 hours of lecture on key topics like biomechanics, exercise physiology, fitness testing, equipment usage, health assessment & 15 hours of hands-on practical training labs with role playing drills on assessing clients, programming, performing proper exercises, presentation skills and more. Included in this course is a 200-page student workbook, access to online student study tools and test vouchers to take the Certified Personal Trainer exams. You can work right after passing the exams with proof of CPR with AED which awards you Level 1 Certified Personal Trainer credential. As a special bonus, you can take advantage of our 30-hour employer internship to get the advanced Level 2 Certified Personal Trainer at no additional cost. Students must provide their own transportation to practical site.

### **ONLINE OPTION**

Our Personal Trainer Hybrid Online program provides an option for students who wish to take advantage of distance learning opportunities. The hybrid version has all of the awesome lectures online with incredible veteran mentors/teachers working with you every step of the way. As a bonus the practical labs are still offered LIVE so you can master the skills. Do the lecture work online in your available schedule Then join the LIVE class practical labs each week at their designated day and time.

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 / [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)

# PHARMACY TECHNICIAN NON-CREDIT CERTIFICATE

## *Health Careers/Non-Credit Certificate*

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website With Complete Info:** [mxcc.edu/ce/courses/pharmacy-technician](http://mxcc.edu/ce/courses/pharmacy-technician)

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

WIOA, HCAP, SNAP, VA funding eligible. This program is offered in partnership with the Connecticut Pharmacists Association. This comprehensive, 60-hour course prepares you for an entry-level position in a community, hospital, or long-term care setting. Topics include medical terminology specific to the pharmacy, reading and interpreting prescriptions, and defining drugs by generic and brand names. Learn dosage calculation, I.V. flow rates, drug compounding, and dose conversion. Develop your knowledge of prescription dispensing, inventory control, billing, and insurance reimbursement. This program is an excellent review for the Pharmacy Technician Certification Board (PTCB) national certification exam (not included in this course fee). Note: Individuals convicted of a felony are not permitted to sit for the exam.

### **PREREQUISITE**

Students must take a math Basic Skills Assessment prior to enrollment. To schedule an appointment, call the Academic Success Center at 860-343-5770 and ask for the Pharmacy Technician math assessment. This requirement is waived for students who submit SAT or ACT scores, or a transcript showing enrollment in a college level math course. Proficiency in English literacy (may need to take the Accuplacer English test to assess level) and proof of high school diploma or GED are also required.

### **PHARMACY TECHNICIAN CERTIFICATION EXAM INFORMATION**

The Pharmacy Technician Certification Board (PTCB) offers the Pharmacy Technician Certification Exam. For more information please visit [www.ptcb.org](http://www.ptcb.org). Students who complete the Pharmacy Technician program are eligible to receive college credit through Charter Oak State College.

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **CT Pathways (SNAP)** – Jennifer Mueller • [jmueller@mxcc.edu](mailto:jmueller@mxcc.edu).
- **HCAP funding** – Omayra Vega • 203-624-1493 ext.216 / [ovega@workforcealliance.biz](mailto:ovega@workforcealliance.biz) or TaMesha Greene • 203-238-3688 ext.307 / [tgreene@workforcealliance.biz](mailto:tgreene@workforcealliance.biz).
- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 / [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)



# PHLEBOTOMY TECHNICIAN NON-CREDIT CERTIFICATE

## *Health Careers/Non-Credit Certificate*

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website With Complete Info:** [mxcc.edu/ce/courses/phlebotomy-technician](http://mxcc.edu/ce/courses/phlebotomy-technician)

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

WIOA, HCAP, CT Pathways (SNAP) eligible. Phlebotomy technicians are valuable members of the healthcare team who collect and prepare lab specimens for analysis. In this course, you will learn about phlebotomy procedures and practice blood drawing techniques. This is a 120-hour program that includes classroom learning and simulation labs. Topics include medical terminology, anatomy and physiology, venipuncture, specimen collection procedures, safety and universal precautions, common laboratory tests with clinical significance to body systems and disease processes, and laboratory equipment. Following the program, you will complete an internship at Middlesex Hospital Outpatient Laboratory. Weekday internships are scheduled by the instructor and may extend past the last class date. Scheduling requests can be made, but are not guaranteed. Students must have transportation to internship sites. This program is recognized by American Medical Technologists, a premier national certification agency. Upon completion of this program, students are eligible for National Certification through American Medical Technologists.

### **PREREQUISITES:**

1) Must be 18 years old. 2) High school diploma or GED. 3) Health form complete with immunizations and 2 step TST. 4) Personal medical insurance. 5) Clean criminal background. A criminal background check may be performed. Students who have a criminal record are denied access to clinical internship sites.

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **CT Pathways (SNAP)** – Jennifer Mueller • [jmueller@mxcc.edu](mailto:jmueller@mxcc.edu)
- **HCAP funding** – Omayra Vega • 203-624-1493 ext.216 / [ovega@workforcealliance.biz](mailto:ovega@workforcealliance.biz) or TaMesha Greene • 203-238-3688 ext.307 / [tgreene@workforcealliance.biz](mailto:tgreene@workforcealliance.biz)
- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 / [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)

# PHYSICS STUDIES ASSOCIATE DEGREE

## STEM (Science, Technology, Engineering, Math)

Pathway Advisor: Dr. Mark Busa

Office Location: Wheaton Hall, Room 217

Telephone: (860) 343-5779

Email: [mbusa@mxcc.edu](mailto:mbusa@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 14-15 credits</b>				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Gen Ed: Quantitative Reasoning	MAT*254: Calculus I	4		
Gen Ed: Scientific Reasoning	CHE*121: General Chemistry I	4		
Unrestricted Elective	<i>Recommended: PHY*110: Introduction to Physics if haven't taken High School Physics.</i>	3-4		
<b>Second Semester (Spring) – 15 credits</b>				
Gen Ed: Scientific Knowledge	CHE*122: General Chemistry II	4		
Program Requirement	MAT*256: Calculus II	4		
Program Requirement	PHY*221: Calculus-Based Physics I	4		
Gen Ed: Historical Knowledge		3		
<b>Third Semester (Fall) – 17 credits</b>				
Program Requirement	MAT*268: Calculus III: Multivariable	4		
Program Requirement	PHY*222: Calculus-Based Physics II	4		
Gen Ed: Social Phenomena I		3		
Gen Ed: Aesthetic Dimension		3		
Gen Ed: Social Phenomena II		3		
<b>Fourth Semester (Spring) – 15 credits</b>				
Program Requirement	MAT*285: Differential Equations	3		
Gen Ed: Written Communication II		3		
Gen Ed: Oral Communication		3		
Additional Gen Ed: Creativity		3		
Additional Gen Ed: Global Knowledge		3		
<b>TOTAL CREDITS</b>		<b>61-62</b>		
<i>Unrestricted Elective: Any course numbered 100 or above.</i>				

# POLITICAL SCIENCE STUDIES ASSOCIATE DEGREE

## *Social and Behavioral Sciences, Education, and Public Service*

Pathway Advisor: Professor Tad Lincoln

Office Location: Snow Hall, Room 508

Telephone: (860) 343-5817

Email: [tlincoln@mxcc.edu](mailto:tlincoln@mxcc.edu)

This program is a CSU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication I	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	POL*111: American Government	3		
Gen Ed: Quantitative Reasoning		3		
Gen Ed: Aesthetic Dimension		3		
Unrestricted Elective		3		
Second Semester (Spring) – 15-16 credits				
Program Requirement	POL Elective	3		
Gen Ed: Scientific Reasoning *		3-4		
Gen Ed: Written Communication II		3		
Gen Ed: Historical Knowledge		3		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Program Requirement	POL Elective	3		
Gen Ed: Scientific Knowledge *		3-4		
Gen Ed: Social Phenomena I		3		
Additional Gen Ed: Creativity		3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 15 credits				
Gen Ed: Social Phenomena II		3		
Gen Ed: Oral Communication		3		
Additional Gen Ed: Global Knowledge		3		
Unrestricted Elective		3		
Unrestricted Elective		3		
TOTAL CREDITS		60-61		
*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.				
** Unrestricted Elective: Any course numbered 100 or above.				

# PSYCHOLOGY STUDIES ASSOCIATE DEGREE

## *Social and Behavioral Sciences, Education, and Public Service*

**Discipline Coordinator:** Dr. Andrea Levy

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5815

**Email:** alevy@mxcc.edu

This program is a CSU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	PSY*111: General Psychology I	3		
Gen Ed: Social Phenomena I		3		
Gen Ed: Aesthetic Dimension		3		
Unrestricted Elective		3		
Second Semester (Spring) – 15-16 credits				
Program Requirement	Choose one of the following: PSY*201: Life Span Development PSY*204: Child and Adolescent Development PSY*208: Psychology of Adult Development and Aging	3		
Program Requirement	Choose one of the following: PSY*240: Social Psychology PSY*243: Theories of Personality PSY*247: Industrial and Organizational Psychology	3		
Gen Ed: Scientific Reasoning *		3-4		
Gen Ed: Written Communication II		3		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Program Requirement	Choose one of the following that you have not taken PSY*240: Social Psychology PSY*243: Theories of Personality PSY*247: Industrial and Organizational Psychology OR Unrestricted Elective	3		
Gen Ed: Scientific Knowledge *		3-4		
Gen Ed: Quantitative Reasoning	MAT*167: Principles of Statistics	3		
Additional Gen Ed: Creativity		3		
Gen Ed: Historical Knowledge		3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	PSY*245: Abnormal Psychology	3		
Gen Ed: Oral Communication		3		
Additional Gen Ed: Global Knowledge		3		
Gen Ed: Social Phenomena II		3		
Unrestricted Elective		3		
TOTAL CREDITS		60-61		
*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.				
** Unrestricted Elective: Any course numbered 100 or above.				

# RADIOLOGIC TECHNOLOGY ASSOCIATE DEGREE

## *Health Careers*

---

**Program Coordinator:** Dr. Judy Wallace  
**Office Location:** Wheaton Hall, Room 209  
**Telephone:** (860) 343-5780  
**Email:** [jwallace@mxcc.edu](mailto:jwallace@mxcc.edu)

### **DESCRIPTION**

The Radiologic Technology Program prepares students for entry level employment as radiologic technologists in hospitals and medical offices. It is offered as an academic program by Middlesex Community College in collaboration with Middlesex Hospital. General education courses are held at the College, while those courses requiring specialized laboratories, equipment, and hands-on practical experience are held at Middlesex Healthcare system facilities. The curriculum covers a 22-month period, including a 5 month internship (Jan-May).

Enrollment in the program is restricted by clinical facility capacity as per JRCERT accreditation guidelines.

Applicants must first meet the general college admissions procedures (see college catalog). Once these requirements are met, the applicant must provide the college with the following information by April 1 of the year in which admission is sought: three completed Applicant/Information Reference Forms, a one-page biography stating goals/reasons for program entry, and present the Observation/Documentation Form demonstrating completion of a two hour program observation at an imaging department within a hospital facility. In addition, college applicants need a 2.7 GPA for all college work. A grade of C+ or better taken within the past five years is required in Anatomy & Physiology I & II. Final admission procedures for candidate selection involves an interview with an interview committee and a personal background check, which is a hospital requirement to do clinical training at Middlesex Health Care System facilities. Admission to the college does NOT GUARANTEE admission to the radiology technology program.

The Radiologic Technology Program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182. <http://www.jrcert.org/>

### **A NOTE ABOUT PROGRAM REQUIREMENTS**

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

## RADIOLOGIC TECHNOLOGY

Associate in Science Degree, Career-Oriented Program

This program is a Career-Oriented Degree that provides skills and knowledge, often in the form of a credential or qualification, that allow for direct entry into the work force. These degrees may serve as transfer degrees with or without a guarantee that additional credits will not be needed at the baccalaureate level within the C SCU system.

Category	Course	Cr	Semester Taken	Grade
<b>Admission Requirements – 7 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition with a C or better	3		
<b>Admissions Requirement</b>	BIO*211: Human Anatomy & Physiology I with a C+ or better taken within the past 5 years.	4		
<b>Prerequisite Requirement – 4 credits</b>				
<b>Prerequisite Requirement</b>	BIO*212: Human Anatomy & Physiology II with a C+ or better taken within the past 5 years but no later than the spring semester of application year.	4		
<b>First Semester (Fall) – 16 credits</b>				
<b>Gen Ed: Scientific Knowledge &amp; Understanding</b>	PHY*110: Introductory Physics	4		
<b>Program Requirement</b>	MED*125: Medical Terminology	3		
<b>Gen Ed: Quantitative Reasoning for Career Programs</b>	MAT*137 (or MAT*137E): Intermediate Algebra	3		
<b>Program Requirement</b>	RAD*105: Radiographic Anatomy & Procedures I	3		
<b>Program Requirement</b>	RAD*109: Methods of Patient Care I	1		
<b>Program Requirement</b>	RAD*171: Radiographic Clinical Practicum I	2		
<b>Second Semester (Spring) – 14 credits</b>				
<b>Gen Ed: Scientific Reasoning</b>	PSY*111: General Psychology I	3		
<b>Program Requirement</b>	RAD*209: Methods of Patient Care II	3		
<b>Program Requirement</b>	RAD*172: Radiographic Clinical Practicum II	2		
<b>Program Requirement</b>	RAD*219: Radiographic Equipment and Image Production	3		
<b>Program Requirement</b>	RAD*204: Radiographic Anatomy & Procedures II	3		
<b>Summer Session – 7 credits</b>				
<b>Program Requirement</b>	RAD*240: Radiographic Clinical Practicum III	4		
<b>Program Requirement</b>	RAD*200: Radiologic Physics & Diagnostic Imaging Modalities	3		
<b>Third Semester (Fall) – 14 credits</b>				
<b>Gen Ed: Aesthetic Dimensions</b>		3		
<b>Program Requirement</b>	RAD*222: Radiobiology and Protection	3		
<b>Program Requirement</b>	RAD*223: Pathology for Medical Imaging	2		
<b>Program Requirement</b>	RAD*206: Quality Assurance	3		
<b>Program Requirement</b>	RAD*241: Radiographic Clinical Practicum IV	3		
<b>Fourth Semester (Spring) – 6 credits</b>				
<b>Gen Ed: Social Phenomena</b>	RAD*271: Advanced Clinical Internship	6		
<b>TOTAL CREDITS</b>		<b>68</b>		

# REAL ESTATE PRINCIPLES & PRACTICES

## ***Non-Credit Certificate***

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website with Complete Info:** <http://mxcc.edu/ce/courses/real-estate/>

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

WIOA, VA funding eligible. Interested in stepping foot onto the path of becoming a licensed real estate salesperson? You have come to right place. Middlesex Community College is working with the CT Department of Consumer Protection to give students an extensive understanding of how the real estate marketplace works. You will learn about land use controls and regulations, market analysis, financing, contracts and transfer of titles. This course prepares you for the practice of real estate and provides you with an understanding of real estate law and ethical practice. Students must attend 60 hours and pass this course with a grade of 70 in order to qualify for the state licensing exam (PSI exam).

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 / [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)



# SECURITY OFFICER CERTIFICATION

## ***Social and Behavioral Sciences, Education, and Public Service / Non-Credit Certificate***

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website with Complete Info:** <http://mxcc.edu/ce/courses/ct-security-officer-certification/>

### **ABOUT NON-CREDIT CERTIFICATES**

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

### **DESCRIPTION**

WIOA, SNAP funding available. Security Officer positions are available in many businesses, such as, security agencies, retail, hospitals, banks, housing complexes and construction. Connecticut General Statute #29-161(q) mandates that all State of Connecticut security officers complete an 8-hour training course for certification. Successful completion of this day-long course fulfills the requirement. You will be learning essential information required for security officers from an instructor approved by the Commissioner of the Department of Public Safety to teach this course. The course covers an overview of private security, public safety issues, search and seizure, use of force, basic criminal justice and basic first aid. Participants are required to complete a written exam at the end of the course and achieve a passing grade of 75%. Upon successful completion, students apply for a Security Office Identification Card from the State of Connecticut at no additional cost. This procedure will be covered in class. Please bring a lunch to class. Note: students who have a criminal background are not eligible for State of Connecticut Security Officer Certification.

### **FINANCIAL ASSISTANCE**

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **CT Pathways (SNAP)** – Jennifer Mueller • [jmueller@mxcc.edu](mailto:jmueller@mxcc.edu)

# SOCIAL WORK STUDIES ASSOCIATE DEGREE

## *Social and Behavioral Sciences, Education, and Public Service*

**Program Coordinator:** Dr. Jennifer Hernandez

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5816

**Email:** [jhernandez@mxcc.edu](mailto:jhernandez@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	HSE*101: Introduction to Human Services	3		
<b>Gen Ed: Quantitative Reasoning</b>	MAT*167: Principles of Statistics	3		
<b>Gen Ed: Aesthetic Dimension</b>		3		
Unrestricted Elective		3		
<b>Second Semester (Spring) – 16 credits</b>				
<b>Gen Ed: Social Phenomena I</b>	SOC*101: Principles of Sociology	3		
<b>Gen Ed: Social Phenomena II</b>	POL*111: American Government	3		
<b>Gen Ed: Scientific Reasoning</b>	BIO*115: Human Biology w/lab	4		
<b>Gen Ed: Historical Knowledge</b>		3		
<b>Gen Ed: Written Communication II</b>		3		
<b>Third Semester (Fall) – 15 credits</b>				
Program Requirement	SOC*103: Social Problems	3		
Program Requirement	ANT*205: Cultural Anthropology	3		
Program Requirement	PSY*111: General Psychology I	3		
<b>Gen Ed: Scientific Knowledge</b>		3		
<b>Additional Gen Ed: Creativity</b>		3		
<b>Fourth Semester (Spring) – 15 credits</b>				
Program Requirement	Choose one from: HSE*202: Introduction to Counseling and Interviewing HSE*288: Developmental Practicum HSE*289: Psychiatric Practicum	3		
Program Requirement	Choose one of the following that you have not taken HSE*202: Introduction to Counseling and Interviewing HSE*288: Developmental Practicum HSE*289: Psychiatric Practicum Unrestricted Elective	3		
<b>Gen Ed: Oral Communication</b>		3		
<b>Additional Gen Ed: Global Knowledge</b>		3		
Unrestricted Elective		3		
<b>TOTAL CREDITS</b>		60-61		
<i>Unrestricted Elective: Any course numbered 100 or above.</i>				

# SOCIOLOGY STUDIES ASSOCIATE DEGREE

## *Social and Behavioral Sciences, Education, and Public Service*

**Discipline Coordinator:** Dr. John Ambenge

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5810

**Email:** jambenge@mxcc.edu

This program is a CSU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 15 credits</b>				
<b>Gen Ed: Written Communication</b>	ENG*101 (or ENG*101E): Composition	3		
<b>Program Requirement</b>	SOC*101: Principles of Sociology	3		
<b>Gen Ed: Historical Knowledge</b>		3		
<b>Gen Ed: Aesthetic Dimension</b>		3		
<b>Unrestricted Elective</b>		3		
<b>Second Semester (Spring) – 15- 16 credits</b>				
<b>Program Requirement</b>	SOC Elective	3		
<b>Gen Ed: Written Communication II</b>		3		
<b>Gen Ed: Scientific Reasoning *</b>		3-4		
<b>Gen Ed: Quantitative Reasoning</b>	CCSU Recommend MAT*167: Principles of Statistics	3		
<b>Unrestricted Elective</b>		3		
<b>Third Semester (Fall) – 15- 16 credits</b>				
<b>Program Requirement</b>	SOC Elective: 200 Level	3		
<b>Gen Ed: Scientific Knowledge *</b>		3		
<b>Gen Ed: Social Phenomena I</b>		3-4		
<b>Additional Gen Ed: Creativity</b>		3		
<b>Unrestricted Elective</b>		3		
<b>Fourth Semester (Spring) – 15 credits</b>				
<b>Program Requirement</b>	SOC Elective: 200 Level	3		
<b>Gen Ed: Oral Communication</b>		3		
<b>Gen Ed: Social Phenomena II</b>		3		
<b>Additional Gen Ed: Global Knowledge</b>		3		
<b>Unrestricted Elective</b>		3		
<b>TOTAL CREDITS</b>		<b>60-61</b>		
*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.				
** Unrestricted Elective: Any course numbered 100 or above.				

# SOFTWARE DEVELOPER CERTIFICATE

## STEM (Science, Technology, Engineering, Math)

**Program Coordinator:** Professor Donna Hylton

**Office Location:** Snow Hall, Room 512

**Telephone:** (860) 343-5774

**Email:** [dhylton@mxcc.edu](mailto:dhylton@mxcc.edu)

### DESCRIPTION

This certificate targets the skills required in the field of software development, including algorithm design, writing programs in Java and C#, developing applications for mobile devices, and designing and creating databases. Additionally, students will learn about the systems development life cycle and how technology is used to solve business problems. Students will problem solve, learn about the Information Technology (IT) industry, and explore object-oriented programming languages. Certificate recipients may apply these skills to seek entry-level positions in related areas of IT.

The Software Developer Certificate program is a 24-credit program; the courses required by this certificate may transfer to the Computer Information Technology Associate degree programs at MxCC.

### A NOTE ABOUT PROGRAM REQUIREMENTS

The program requirements listed in this Catalog are for students entering into this program in Fall 2019 or Spring 2020. Students who entered the program during a prior semester will find their specific requirements listed in the Catalog under which they entered. Archived Catalogs are accessible through the college website at [mxcc.edu/catalogs-and-schedules](http://mxcc.edu/catalogs-and-schedules).

Requirements	Cr	Semester Taken	Grade
CSA*140: Database Applications	3		
CSC*105: Programming Logic	3		
CSC*220: Object-Orient Programming Using Java	3		
CSC*231: Database Design I	3		
CSC*249: Contemporary Business Application Development I	3		
CSC*262: Programming Mobile Devices	3		
CSC*295: Coop Ed/Work Experience	3		
CST*201: Intro to Management Information Systems	3		
<b>TOTAL CREDITS</b>	<b>24</b>		

# SPANISH STUDIES ASSOCIATE DEGREE

## *Humanities and Creative Arts*

**Pathway Advisor:** Professor Angelo Glaviano

**Office Location:** Snow Hall, Room 520

**Telephone:** (860) 343-5807

**Email:** [aglaviano@mxcc.edu](mailto:aglaviano@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	SPA*101: Elementary Spanish I	3		
Gen Ed: Social Phenomena I		3		
Gen Ed: Aesthetic Dimension		3		
Unrestricted Elective		3		
Second Semester (Spring) – 15-17 credits				
Program Requirement	SPA*102: Elementary Spanish II	3		
Gen Ed: Written Communication II		3		
Gen Ed: Scientific Reasoning *		3-4		
Gen Ed: Quantitative Reasoning		3-4		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Program Requirement	SPA*201: Intermediate Spanish I	3		
Gen Ed: Scientific Knowledge *		3-4		
Gen Ed: Social Phenomena II		3		
Additional Gen Ed: Creativity		3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	SPA*202: Intermediate Spanish II	3		
Gen Ed: Oral Communication		3		
Gen Ed: Historical Knowledge		3		
Additional Gen Ed: Global Knowledge		3		
Unrestricted Elective		3		
TOTAL CREDITS		60-61		
<i>*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.</i>				
<i>** Unrestricted Elective: Any course numbered 100 or above.</i>				

# TECHNOLOGY STUDIES

## ASSOCIATE DEGREE

### STEM (Science, Technology, Engineering, Math)

**Program Coordinator:** Dr. Lin Lin  
**Office Location:** Wheaton Hall, Room 313  
**Telephone:** (860) 343-5763  
**Email:** llin@mxcc.edu

The College of Technology is a specialized curriculum that allows a student to begin technology or engineering technology studies at any of the state's twelve Community Colleges with the ultimate goal of achieving a 4-year, baccalaureate degree in Technology at Central Connecticut State University or Charter Oak State College. The curriculum is designed to serve as the first two years of the Bachelor of Science degree. Some courses in this program may not be offered at Middlesex Community College but can be taken at other Connecticut community colleges.

Category	Course	Cr	Semester Taken	Grade
<b>First Semester (Fall) – 16 credits</b>				
<b>Gen Ed:</b> Aesthetic Dimensions	Fine Arts Elective	3		
<b>Gen Ed:</b> Written Communication	ENG*101: Composition	3		
<b>General Education Requirement</b>	HIS* OR ECN* Elective	3		
Program Requirement	MAT*186: Precalculus	4		
<b>General Education Requirement</b>	GEO*, HIS* OR POL* Elective	3		
<b>Second Semester (Spring) – 18 credits</b>				
<b>Gen Ed:</b> Oral Communication	COM*173: Public Speaking	3		
<b>Gen Ed:</b> Social Phenomena (1 of 2)	ECN* Elective	3		
<b>Gen Ed:</b> Social Phenomena (2 of 2)	PSY* OR SOC* Elective	3		
<b>General Education Requirement</b>	PHL* Elective	3		
<b>Gen Ed:</b> Written Communication	ENG*202: Technical Writing	3		
Program Requirement	CAD* Elective	3		
<b>Third Semester (Fall) – 17 credits</b>				
<b>Gen Ed:</b> Scientific Knowledge & Understanding	CHE*111: Concepts of Chemistry OR CHE*121: General Chemistry I	4		
<b>Gen Ed:</b> Scientific Reasoning	PHY*110: Introductory Physics OR PHY*121: General Physics I	4		
<b>Gen Ed:</b> Quantitative Reasoning	MAT*167: Principles of Statistics	3		
Program Requirement	Directed Elective **	3		
Program Requirement	Directed Elective **	3		
<b>Fourth Semester (Spring) – 15 credits</b>				
Program Requirement	Technical Elective **	3		
Program Requirement	Technical Elective **	3		
Program Requirement	Technical Elective **	3		
Program Requirement	Technical Elective **	3		
Program Requirement	Technical Elective **	3		
<b>TOTAL CREDITS</b>		<b>66</b>		
++ Please consult Program Coordinator.				

# THEATRE STUDIES ASSOCIATE DEGREE

## *Humanities and Creative Arts*

**Pathway Advisor:** Professor John Shafer

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5811

**Email:** [jshafer@mxcc.edu](mailto:jshafer@mxcc.edu)

This program is a CSCU TAP Transfer Degree that is intended for Connecticut Community College students to transfer to Connecticut State Universities and Charter Oak State College without either losing any credits or being required to take extra credits in order to complete a bachelor's degree in that same discipline.

Category	Course	Cr	Semester Taken	Grade
First Semester (Fall) – 15-16 credits				
Gen Ed: Written Communication	ENG*101 (or ENG*101E): Composition	3		
Program Requirement	THR*102: Theater History I	3		
Program Requirement	THR*110: Acting I	3		
Gen Ed: Social Phenomena I		3		
Gen Ed: Scientific Reasoning *		3-4		
Second Semester (Spring) – 15 credits				
Program Requirement	THR*120: Stagecraft (not offered at MxCC)**	3		
Gen Ed: Quantitative Reasoning		3		
Gen Ed: Written Communication II		3		
Gen Ed: Historical Knowledge		3		
Unrestricted Elective		3		
Third Semester (Fall) – 15- 16 credits				
Program Requirement	THR*112: Voice and Diction (not offered at MxCC)**	3		
Gen Ed: Scientific Knowledge *		3-4		
Gen Ed: Social Phenomena II		3		
Gen Ed: Aesthetic Dimension		3		
Unrestricted Elective		3		
Fourth Semester (Spring) – 15 credits				
Program Requirement	THR*210: Acting II	3		
Gen Ed: Oral Communication		3		
Additional Gen Ed: Global Knowledge		3		
Unrestricted Elective		3		
Unrestricted Elective		3		
TOTAL CREDITS		60-61		
<i>*Note: You must Complete One science course that includes a laboratory. It can be in either the scientific reasoning or scientific knowledge category.</i>				
<i>**Middlesex does not offer THR*120 or THR*112 so in order to complete this degree, you will have to take these classes at another community college.</i>				
<i>*** Unrestricted Elective: Any course numbered 100 or above.</i>				



# THERAPEUTIC RECREATION CERTIFICATE

## *Social and Behavioral Sciences, Education, and Public Service*

**Program Coordinator:** Dr. Jennifer Hernandez

**Office Location:** Snow Hall, Room 508

**Telephone:** (860) 343-5816

**Email:** [jhernandez@mxcc.edu](mailto:jhernandez@mxcc.edu)

### DESCRIPTION

This program is designed to qualify students to work in the field of gerontology as Therapeutic Recreation Specialists and to provide in-service professional development. Students who complete the courses listed below, and thereby qualify for the Certificate, meet the standards established in the public health code of the State of Connecticut for workers in chronic care, long term care facilities, and Assisted Living facilities. This program emphasizes work with elder populations through studies in written communications, sociology, psychology, human services, therapeutic recreation, and field work.

Requirements	Cr	Semester Taken	Grade
ENG*101 Composition	3		
HSE*202 Introduction to Counseling and Interviewing	3		
HSE*288 Developmental Practicum	3		
PSY*103 Introduction to Holistic Wellness	3		
PSY*111 General Psychology	3		
RLS*121 Introduction to Therapeutic Recreation	3		
RLS*122 Processes and Techniques in Therapeutic Recreation	3		
SOC*120 Group Dynamics	3		
Directed Electives (choose Emphasis – cannot mix & match) <b>Emphasis: Older Adults</b> SOC 114 Sociology of Aging or PSY 208 Adult Develop./Aging RLS 221 Therapeutic Recreation <b>Emphasis: Developmental, Behavioral, or Psychiatric Disabilities</b> PSY 245 Abnormal Psychology PSY 251 Behavior Disorders of Children and Youth	6		
<b>Total Credits</b>	<b>30</b>		

# VETERINARY ASSISTANT

## Health Careers

---

**Program Advisor:** Diane Bordonaro, MSN, RN, Director of Non-Credit Programs

**Program Office:** Snow Hall, Room 508

**Telephone:** (860) 343-5716

**Email:** [dbordonaro@mxcc.edu](mailto:dbordonaro@mxcc.edu)

**Website With Complete Info:** [mxcc.edu/ce/courses/veterinary-assistant](http://mxcc.edu/ce/courses/veterinary-assistant)

### About Non-Credit Certificates

Non-credit Certificate programs may be comprised of a single course or several courses generally intended for occupational training, upgrading, or retraining. These programs often emphasize skills required for employment or career advancement and are offered to respond to identified workforce education needs within the respective College community. Many of these programs are designed with employers to meet or exceed industry standards and may lead to State or professional certification or licensure for successful participants.

## DESCRIPTION

WIOA, SNAP, VA funding eligible. Do you love working with animals? Are you looking for employment in the animal care industry? The Veterinary Assistant Training Program is a great way to begin your career in the animal field. The Introduction to Veterinary Assisting course provides students with the opportunity to determine if this is the right career path for them. Following the Introduction course, this program dives deeper into the animal care field focusing on the care of small animals, large animals and exotic pets in the veterinary profession. This 20-week program, involves 4 hours of weekly lectures and 4 hours of weekly clinical experience where students will complete routine tasks and specialized procedures done in the veterinary hospital. Internships provide each student with an individualized experience working in a veterinary hospital. This program follows the National Association of Veterinary Technicians guidelines for Veterinary Assistant Programs and can be a stepping stone to a Veterinary Technician Certification Program or entry level position at a veterinary facility. MxCC partners with Pieper Memorial Veterinary Hospital to offer this program.

## PREREQUISITE

1) Introduction to Veterinary Assisting Course. This requirement may be waived with written recommendation from veterinary employer or high school animal science teacher. 2) English language competency. 3) Grey scrub pants and top. 4) Students must provide their own transportation to clinical sites. 5) Health Form required. 6) Students must be physically fit, capable of kneeling to work with larger dogs, have full use of both arms in order to restrain animals, and be able to lift 50 pounds.

## FINANCIAL ASSISTANCE

Non-credit courses and certificates are not eligible for traditional college financial aid. Payment plans are available. Workforce development and other grants may be available; eligibility requirements vary. Contact Information:

- **WIOA funding** – American Job Center • 203-238-3688
- **CT Pathways (SNAP)** – Jennifer Mueller • [jmueller@mxcc.edu](mailto:jmueller@mxcc.edu).
- **Veteran's Administration** – Cynthia Valencia • 860-343-5720 • [cvalencia@mxcc.edu](mailto:cvalencia@mxcc.edu)

# VETERINARY TECHNOLOGY ASSOCIATE DEGREE

## *Health Careers*

**Program Coordinator:** Dr. Chris Gargamelli

**Office Location:** Snow Hall, Room 407

**Telephone:** (860) 343-5763

**Email:** [cgargamelli@mxcc.edu](mailto:cgargamelli@mxcc.edu)

### **DESCRIPTION**

The Veterinary Technology program is a two-year, full-time, cohort-based program offering an Associates of Science Degree in Veterinary technology. The program has selective admission. As described by the National Association of Veterinary Technicians in America, veterinary technicians are educated to be the veterinarian's nurse, laboratory technician, radiography technician, anesthetist, surgical nurse and client educator. Many are placed in a supervisory role in veterinary practices, research institutions and other employment options. Veterinary technicians can find employment in veterinary practices, biomedical research, zoo/wildlife medicine, industry, military, livestock health management, and pharmaceutical sales.

The veterinary technology program is strengthened by our community partnerships. Pieper Memorial Veterinary Hospital provides our clinical small animal, radiology, and laboratory procedure rotations. Yale University provides our laboratory animal rotation. Many area farms provide support for our large animal clinical nursing course.

All students must participate in supervised externship experiences under the direction of a licensed veterinarian, certified technician, or animal research technician. Students will refine skills learned in all veterinary technology courses through placement at an off-site veterinary hospital, private practice, or laboratory facility.

The Veterinary Technology program is accredited by the American Veterinary Medical Association – Committee on Veterinary Technician Education and Activities.

### **LEARNING OUTCOMES**

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

- Sit for the Veterinary Technician National Exam (VTNE).
- Demonstrate skills and knowledge of domestic animals including normal values for temperature, pulse, and respiration; conduct a thorough and accurate physical examination including the proper use of the stethoscope; restrain animals for physical examination and veterinary techniques.
- Perform animal nursing and critical care for all common domestic animals including: restraint, administering medications, diagnostic sampling for laboratory evaluation, maintaining fluid therapy, applying and removing bandages and splints, and applying established emergency protocols.
- Assist with animal surgery including knowledge of routine procedures and operating room equipment; prepare the patient, veterinary personnel, and equipment for sterile surgical procedures; function effectively as a surgical assistant to the veterinary surgeon during surgical procedures.
- Induce, stabilize, monitor, and maintain anesthesia under supervision of the veterinarian; recognize and report anesthetic emergencies; apply resuscitation techniques and CPR.
- Assist with diagnostic imaging including radiography and ultrasound; expose, develop, and evaluate radiographs to provide diagnostic images for veterinary interpretation and diagnosis; properly clean and maintain diagnostic imaging equipment.
- Perform common laboratory procedures: hematologic examinations, blood chemistries, urinalysis, parasitic examinations, cytological procedures, microbiological procedures, and necropsy.
- Provide competent assistance with office procedures: telephone contacts, scheduling appointments, admitting and discharging patients, maintaining medical and financial records, and establishing and maintaining a clean and orderly veterinary facility.
- Communicate with the public, clients, and colleagues through both verbal and written communication skills, including effective listening.
- Design and deliver grief-management assistance to clients and colleagues.
- Demonstrate knowledge of the common medicines used in veterinary medicine including: types and groups of drugs; labeling and packaging of dispensed drugs; using weights and measures correctly; calculating dosages; safely storing, handling, and disposing of controlled substances, biologics,

therapeutic agents, and hazardous wastes.

- Differentiate between normal and abnormal patient responses to medication.
- Understand basic knowledge of animal health and common diseases and disease processes for all common domestic animals.
- Demonstrate skills and knowledge associated with the use of common laboratory animals including

basic principles of animal research and local, state, and federal animal welfare regulations.

- Demonstrate skills and knowledge associated with cleaning, sanitizing, and sterilizing equipment and facilities, including knowledge of products, equipment, procedures, and techniques routinely used in reducing, eliminating, or preventing contamination of the animal-care institutions.

Category	Course	Cr	Semester Taken	Grade
<b>Admission Requirements – 11 credits</b>				
Admissions Prerequisite	BIO*121: General Biology I	4		
Admissions Prerequisite	CHE*111: Concepts of Chemistry	4		
Admissions Prerequisite	Computer Skills Competency <i>Demonstrated by a "pass" on the MxCC Computer Proficiency Exam, or successful completion of CSC*101 "Introduction to Computers" or equivalent course.</i>	0 (3)		
Gen Ed: Written Communication	ENG*101: Composition	3		
Gen Ed: Quantitative Reasoning for Career Programs	Mathematics Competency <i>Demonstrated by Placement Test/SAT/ACT scores which place the student above MAT*137 "Intermediate Algebra"; or, a grade of "C" or better in MAT*137 or equivalent or higher.</i>	0 (3)		
<b>First Semester (Fall) – 15 credits</b>				
Program Requirement	MED*125: Medical Terminology	3		
Program Requirement	VET*100: Introduction to Animal Care	2		
Program Requirement	VET*101: Introduction to Veterinary Technology	3		
Gen Ed: Oral Communication	VET*102: Vet Office Management & Communication	3		
Program Requirement	VET*201: Veterinary Anatomy & Physiology I w/Lab	4		
<b>Second Semester (Spring) – 15 credits</b>				
Program Requirement	VET*151: Small Animal Veterinary Technology w/Lab	4		
Program Requirement	VET*152: Large Animal Veterinary Technology w/Lab	4		
Program Requirement	VET*202: Veterinary Anatomy & Physiology II w/Lab	4		
Program Requirement	VET*250: Principles of Pharmacology for Vet Tech	3		
<b>Summer Semester – 1 credit</b>				
Gen Ed: Oral Communication	VET*280: Veterinary Technology Externship I	1		
<b>Third Semester (Fall) – 13 credits</b>				
Program Requirement	VET*206: Lab Procedures for Vet Techs	2		
Program Requirement	VET*212: Principles of Imaging with Lab	1		
Program Requirement	VET*230: Vet Anesthesia & Surgical Nursing w/Lab	4		
Gen Ed: Aesthetic Dimensions		3		
Gen Ed: Social Phenomena		3		
<b>Fourth Semester (Spring) – 13 credits</b>				
Gen Ed: Scientific Knowledge OR Scientific Reasoning	BIO*235: Microbiology	4		
Program Requirement	VET*238: Parasitology	3		
Program Requirement	VET*220: Animal Pathology	3		
Program Requirement	VET*240: Periodontology and Oral Radiology	2		
Gen Ed: Oral Communication	VET*286: Veterinary Technology Externship II	1		
<b>TOTAL CREDITS</b>		<b>68</b>		

# WEB DESIGN & DEVELOPMENT CERTIFICATE

## *Humanities and Creative Arts*

**Program Coordinator:** Professor Richard Lenoce

**Faculty Advisor:** Professor Richard Eriksen

**Office Location:** Chapman Hall, Room 606

**Telephone:** (860) 343-5796 [Lenoce] • (860) 343-5795 [Eriksen]

**Email:** [rlenoce@mxcc.edu](mailto:rlenoce@mxcc.edu) • [reriksen@mxcc.edu](mailto:reriksen@mxcc.edu)

### DESCRIPTION

The Web Design and Development Certificate offers students opportunities to integrate the world of computers, Internet, art and multimedia in completion of the certificate. It covers relevant areas of web site construction, including designing and programming pages, developing multimedia content, as well as building and managing a web site. This program is designed not only for the person who wants to design and develop a personal web site, but also for the systems, publishing or business professional who would like to understand the capabilities of this powerful technology and to use it to provide innovative solutions to business problems. Courses from the Multimedia Certificate will transfer to the Multimedia A.S. Degree.

As the certificate is comprised entirely of courses within MxCC's Digital Media Production A.S. degree, students may switch to pursue the full degree instead of or in addition to the certificate.

This 30-credit certificate program is intended as a stackable credential for students looking to specialize in Web Design and Development. When enrolling in this program as a standalone occupational certificate, it is recommended that students entering the program either have an associate degree or higher or are enrolled in the Digital Media Production Associate degree program to improve employability upon graduation.

Requirements			
Course	CR	Semester Taken	Grade
DGA*110 Computer Graphics	3		
DGA* 120 Digital Image Editing I	3		
DGA*242 Internet Web Design I	3		
COM*120 Social Media	3		
DGA*241 Web Design II	3		
DGA* 250 Interactive Multimedia Production	3		
ART/COM/DGA/GRA Elective	3		
ART/COM/DGA/GRA Elective	3		
COM*287 Advanced Media Production or COM*295 Internship	3		
Open Elective	3		
<b>Total Credits</b>	<b>30</b>		

# CREDIT COURSE DESCRIPTIONS

## CREDIT COURSE NUMBERING SYSTEM IN CONNECTICUT'S COMMUNITY COLLEGES

**000-099** – “Intensive” remedial courses which some students may be required to take as preparation for college level work. Since they are not college-level courses, they do not count toward graduation in any degree or certificate program at MxCC.

**100-199** – “Introductory” courses, general education courses, and courses taken in a college major within the first year (the first 30 credits) of college study.

**200-299** – “Upper level” general education courses, and courses taken in a college major within the second year (the next 30 credits) of college study. Typically, these courses first require students to compete prior courses in the same subject (prerequisites).

Most courses at MxCC expect students to be ready for college level work in reading, writing, and math. This can be demonstrated through scores on a placement test or standardized test (SAT, ACT), or successfully completing a remedial course. MxCC also has many courses which have no required prerequisites.

Courses usually count for three (3) credits per semester. One credit hour is equal to one hour of classroom work, plus two hours of study, preparation, and homework outside of class time. Thus, a 3-credit course requires 9 hours of time on the students’ part. Exceptions include laboratory or studio courses and some mathematics, accounting and language courses. The credits and classroom hours (if different) for all courses are listed next to the course titles in the course descriptions.

Interested in transferring to a State University, Charter Oak State College, or UConn: Look up MxCC course equivalencies at the Connecticut State Universities, Charter Oak State College, and the University of Connecticut, on our Transfer Planning page.

## COURSES WITH NO PREREQUISITES

The following courses are open to all students. None of them require placement testing, completion of previous college courses, or enrollment in a specific academic program. All are 3 college credits/3 contact hours per week, except where indicated. \$\$ – Supplemental Course Fee applies.

### ACCOUNTING (ACC\*)

**ACC\*100**, Basic Accounting

### ART (ART\*)

**ART\*109**, Color Theory

**ART\*111**, Drawing I (3 credits/4 contact hours) \$\$

**ART\*116**, Perspective Drawing (3 credits/4 contact hours) \$\$

**ART\*121**, Two-Dimensional Design (3 credits/4 contact hours) \$\$

**ART\*122**, Three-Dimensional Design (3 credits/4 contact hours) \$\$

**ART\*163**, Ceramic Handbuilding (3 credits/4 contact hours) \$\$

**ART\*165**, Metal and Jewelry Design I (3 credits/4 contact hours) \$\$

**ART\*166**, Metal and Jewelry Design II (3 credits/4 contact hours) \$\$

**ART\*250**, Digital Photography

### CHINESE (CHI\*)

**CHI\*101**, Elementary Chinese I

### COMPUTER-AIDED DRAFTING (CAD\*)

**CAD\*110**, Introduction to CAD

**CAD\*171**, Mechanical 3-D CAD (Autodesk Inventor)

### COLLEGE SUCCESS (COL\*)

**COL\*101**, College & Career Success

**COL\*110**, Career Success (1 credit)

### COMMUNICATIONS (COM\*)

**COM\*104**, Careers in Media

**COM\*125/DGA\*125**, New Media Production

**COM\*129**, Digital Video Production

**COM\*131**, Audio Production

**COM\*179/THR\*113**, Performance for Film and Television

**COM\*283**, Broadcast Engineering

### COMPUTERS (CSC\*)

**CSC\*095**, Basic Computer Skills (1 Developmental Credit, Not for graduation credit)

**CSC\*101**, Introduction to Computers

**CSC\*115**, Introduction to Programming with Alice



## **CRIMINAL JUSTICE (CJS\*)**

**CJS\*151**, Criminal Justice Supervision & Administration

**CJS\*298**, Special Topics in Criminal Justice

## **DIGITAL ARTS/ MULTIMEDIA (DGA\*)**

**DGA\*101**, Introduction to Digital Arts

**DGA\*110**, Computer Graphics

**COM\*125/DGA\*125**, New Media Production

## **EARLY CHILDHOOD EDUCATION (ECE\*)**

**ECE\*103**, Creative Art Experiences for Children

**ECE\*106**, Music and Movement for Children

**ECE\*141**, Infant/Toddler Growth & Development

**ECE\*176**, Health, Safety, and Nutrition

**ECE\*180**, CDA Preparation Course

## **ECONOMICS (ECN\*)**

**ECN\*100**, Introduction to Economics

## **ENGINEERING (EGR\*)**

**EGR\*112**, Engineering Drawing Interpretations

## **ENGLISH (ENG\*)**

**EDUC 1003**, English Fast Track (Reading-Writing) Workshop (0 credits, 24-30 classroom hours)

**EDUC 1010**, Fast Track: Grammar (0 credits, 5-15 classroom hours)

**EDUC 1011**, Fast Track: Reading (0 credits, 5-15 classroom hours)

**EDUC 1012**, Fast Track: Essay Writing (0 credits, 5-15 classroom hours)

**EDUC 1017**, College and Career Success (0 credits)

**EDUC 1020**, English Brush-Up Reading/Writing Workshop (0 credits, 24-30 classroom hours)

**ENG\*096**, Introduction to College English (6 credits)

## **ENVIRONMENTAL ENGINEERING TECHNOLOGY (ENV\*)**

**ENV\*109**, OSHA 49 Hour Training and Emergency Response Procedure

**ENV\*162**, Environmental Sampling

## **ENVIRONMENTAL SCIENCE (EVS\*)**

**EVS\*135**, Exploring Environmental Science (1 credit)

## **FRENCH (FRE\*)**

**FRE\*101**, Elementary French I

## **GEOGRAPHY (GEO\*)**

**GEO\*101**, Introduction to Geography

## **HISTORY (HIS\*)**

**HIS\*101**, Western Civilization I

**HIS\*102**, Western Civilization II

**HIS\*107**, History of Puerto Rico

**HIS\*121**, World Civilization I

**HIS\*122**, World Civilization II

**HIS\*201**, United States History I

**HIS\*202**, United States History II

**HIS\*244**, Europe in the 20th Century

## **HUMAN SERVICES (DFS\*, HSE\*)**

**DFS\*110**, Orientation to Deafness

**HSE\*101**, Introduction to Human Services

**HSE\*116**, Youth Advocacy and Community Organization

**HSE\*167**, Nature & Needs of Persons with Mental Retardation

**HSE\*191**, Problem Gambling, Treatment, and Prevention

## **ITALIAN (ITA\*)**

**ITA\*101**, Elementary Italian I

## **MANUFACTURING (MFG\*)**

**MFG\*051**, Manufacturing Math I (3 developmental credits; does not count toward graduation)

**MFG\*120**, Metrology

**MFG\*123**, Measurement for Manufacturing (2 credits)

**MFG\*150**, Intro to Machine Technology (4 credits/6 contact hours)

**MFG\*166**, Benchwork

**QUA\*114**, Principles of Quality Control

## **MATHEMATICS (MAT\*)**

**EDUC 1002**, Fast-Track Math Workshop (0 credits, 30 classroom hours)

**MAT\*095-I**, Pre-Algebra & Elementary Algebra Foundations (6 Credits)

## **MUSIC (MUS\*)**

**MUS\*101**, Music History and Appreciation I

**MUS\*104**, World Music

**MUS\*111**, Fundamentals of Music I

**MUS\*117**, Electronic Music

**MUS\*137**, History and Appreciation of Jazz

**MUS\*138**, Rock and Roll History and Appreciation

**MUS\*152**, Drumming and Percussion Ensemble

## **POLITICAL SCIENCE & LAW (POL\*)**

**POL\*102**, Introduction to Comparative Politics

**POL\*103**, Introduction to International Relations

**POL\*111**, American Government

**POL\*112**, State and Local Government

**POL\*120**, Introduction to Law

**POL\*293**, Connecticut Legislative Internship (6 Credits)

## **PSYCHOLOGY (PSY\*)**

**PSY\*103**, Introduction to Holistic Wellness

**PSY\*247**, Industrial & Organizational Psychology

**PSY\*298**, Special Topics in Psychology

## **SPANISH (SPA\*)**

**SPA\*101**, Elementary Spanish I

## **THERAPEUTIC RECREATION (RLS\*)**

**RLS\*121**, Intro to Therapeutic Recreation Services

**RLS\*122**, Processes and Techniques in Therapeutic Recreation

## **THEATER (THR\*)**

**THR\*102**, Theater History

**THR\*110**, Acting I

**THR\*113/COM\*179**, Performance for Film and Television



## ACCOUNTING (ACC\*)

### **ACC\*100, Basic Accounting (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

A course in the basic accounting principles with emphasis on recording procedures and payroll for service businesses and professional offices. Students with no previous accounting exposure and limited college course experience should consider taking this course before taking ACC\*115 Financial Accounting. It will satisfy a business or open elective requirement. *May not be taken after ACC\*115 unless student received a D or F grade.*

### **ACC\*113, Principles of Financial Accounting (3 cr.)**

*This course replaces ACC\*115. Students may not get credit for both ACC\*113 and ACC\*115.*

An introduction to financial accounting fundamentals. The basic accounting equation, recording procedures and analysis of corporate statements and specific business accounts are studied. *Prerequisites:* Eligible for ENG\*101 E or ENG\*101, and eligible for MAT\*137.

### **ACC\*117, Principles of Managerial Accounting (3 cr.)**

*This course replaces ACC\*118, Managerial Accounting. Students may not get credit for both ACC\*117 and ACC\*118*

An introduction to managerial accounting fundamentals. It is the study of accounting that generates confidential information for use in decision-making and managing and operating a business. It studies cost-benefit criteria, behavioral implications of actions and strategies for setting long and short-range goals. *Prerequisites:* ACC\*113 or ACC\*115.

### **ACC\*125, Accounting Computer Applications I (3 cr.)**

Use of a computer programs will be used to simulate actual accounting applications on computers. The commercial accounting program includes general ledger, accounts receivable, accounts payable, and payroll. Additional projects are prepared using spreadsheet programs. No previous computer knowledge is required. *Prerequisites:* ACC\*113.

### **ACC\*271, Intermediate Accounting I (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*

An examination of generally accepted accounting principles related to preparation

of the financial statements, including the cash flow statement. Valuation and disclosure of current assets including cash, accounts receivable, and inventory are studied in detail. A computerized commercial accounting project is incorporated into the course. *Prerequisites:* ACC\*118.

### **ACC\*272, Intermediate Accounting II (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*

Continuation of topics begun in ACC\*271, including long assets, current liabilities, long term liabilities, stockholder's equity, present value concepts and payroll. A financial statement analysis project is incorporated into the course. *Prerequisites:* ACC\*271. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

## ANTHROPOLOGY (ANT\*)

### **ANT\*101, Introduction to Anthropology (3 cr.)**

*Gen Ed Competencies: Global Knowledge, Social Phenomena*

A survey of the major fields of anthropology – physical anthropology, archaeology, and cultural anthropology – with an emphasis on the distinctive anthropological perspective on human beings and their works. Non-western cultures will be a focus of the cultural analysis. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101. (Fulfills an "L" course or "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **ANT\*205, Cultural Anthropology (3 cr.)**

*Gen Ed Competencies: Global Knowledge, Social Phenomena*

An introduction to the cross-cultural study of human behavior and society. Focus will be on political organization, marriage and family, community organization, economic institutions, culture and personality, religion, social movements and change. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **ANT\*212, Anthropology, Psychology, and Religion (3 cr.)**

This cultural anthropology course uses a psychological approach to study of the effects of major world religions on the development of the individual personality in selected cultures. *Prerequisites:* ANT\*101, completion of 20 college credits.

## ART (ART\*)

**\$\$ Supplemental Course Fee: Many studio art courses require a separate fee added at the time of registration in order to cover the cost of additional instructional time, supplies, and materials used by students.**

### **ART\*100, Art Appreciation (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions*  
This initial course in the visual arts explores the constantly changing world of art, discovering how this form of expression is defined and the rich, varied ways in which it can be appreciated. The study of the individual elements and principles that constitute a work of art is undertaken in this exploration of creativity. Visits to galleries, studios, and museums are an integral part of the course. *Prerequisites:* Eligible for either ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **ART\*101, Art History I (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions*  
A study of Western art and architecture from prehistory through the fourteenth century. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101. Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **ART\*102, Art History II (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions*  
Painting, sculpture, and architecture from the Early Christian and Byzantine through the Renaissance, Baroque, and Rococo periods, with consideration of the political, social, economic, and religious influences of the times. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **ART\*109, Color Theory (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
This course is an examination of the action and interaction of color and a study of the visual and psychological factors related to color perception. Students are responsible for purchasing their own supplies.

### **ART\*111, Drawing I (3 cr./4 contact hours)**

**\$\$ Studio Course Fee**  
*Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
A study of form through gesture, contour line, and the use of light and shade. Various mediums including conte crayon, charcoal, and ink are used in the study of still life and controlled subject matter. Composition is emphasized.

**ART\*112, Drawing II (3 credits/4 contact hours)**

*\$\$ Studio Course Fee Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
Continuation of ART\*111 applied to the human figure through the use of "life" models. The course also includes experimental and creative use of materials. *Prerequisites:* ART\*111.

**ART\*116, Perspective Drawing (3 credits/4 contact hours)**

*\$\$ Studio Course Fee*  
Gen Ed Competency: Aesthetic Dimensions  
The system of linear perspective as a method of producing a two-dimensional representation of the three-dimensional world. Problems in one, two, and three-point perspective with some use of projection methods.

**ART\*121, Two-Dimensional Design (3 cr./4 contact hours)**

*\$\$ Studio Course Fee*  
Gen Ed Competencies: Aesthetic Dimensions, Creativity  
Background in the fundamentals of art through an examination of the basic elements and principles of design. Exercises in composition using paper, ink, and paint. The second half of the semester consists of the study of color and includes problems dealing with physical and relative properties.

**ART\*122, Three-Dimensional Design (3 cr./4 contact hours)**

*\$\$ Studio Course Fee, Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
Use of a variety of materials to investigate the interrelationships of spaces, planes, and volumes.

**ART\*131, Sculpture I (3 credits/4 contact hours)**

*\$\$ Studio Course Fee, Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
An introduction to the language of sculpture in its many facets. Projects will include modeling in clay, mold making, cement casting, direct carving, and found object composition. Personal expression through both representation and abstraction is encouraged. Students will need to purchase their own materials and tools. *Prerequisites:* ART\*121. *Recommended:* ART\*122.

**ART\*147/COM\*147, Digital Cinematography (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
An introduction to photographic principles as they apply to movies and video. This course will use both digital still and video cameras, and cover topics such as composition, depth-of-field, lenses, focal length, exposure, focus, filters, camera angles, camera operation, camera movement, visual effects, and principles of lighting and color; as well as the roles of the Director of Photography and other camera and lighting crew on a production. This is a hands-on course with students completing a series of practical exercises and production assignments. *Prerequisites:* ART\*250 or COM\*129 or COM\*142.

**ART\*155, Watercolor I (3 credits/4 contact hours) \$\$ Studio Course Fee**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
In this introductory course basic methods and techniques of watercolor and opaque water-media are presented. Assignments and exercises in acrylic/gouache and watercolor are designed to encourage exploration of the wide range of effects possible with water-media. Experimental methods will be demonstrated as well as traditional techniques such as glazing, wet on wet, and layering. Students will be introduced to the transparent, translucent, and opaque capabilities of water-media painting. Composition, color, design, and art historical reference are emphasized in each of the media. *Prerequisites:* ART\*121.

**ART\*163, Ceramic Handbuilding (3 credits/4 contact hours)**

*\$\$ Studio Course Fee, Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
An introduction to the fundamentals of ceramic design and construction. Pinch, coil, slab, and modeling techniques will be employed to create functional and sculptural works in clay. Surface treatments, glazing applications, kiln loading and firing processes will be covered. Historical and contemporary approaches to ceramics will be emphasized. Students will need to purchase their own materials and tools. Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.

**ART\*165, Metal and Jewelry Design I (3 credits/4 contact hours)**

*\$\$ Studio Course Fee, Gen Ed Competencies: Aesthetic Dimensions, Creativity*  
An introduction to basic jewelry techniques such as metal forming, metal weaving, sawing, soldering, and working with hand tools. Students work in base metals such as copper and bronze, or in sterling silver. Design will be heavily emphasized. Students will furnish their own hand tools and materials which will cost about \$50.

**ART\*166, Metal and Jewelry Design II (3 credits/4 contact hours)**

*\$\$ Studio Course Fee, Gen Ed Competency: Aesthetic Dimensions*  
An introduction to casting techniques: the primitive techniques such as coal casting, drop casting, cuttle bone casting that are used in less developed countries, as well as the sophisticated technique of lost-wax casting; students will learn how to carve wax, make temporary molds, and ultimately spin molten metal, translating their wax patterns into finished pieces of jewelry. Some materials and tools to be provided by the student which will cost about \$50.

**ART\*167, Printmaking I (3 credits/4 contact hours)**

*\$\$ Studio Course Fee*  
Basic concepts of printmaking are introduced, though mainly relief processes are studied. These include lino cut, woodcut, collage, and mono printing, in black and white and color. A working knowledge of the tools, materials and process of the traditional relief print will be learned, and an imaginative approach taken to the print as a work of fine art. *Prerequisites:* ART\*121.

**ART\*168, Printmaking II (3 cr./4 contact hours)**

*\$\$ Studio Course Fee*  
The basic intaglio processes of printmaking as an art medium. Techniques of etching, aquatint, engraving, and dry point. *Prerequisites:* ART\*167.

**ART\*215, Illustration (3 cr./4 contact hours)**

*\$\$ Studio Course Fee, Gen Ed Competencies: Aesthetic Dimensions, Creativity. Students who have taken GRA\*220 will not earn credit for ART\*215.*  
Creative exploration of the processes of illustration including design, visualization and sequential imaging, lighting effects, and advanced rendering techniques. Problems presented to develop conceptual, compositional, and technical skills. *Prerequisites:* ART\*111 or ART\*121.

**ART\*250, Digital Photography (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Continuing Learning/Information Literacy, Creativity*

An introduction to digital photography including hardware and software, camera handling and creative controls, file formats and management, image editing, manipulation and output options using Adobe Photoshop. Through demonstrations and assignments, a survey of imagery and a final portfolio, students will be introduced to the basic vocabulary, concepts, tools, and expressive possibilities of digital photography. Students must own a 3 megapixel (or greater) digital camera with manual, aperture priority and/or shutter priority exposure modes. There will be some additional expenses. Basic computer and photographic experience preferred.

**ART\*253, Oil Painting I (3 cr/4 contact hours)**

*\$\$ Studio Course Fee, Gen Ed Competencies: Aesthetic Dimensions, Creativity*

An introduction to the materials and techniques of oil painting. Development of composition through color, form, and textures to meet requirements of a controlled aesthetic concept. *Prerequisites:* ART\*111 and ART\*121.

**ART\*254, Oil Painting II (3 cr./4 contact hours)**

*\$\$ Studio Course Fee, Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Continuation of ART\*253 with an emphasis on artistic growth and development of painterly skills. Critical exploration of paint properties and the illusionary effects of color. *Prerequisites:* ART\*253.

**ART\*280, Advanced Digital Photography (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Advanced study of photographic aesthetics, capture and printing techniques, and the history of photography. Students will utilize the latest image editing software to create a portfolio of sophisticated digital images that reflect their personal creativity and vision. Other projects will explore studio lighting, high dynamic range (HDR) imaging and fine art. Students will review the fundamentals of exposure and creative camera controls, learn a non-destructive workflow, advanced masking techniques, and how to process RAW files inkjet output. Students are required to provide their own manually adjustable digital cameras (SLR preferred), printing substrate as specified, and other photographic equipment and materials; a

complete list is available from the instructor. A manually adjustable digital camera is a requirement for this course. *Prerequisites:* ART\*250 or Demonstrated knowledge of strong computer skills as determined by the program coordinator.

**ART\*299, Independent Study (1-3 cr.)**

Students will have an opportunity to pursue with greater depth studio or research projects of particular interest. Must be arranged in the semester prior to registration with departmental approval and with the supervision of an art faculty member.

*Prerequisites:* Departmental approval.

**ART-GRAPHIC DESIGN (GRA\*)****GRA\*150, Introduction to Graphic Design (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

An introduction to graphic design, a creative process that uses art, technology, and the written word to produce effective visual communication. Creativity is encouraged through hands-on exercises using fundamental design elements and skills to solve thought-provoking communications problems. Various techniques and mediums, including the computer, are explored in the execution of solutions. *Prerequisites:* ART\*121 and DGA\*110. *Recommended:* ART\*111.

**GRA\*246, Digital Pre-Press I (3 cr.)**

An introduction to the principles of color separation and preparation of files for digital output to various media. Includes an understanding of color models, fonts, trapping, scanning, resolution, and data formats. *Prerequisites:* DGA\*110. *Recommended:* DGA\*231.

**GRA\*251, Advanced Graphic Design (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Real world execution of visual communications including discussions and exercises in the use of typography, the use of a layout grid, the commissioning of illustration/ photography, print production, and the business side of graphic design. Computer skills are emphasized in the solving of visual communications problems typical of today's graphic design industry. *Prerequisites:* GRA\*150 and DGA\*231. *Recommended:* DGA\*120 or DGA\*223.

**GRA\*296, Graphic Design Internship (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Students work for design companies, printerries, service bureaus, or other relevant businesses. For Graphic Design majors who have nearly completed the requirements for the A.S. degree/Graphic Design Track. Minimum of 120 hours required for 3 credits.

*Prerequisites:* Permission of program coordinator.

**ASTRONOMY (AST\*)****AST\*101, Principles of Astronomy (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

An introduction to the study of the solar system, the stars, galaxies, nebulae, and newly discovered celestial bodies. Laboratory activities and field trips included. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101, AND either MAT\*085/MAT\*095-I or MAT\*095 with a "C-" or better or taken concurrently.

**BIOLOGY (BIO\*)**

*\$\$ Supplemental Course Fee: Many science lab courses require a separate fee added at the time of registration in order to cover the cost of additional instructional time, supplies, and materials used by students.*

**BIO\*105, Introduction to Biology (4 credits/6 contact hours) \$\$ Laboratory Course Fee**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

A course for non-science majors. Topics covered include cell biology, diversity, biotechnology, basic chemistry, cellular respiration and photosynthesis, ecology, genetics, behavior, and evolution. Labs may involve dissection of plant and animal specimens, microscope work, and elementary biochemistry experiments. This course is recommended for students who do not need a full year of laboratory biology. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* Eligible for ENG\*101 and eligible for MAT\*095 (or higher).



**BIO\*109, Principles of Biotechnology (3 cr.)**

*Gen Ed Competencies: Global Knowledge, Historical Knowledge, Scientific Reasoning*

This course provides a basic introduction to the field of biotechnology. Students will gain a broad understanding of the goals, products, practices, regulations, ethics, and career paths in the biotechnology industry. Students will acquire the fundamental knowledge of the biotechnology industry through the introduction of molecular biology, contemporary techniques, and applications. In addition, students will learn about current topics from lectures, as well as guest speakers from industry partners. This course is intended for students in the biotechnology program, as well as students exploring career options in the field of science.

*Prerequisites:* Eligible for ENG\*101.

**BIO\*110, Principles of the Human Body (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

This is an introductory course dealing with the structure and function of the human organism and the issues facing humans in today's world. It is intended for students with a limited science background. *Prerequisites:* Eligible for ENG\*101 and eligible for MAT\*095 or higher.

**BIO\*111, Introduction to Nutrition (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

A study of the science of nutrition including the chemical structure, function, digestion, absorption, and metabolism of nutrients. Class discussion will emphasize how poor dietary habits contribute to the formation of diseases associated with the Western diet. Students critically analyze their own diets with respect to nutritional content and adequacy. *Prerequisite:* Eligible for ENG\*101E or ENG\*101 and eligible for MAT\*095 or higher. (Updated October 2019)

**BIO\*115, Human Biology (4 cr./6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

This course provides a basic introduction to fundamental biological principles and the structure and function of the human body. Selected topics of relevance to humans will be highlighted through case studies. Application of scientific processes, including the scientific method, analysis of data, and drawing appropriate conclusions will be integrated in the laboratory and classroom setting. This course will serve to provide a foundation in biology enabling the student to become a more informed citizen in science.

This course is not open to students who have passed a higher level human anatomy and physiology course. *Prerequisites:* Eligible for ENG\*101 and eligible for MAT\*137 or higher.

**BIO\*118, Anatomy and Physiology of the Eye (4 cr./6 contact hours)**

Open only to students enrolled in the Ophthalmic Design & Dispensing program. Designed to introduce the student to the basic anatomy and physiology of the eye, this course will include study of the eye and its associated structures. Students will conduct a detailed study of the eyelids and lashes, the orbit, extra ocular muscles, the crystalline lens, the retina, lacrimal apparatus, uveal tract, and the cornea. Included in the course is certification in Adult C.P.R., a segment on A.I.D.S. awareness, and a study of medical abbreviations and commonly used medical prefixes and suffixes. The laboratory component of the course includes dissection of cow's eye, as well as numerous slide and video presentations of ocular anatomy, physiology and surgery.

**BIO\*121, General Biology I (4 credits/6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

An introduction to the structure and function of cells including, but not limited to, membrane structure and function, basic biochemistry, cellular respiration, photosynthesis, modern genetics, gene expression, and cell division. Recommended for science majors and pre-allied health students. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* Eligible for ENG\*101 and eligible for MAT\*137 or higher.

**BIO\*122, General Biology II (4 credits/ 6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

A study of the diversity of life including evolution, population genetics, phylogenetics, and an overview of the kingdoms of life. Emphasis on structure, function and evolutionary relationships of organisms. Laboratory involves experimental design and hypothesis testing along with observation of living and preserved specimens, some dissection required. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* Eligible for ENG\*101 and eligible for MAT\*137 or higher.

**BIO\*145, General Zoology (4 credits/6 contact hours)**

*\$\$ Laboratory Course Fee*

Major taxonomic groups of the animal kingdom are studied. Morphology, functional processes, evolutionary relationships and ecology of the various groups are emphasized. Laboratory work encompasses dissection and microscopic examination of appropriate specimens. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* Eligible for ENG\*101 and eligible for MAT\*137 or higher.

**BIO\*173, Introduction to Ecology (4 cr/6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

This course will explore key concepts and principles of ecology – the study of interactions between organisms and their physical, chemical, and biological environment – within an evolutionary framework and the context of human-caused changes to the natural world. Topics include key physical and chemical environmental features and processes; organismal adaptations; population, community and ecosystem interactions; biodiversity and biogeography; human activities that effect ecosystem processes and biodiversity; and the conservation of ecosystems. This course is intended for both environmental science majors and non-majors. *Prerequisites:* Eligible for ENG\*101 and eligible for MAT\*095 or higher.

**BIO\*211, Human Anatomy and Physiology I (4 cr/6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

This course is the first semester of a two-semester sequence designed to provide a comprehensive study of human anatomy and physiology. Topics include anatomical terminology, chemistry, cellular and general biological principles, histology, and an in-depth study of the integumentary, skeletal, muscular, and nervous systems. Emphasis is on function and homeostasis. Aging and relevant diseases are also presented. Laboratory dissection and physiology experimentation are coordinated with the lecture material. Dissection is required. Three hours of lecture and three hours of laboratory per week. *Prerequisites:* ENG\*101E or ENG\*101, CHE\*111 or higher, and BIO\*121 taken within the past 5 years, all with a "C" or better). (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**BIO\*212, Human Anatomy and Physiology II (4 cr/6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

This course is a continuation of BIO\*211 with an emphasis on the anatomy and physiology of the major body systems. Topics include metabolism and energetics, fluid, electrolyte and acid-base balances, development and inheritance, and an in-depth study of the endocrine, cardiovascular, immune, respiratory, digestive, urinary, and reproductive systems. Emphasis is on function and homeostasis. Aging and relevant diseases are also presented. Laboratory dissection and physiology experimentation are coordinated with the lecture material. Dissection is required. Three hours of lecture and three hours of laboratory per week. *Prerequisites:* BIO\*211 with a grade of 'C' or better taken within the past five years. (Fulfills an "L" course or "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**BIO\*222, Molecular Biotechniques (4 cr/6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competency: Global Knowledge*

A laboratory course designed to introduce molecular biology techniques such as plasmid and chromosomal DNA isolation, restriction enzyme mapping, agarose gel electrophoresis, and manipulation of DNA fragments. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* CHE\*112 or higher and either BIO\*121 or BIO\*235.

**BIO\*235, Microbiology (4 cr/6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

This is an introduction to general microbiology. The course is designed to meet the needs of pre-allied health students as well as biology or science majors. Topics include the structure, physiology, and molecular biology of microorganisms as well as the interactions between microbes and their hosts, including their role in the environment. Students also learn how microbes are studied and how they can cause disease and yet are essential to human well-being. There are laboratory exercises each week that will teach the basics of aseptic techniques as well as handling, culturing, and identifying microbes. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* ENG\*101E or 101, CHE\*111 or higher with a grade of "C" or better, and

either BIO\*105 or BIO\*121 taken within the past five years. All with a grade of "C" or better. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**BIO\*260, Principles of Genetics (3 cr.)**

This course deals with classical principles of human genetics as well as topics in modern molecular genetics in areas such as recombinant DNA, biotechnology, gene mapping and diagnosis of human genetic diseases. *Prerequisites:* BIO\*121 or BIO\*122. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**BIO\*263, Molecular Genetics (4 credits/6 contact hours)**

*\$\$ Laboratory Course Fee*  
*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

A study of the basic theory and application of classical and molecular genetics including human genetics, Mendelian inheritance, chromosomes, DNA structure and gene expression. The laboratory will emphasize application of genetic principles in model systems and will introduce modern molecular biology techniques such as DNA isolation, restriction enzyme analysis, agarose gel electrophoresis, recombinant DNA techniques and PCR analysis. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* CHE\*112 or BIO\*121 or BIO\*235.

**BIO\*270, Ecology (4 cr./6 contact hours)**

*\$\$ Laboratory Course Fee*

A principles oriented investigation of the relationships between organisms and their environments. Structural and functional aspects of the ecosystem, community types, population and succession related field and laboratory investigations. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* BIO\*122.

**BIO\*296, Biotechnology Internship (3 cr.)**

Student will work a minimum of 160 hours in an industrial or research biotechnology laboratory learning new research skills and practicing skills learned in lab classes. *Prerequisites:* Permission of the program coordinator.

**BUSINESS (BBG\*, BES\*, BFN\*, BMG\*, BMK\*)****BBG\*101, Introduction to Business (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This introductory course examines business and how it operates in our private enterprise system, a multicultural society

and a global marketplace. The focus will be on a practical understanding and application of business, emphasizing the relationship of business to an individual's everyday life, and the organization's social responsibility and response to change in a technological society. Areas of basic study include: marketing, management, finance, information systems and career opportunities. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

**BBG\*115, Business Software Applications (3 cr.)**

*Special note: Effective with the Fall 2016 semester, CSC\*101 and BBG\*115 are treated as separate, unique courses such that students can earn six credits for taking both courses. This policy will NOT be applicable retroactively for students who took both courses prior to the Fall 2016 semester.*

This course is an examination of problem solving techniques using computer applications software. With the MS Office Suite, students will learn to use each software package to contribute value to business. Focus is on preparing professional documents with Word, building flexible spreadsheets on Excel, using Access to analyze data to produce valid results and PowerPoint to effectively present and communicate. Social networking sites and their impact upon business will be explored. Individual and group projects will require students to utilize the MS Suite to prepare business documents, produce in-house publications and create and business presentations using themes, tables and graphs. A primary focus is the in-depth use of spreadsheets and databases to solve business problems. Interpretation and effective communication of results, both written and oral are practiced. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

**BBG\*125, The Future and Business Organizations (3 cr.)**  
*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course provides an introduction to business organization in our changing economic system and the global market. It includes an extensive look at the external environmental factors and their impact upon business and industry. Environmental scanning, from an organization perspective, is used to forecast, adjust and adapt to future trends. Students will analyze business organizations in the present and develop future-oriented thinking skills. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

**BBG\*135, Exploring Business & Technology Careers (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course is designed to expose students to various career pathways in the fields of business and computer technology. Students will learn about the world of business and will be given information about how to be successful in various business occupational areas. The student will have the opportunity to explore the workplace firsthand. Students will learn how to develop a personal career strategy and will develop a complete career portfolio. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101.

**BBG\*215, Global Business (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Global Knowledge, Social Phenomena*

An introductory course designed to provide students with the foundations for conducting international business and an understanding of the impact of the social, cultural, economic, political, religious, and legal environments in international trade. The course will focus on the importance of globalization, foreign investment, international marketing, international management, and operations of multinational corporations. **Prerequisites:** Eligible for ENG\*101.

**BBG\*231, Business Law I (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

An introductory study of the legal system of the United States and its relationship to the business manager. Topics include contracts, sales (general background in torts and product liability under Article 2 of the UCC), negotiable instruments and administrative agencies. **Prerequisites:** Eligible for ENG\*101.

**BBG\*232, Business Law II (3 cr.)**

This course focuses on the Uniform Commercial Code with special emphasis on the sale of goods, commercial paper, and secured transactions. In addition, bankruptcy law, business formation, employment law and labor law are covered. **Prerequisites:** Eligible for ENG\*101. *Gen Ed Competency: Critical Analysis & Logical Thinking*

**BBG\*234, Legal Environment of Business (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

An in-depth study of business organizations including agency and securities regulation and antitrust regulations with emphasis on real and personal property including an in-depth study of secured transactions under Article 9 of UCC. **Prerequisites:** Eligible for ENG\*101.

**BBG\*294, Business Internship (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course will enable students, individually and as part of a team, to become involved in problem-solving and decision-making activities in the business community. A research project or activity will be cooperatively undertaken by the students and representatives from business and industry. The students will participate in seminars presented by the instructor. To be eligible, students must demonstrate academic ability, personal ability to be self-paced and work with people in various business situations. **Prerequisites:** completion of 24 college credits and permission of the program coordinator.

**BBG\*295, Cooperative Work Experience I (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course enables a student who has completed 24 credits with a G.P.A. of 2.5 or higher to earn college credit for work experience in a career which correlates with his/her business program of study. Student must work a minimum of 15 hours per week in a college-approved position as well as attend seminars. **Prerequisites:** completion of 24 completed college credits, GPA 2.5 and permission of the program coordinator.

**BES\*118, Small Business Management (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

An introduction to small business management, including the attitude, knowledge and skills needed to own and operate a small business. Topics include the resources needed in the formation of new ventures, an understanding of the basic business skills needed to finance, market and manage a small business, risk taking and the formulation of a well-conceived business plan. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101.

**BFN\*110, Personal Finance (3 cr.)**

*Gen Ed Competency: Continuing Learning/Information Literacy*

This course introduces the student to the concepts, tools, and applications of personal finance and investment. It reviews the institutions, instruments and techniques of personal financial planning concentrating on risk management, establishing budgets, tax management, investments, retirement and estate planning. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101, and eligible MAT\*095 or higher.

**BFN\*201, Principles of Finance (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*

This course provides basic principles involved in the process of making financial decisions. Topics include the time value of money, ratio analysis of financial statements, leverage, cash flow and working capital and the relationship of risk to return. **Prerequisites:** A grade of "C-" or better in all of the following courses: ACC\*113 or ACC\*115, ECN\*101, ECN\*102, and MAT\*167 or MAT\*168. MAT\*167 or 168 may be taken concurrently.

**BMG\*202, Principles of Management (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking, Global Knowledge*  
An introduction to the principles of management and their application to business organizations. Emphasis is placed upon the management functions; development of a philosophy of total quality management; interpersonal behavior; and business problem solving activities. **Prerequisites:** Eligible for ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**BMG\*204, Managerial Communications (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Oral Communication in English*

The development of effective written, oral and electronic business communication. Selected assignments include writing business memos, letter and short reports, nonverbal communication, oral presentations, electronic mail and listening. **Prerequisites:** ENG\*101 or ENG\*101E. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**BMG\*210, Principles of Organizational Behavior (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course examines concepts and theories that help managers understand, motivate, and supervise employees. Emphasis is placed upon interaction of individuals and groups relative to management's actions and the organization's needs. Contemporary case studies are presented to develop an effective management skill set. No credit awarded to students who have previously taken BMG\*105, Supervision and Organizational Behavior. **Prerequisites:** BMG\*202.

**BMG\*220, Human Resource Management (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course examines the decision-making process of managing human resources. Topics include organizational environments; recruitment, selection, training and development, and performance appraisal; leadership and motivational philosophies and strategies; and group behavior. Emphasis upon current labor market and case study analysis. **Prerequisites:** BMG\*202.

**BMK\*103, Principles of Retailing (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

The study of the retail sector of our economy and the role it plays in the marketing process. Emphasis is placed upon current trends in retailing and the factors responsible for change. The organization and operation of conventional retailing institutions and non-store methods of retailing will be explored. **Prerequisites:** Eligible for ENG\*101-ALP, ENG\*101E, or ENG\*101.

**BMK\*106, Principles of Selling (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

A study of sales principles and techniques used in the sale of consumer and industrial goods and services. Emphasis is placed upon the characteristics of successful sales associates, psychology of selling and sales techniques. An interactive approach to the sales process is emphasized. **Prerequisites:** Eligible for ENG\*101-ALP, ENG\*101E, or ENG\*101.

**BMK\*123, Principles of Customer Service (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking*

This course is designed to develop the necessary skills for success as a customer service provider. The course examines various service situations and develops an attitude of superior customer service which is critical to success in all organizations. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101.

**BMK\*201, Principles of Marketing (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking, Global Knowledge*

An overview of the multifaceted discipline of marketing in a service-oriented economy. Consideration is given to market segmentation, target markets, consumer and industrial markets. Emphasis is placed upon developing a marketing mix, including product planning; pricing; the role of distribution; and promotional strategies. **Prerequisites:** Eligible for ENG\*101.

**BMK\*216, Internet Marketing (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*

This course introduces the student to this exciting, significant part of a business' marketing mix: marketing on the Internet. Students will use the internet as a source for market research, a communication medium and as a distribution channel. Cyberspace is very fluid and every effort will be made to take full advantage of this medium. Some basic marketing and computer knowledge is necessary. **Prerequisites:** Eligible for ENG\*101.

**BMK\*230, Advertising and Promotion (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

A study of an organization's marketing communications with consumers and other stakeholders. Theory characteristics and management of various promotion mix elements are surveyed, including advertising, sales promotion, public relations, direct marketing and personal selling. **Prerequisites:** BMK\*201.

## CHEMISTRY (CHE\*)

**\$\$ Supplemental Course Fee: Many science lab courses require a separate fee added at the time of registration in order to cover the cost of supplies and materials used by students.**

**CHE\*101, Introductory Chemistry (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding and Scientific Reasoning*

This 3-credit non-laboratory course is appropriate for non-science majors or for students needing an introductory chemistry course prior to taking CHE\*121 General Chemistry I.

This course is a survey of chemistry which covers atomic structure, bonding, energy changes, the scientific method, gases, chemical reactions and their quantitative treatment, solutions, and organic chemistry. **Prerequisites:** Eligible for ENG\*101E or ENG\*101 and eligible for MAT\*137 or higher.

**CHE\*111, Concepts of Chemistry (4 credits/6 contact hours)**

**\$\$ Laboratory Course Fee**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

An introduction to inorganic chemistry. Topics include atomic structure, bonding, nomenclature, gases, solutions, equilibrium, nuclear chemistry, and acids & bases. Lecture: 3 hours per week. Laboratory: 3 hours per week. **Prerequisites:** Eligible for ENG\*101E or ENG\*101, and eligible for MAT\*137 or higher.

**CHE\*112, Principles of Organic and Biochemistry (4 cr./6 contact hours)**

**\$\$ Laboratory Course Fee**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

An introduction to organic and biochemistry. Topics will include the major organic functional groups, carbohydrates, lipids, proteins, nucleic acids, as well as glycolysis, Krebs cycle, electron transport, protein synthesis, and DNA/RNA. Lecture: 3 hours per week. Laboratory: 3 hours per week. **Prerequisites:** CHE\*111 or CHE\*121.



**CHE\*121, General Chemistry I (4 cr./6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

The first of a two semester sequence, this course introduces fundamental concepts, models, and techniques including stoichiometry, periodicity, atomic structure, reaction types, and molecular shape.

This course also prepares the student for continued study in CHE\*122. Lecture: 3 hours per week. Laboratory: 3 hours per week.

**Prerequisites:** MAT\*137E or MAT\*137 with a grade of "C-" or better, eligible for ENG\*101, and one of the following: either High School Chemistry or CHE\*101 or CHE\*111.

**CHE\*122, General Chemistry II (4 credits/6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

The second of a two semester sequence, this course builds upon concepts presented in CHE\*121, including discussions of kinetics, equilibrium, and thermodynamics. Lecture: 3 hours per week. Laboratory: 3 hours per week. **Prerequisites:** CHE\*121 with a grade of "C-" or better.

**CHE\*220, Biochemistry (4 cr./6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

This intermediate level course focuses on the details of the structure, function, and properties of biological molecules. The chemistry and metabolism of carbohydrates, lipids, proteins, and the role of enzymes and nucleic acids will be covered in detail. Concepts are discussed in the context of real world examples. This course includes laboratory work that will teach techniques such as pipetting, solution preparation, spectrophotometry, culturing, DNA manipulation, computer analysis, and gel electrophoresis. **Prerequisites:** BIO\*121 and CHE\*122 with a "C" or better in both.

**CHE\*250, Instrumental Analysis (4 credits/6 contact hours)** *\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

This course is a theoretical and hands-on introduction to analytical instruments commonly used in chemical, biological, and environmental analyses. Students will become familiar with polarimetry, refractometry, spectrophotometry (infrared, ultraviolet, visible, and atomic absorption), and chromatography (paper, thin layer, gas-liquid, and liquid-liquid). Sample preparation, analysis, and data evaluation will be emphasized. Lecture: 3 hours per week. Laboratory: 3 hours per week.

**Prerequisites:** CHE\*121 with a grade of "C-" or better.

---

**CHINESE (CHI\*)**

**CHI\*101, Elementary Chinese I (3 cr.)**

Presents the essentials of Modern Standard Mandarin Chinese. Includes grammatical structures and vocabulary needed to read, write, and interact in Chinese using simple phrases and common expressions while highlighting the diverse cultures of Chinese-speaking peoples.

**CHI\*102, Elementary Chinese II (3 cr.)**

Builds on and expands skills learned in CHI\*101 with further study on Chinese grammar, sentence patterns, and vocabulary of native Chinese-speaking peoples. Students learn simple transactions and address the challenges of daily life in Chinese cultures. **Prerequisites:** CHI\*101.

---

**COLLEGE SUCCESS (COL\*)**

**COL\*101, College and Career Success (3 cr.)**

This course prepares students for a successful college and career experience. Students will explore and navigate the college's resources, develop college success strategies, cultivate critical and creative thinking, and participate in major and career exploration. Additionally, students will learn a variety of skills and strategies to support their studies across the curriculum. Topics include reading and study strategies, note taking, test preparation, interpersonal and oral communication, and information literacy.

**FS100/COL\*110, College Success (1 cr.)**

*This course was previously numbered FS 110. Students will not get credit for taking both FS 110 and COL\*110.*

This course is designed to enhance students' college and career readiness. Students will be introduced to the college and its resources. To support their academic course work, students will explore learning styles, study strategies, note taking, and test preparation. Special emphasis will be placed on major and career exploration for the purpose of helping students develop academic and professional goals.

---

**COMMUNICATIONS (COM\*)**

**COM\*101, Introduction to Mass Communication (3 cr.)**

*Gen Ed Competency: Social Phenomena*

An examination of the effect and impact of mass media on contemporary life. Emphasis is on the influence of cable and broadcast television, radio, film, the internet and the press in such areas as entertainment, news, politics, advertising, popular culture and human behavior. **Prerequisites:** Eligible for either ENG\*101ALP, ENG\*101E, or ENG\*101.

**COM\*104, Careers in Media (3 cr.)**

Exploration and research of careers in media covering the fields of journalism, advertising, public relations, broadcasting, television, film making, recording, digital multimedia and other media arts. Course utilizes guest speakers discussing career preparation, job requirements and responsibilities. Job targeting, networking, interviewing skills, resume and portfolio preparation are also taught.

**COM\*111, Scriptwriting (3 cr.)**

Practice and analysis in all aspects of script writing for motion pictures, television and radio. Course covers basic formats as well as techniques for narrative development, story structuring, etc. **Prerequisites:** ENG\*101E or ENG\*101.

**COM\*120, Social Media (3 cr.)**

*Gen Ed Competency: Social Phenomena*

This course will introduce students to various forms of social media and how to use them strategically. Students will learn about leading social media platforms and tools, who uses them, and how they have transformed the way we interconnect and interact with the world, both personally and professionally. Students will be expected to apply their knowledge by participating on different social media platforms through interactive class projects. **Prerequisites:** Eligible for ENG\*101.

**COM\*125/DGA\*125, New Media Production (3 cr.)**

*Gen Ed Competencies: Creativity, Social Phenomena*

This course is an introduction to the production of new media. New media is an emerging communications technology that adds on-demand interactive access to media content fostering creative participation and community formation. Students will learn to develop and produce a variety of digital media including, audio, video, photography, animation and web-design, and make that media accessible over the Internet and mobile devices through wikis, blogs, podcasts, and social media. Students will use professional media creation tools such as cameras, video and audio edition applications, content management systems and Internet radio, music creation, and podcast software.

**COM\*129, Digital Video Production (3 credits)**

*Gen Ed Competency: Aesthetic Dimensions.*

This course is an introduction to single camera video field production and post-production techniques with an emphasis on visual storytelling. Students will learn story development, proposal and script preparation, high definition camera operation, portable lighting techniques, sound recording, video editing, motion graphics, visual effects and preparing finished programs for distribution. Students will create news, documentary instructional and narrative programming for a variety of platforms including mobile, Internet streaming and broadcast television. (New course, effective Spring 2017)

**COM\*131, Audio Production (3 cr.)**

Students will learn the techniques and technologies used in creative sound design for radio, television, film and the Internet. Emphasis is on the technical skills used in recording, mixing, and editing. Students will create projects focusing on the fundamentals of sound design for various applications.

**ART\*147/COM\*147, Digital Cinematography (3 cr.)**

*See page 130 for description.*

**COM\*153, Film Production (3 cr.)**

A hands-on, collaborative approach to narrative film production techniques, including pre-production organization, cameras, lighting, shooting strategies, sound recording, crewing, and editing. Students will specialize in a specific area of production and collaborate with

fellow students to produce a short original film during the semester. Creative use of the medium for dramatic story telling will be emphasized using current technologies.

*Prerequisites:* COM\*129 or COM\*142

**COM\*154, Film Study and Appreciation (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions, Global Knowledge*

An introduction to the art, history, and influence of film. Students will learn about significant genres and styles of film, influential films and directors, film language and technique. Selected films will be viewed and analyzed weekly. *Prerequisites:* Eligible for either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**COM\*155, History of Film I (3 cr.)**

Survey of the film's history, techniques, and aesthetics to the end of World War II. Film classics shown weekly. *Prerequisites:* Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills an "L" course or "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**COM\*156, History of Film II (3 cr.)**

Survey of the film's history, techniques, and aesthetics from the end of World War II. Film classics shown weekly. *Prerequisites:* Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills an "L" course or "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**COM\*172, Interpersonal Communication (3 cr.)**

*Gen Ed Competency: Oral Communication in English*

This course focuses on developing positive interpersonal communication skills necessary for building and maintaining healthy, productive relationships in both a personal and professional environment. This includes both one-on-one as well as small group situations. Topics may include: verbal and non-verbal communication, perception of self and others, listening techniques, cultural and gender considerations, conflict avoidance and management, effective leadership skills, group dynamics and decision-making, and interpersonal communication within organizations. The course will expose students to various interpersonal communication theories and processes, while developing skills through practical exercises and activities. *Prerequisites:* Eligible for either ENG\*101ALP, ENG\*101E, or ENG\*101.

**COM\*173, Public Speaking (3 cr.)**

*Gen Ed Competency: Oral Communication in English*

Students will develop oral messages of varying lengths and styles that communicate across a variety of settings. *Prerequisites:* Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**COM\*179/THR\*113, Performance for Film and Television (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

This course will develop performance and acting skills used in radio, television, and film including voice-over techniques, television news reporting and anchoring, dramatic acting, and comedic performance. Skills include voice articulation, projection and inflection, script analysis and interpretation. Students will analyze scripts and develop characters to improve acting and directing techniques and understand the importance of subtext to scenes. Students perform using microphones, teleprompters, lighting, and cameras. This course is designed for students interested in on-screen performance across a range of media as well as those interested in film and television directing and production.

**COM\*201, Introduction to Public Relations (3 cr.)**

A comprehensive survey of public relations theories and practices as they function in organizations and society. The course examines the roles and responsibilities of public relations professionals and the evolution of the profession. Students study the process of public relations planning; examine the strategies and tactics used to establish and maintain positive relationships with constituents; review relevant legal and ethical concerns; and explore the practice of public relations in various contexts, including event planning, promotions, publicity, traditional media as well as new social and digital media campaigns, and crisis management. Students will apply what they have learned by developing and presenting a public relations strategic plan and other PR materials. *Prerequisites:* ENG\*101.

**COM\*203, Media Literacy (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions*

An examination of the techniques used by media communicators to share meaning, influence and entertain mass audiences with sounds and images. Broadcast-Cinema majors should take this course concurrently with COM \*142.

**Prerequisites:** Eligible for either ENG\*101ALP, ENG\*101E, or ENG\*101.

**COM\*220, Television Studio Production (3 cr.)**

An introduction to the fundamentals of studio television production with an emphasis on multi-camera production techniques and procedures including directing, camera switching, studio camera and robotic camera operation, studio lighting, digital video effects, audio mixing, video graphics, recording and distribution. Students will produce various projects such as news/sports, talk, drama and informational programming for broadcast over local cable television and the Internet.

**Prerequisites:** COM\*129. (New course, effective Spring 2017)

*Gen Ed Competency: Aesthetic Dimensions*

**COM\*226, Journalism I (3 cr.)**

Practice in the methods and techniques of news gathering, writing, editing, and analysis. Students will also specialize in one or more areas of newspaper production and be involved in creating the college newspaper.

**Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**COM\*228, Broadcast Journalism Workshop (3 cr.)**

Students will develop and produce a weekly news or public affairs program for broadcast on local television. Emphasis is on story research, writing and producing a program under strict deadlines. Formats can include news, magazine and talk show while program topics can include local news, the arts, sports, community affairs, etc.

**Prerequisites:** Either COM\*129 or COM\*142 or COM\*226 AND either ENG\*101ALP, ENG\*101E, or ENG\*101. COM\*111 recommended.

**COM\*231, Radio Production (3 cr.)**

This course introduces the skills needed for general radio, commercial, news, and spoken word production. Current practices in radio production and broadcasting will be covered including station automation, FCC regulations, studio operations, Podcasting,

Internet radio, and other forms of digital broadcasting. Research, scriptwriting, and workshop-based projects in informational and music-based programming including regular programs for the college's radio station are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101.

**Recommended:** COM\*131

**COM\*255, Topics in Film (3 cr.)**

This course will examine a specific topic in film and film making from an historical and artistic perspective. Topics that may be covered include examining the work of an influential director or a specific film genre or artistic movement. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**COM\*264, Advanced Editing Workshop (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

The operation of advanced video editing equipment and advanced editing techniques will be covered. This will include media organization, editing aesthetics, editing dialog and action sequences, montage, the integration of effects and transitions and equipment interfacing. **Prerequisites:** COM\*129 or COM\*142.

**COM\*283, Broadcast Engineering (3 cr.)**

Course emphasizes both studio and field engineering practices including system design and timing, station operations, reading of waveform monitors and vectorscopes, camera theory and adjustments, and RF equipment. Digital and analog theory and IT integration will also be covered.

**COM\*287, Advanced Media Production (3 cr.)**

*Gen Ed Competency: Creativity*

Advanced work in video, audio, or digital multimedia leading to the development and production of a completed professional project. Emphasis on using professional approaches in pre-production and production. Students will specialize in their preferred area of production for which they must have had prior production experience. Majors should see a program advisor to make sure they have taken the necessary sequence of courses prior to enrolling in this class. **Prerequisites:** This is a capstone course and should be taken during the final semester prior to graduation.

**COM\*293, Corporate Media Production Practicum (3 cr.)**

Students work on professional corporate video and multimedia productions. All aspects of production including meeting with clients, proposal writing, budgeting, scriptwriting, video production, post production and delivery of video will be covered. Entry into this class will be based on instructor evaluation and academic standing. Enrollment is limited to 5 students.

**COM\*294, Media Arts Workshop (3 cr.)**

*Gen Ed Competency: Creativity*

The Media Arts Workshop is a summer honors program with the goal of producing a collaborative work of outstanding professional quality. This workshop is open to students in Broadcast-Cinema, Communications Arts, Multimedia or a related discipline. Students will learn by working with media professionals for training and guidance and by working together as a team to complete a film, video or interactive media presentation. Enrollment is by application only. **Prerequisites:** Courses and/or experience in the student's field of study and presentation of an accomplished portfolio and possible interview.

**COM\*295, Internship I (3 cr.)**

Students gain practical work experience by interning with approved broadcast, cable, multimedia, education, media production companies or public service organizations for academic credit. Minimum of 120 hours of practical experience as well as written assignments and evaluation required for 3 credits. Students should arrange internship during the semester prior to registration. **Prerequisites:** Permission of the program coordinator.

**COM\*296, Internship II (3 cr.)**

Communications/Multimedia Internship II) Students gain practical work experience by interning with approved broadcast, cable, multimedia, education, media production companies or public service organizations for academic credit. Minimum of 120 hours of practical experience as well as written assignments and evaluation required for 3 credits. Students should arrange internship during the semester prior to registration. **Prerequisites:** Permission of the program coordinator.

## COMPUTERS (CSA\*, CSC\*, CST\*)

### **CSA\*135, Spreadsheet Applications (3 cr.)**

*Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking*

Microsoft EXCEL for Windows, which contains spreadsheet, database, and graphics features, will be utilized to capture, organize, process, and store data for business applications. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101.

### **CSA\*140, Database Applications (3 cr.)**

*Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking*

This course will provide an introduction to database software. Students will learn to create and manipulate databases using leading database packages currently popular in business and industry. Students will get an overview of the range of available database management systems and an understanding of fundamental theory. Hands-on work will be emphasized.

**Prerequisites:** Eligible for either ENG\* 101E or ENG\*101.

### **CSA\*205, Advanced Applications (3 cr.)**

*Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking*

This course explores the intermediate and advanced features of popular business software applications. Students will learn how to apply word processing, spreadsheet, database, and presentation tools to achieve productivity gains. The course will also include software integration and collaboration software using cloud computing. The goal of this course is to challenge students to move beyond the basics of the Office applications to a much higher level of proficiency in a broad range of business software applications. Additionally, this course will assist in preparing students to take the industry-recognized Microsoft Office Specialist (MOS) Certification exam. Permission to enroll without the prerequisite may be granted based on a student's prior knowledge of Microsoft Office applications.

**Prerequisites:** CSC\*101.

### **CSC\*095, Basic Computer Skills (1 cr.)**

This preparatory course gives students the fundamental skills necessary to gain a basic understanding of how to use a personal computer. The course teaches basic keyboarding techniques, the fundamentals of the Windows environment, file management, Internet research, and email. Students with little or no hands-on experience with computers should take this basic skills course before taking any of the computer courses. This course cannot be counted toward graduation credit.

### **CSC\*101, Introduction to Computers (3 cr.)**

*Gen Ed Competency: Continuing Learning/ Information Literacy*

This course prepares students to use the computer as a productivity tool. It offers both Mac and PC users essential computer skills for personal and professional applications. The fundamentals of information technology concepts, operating systems functions, cloud computing, and computer security are covered. Students will complete hands-on projects using popular productivity software that include word processing, spreadsheet, database, and presentation applications. Also included are topics in Web design, Internet basics, information literacy, and productivity apps. Students will gain knowledge to be well-informed consumers of computer technology. **Recommended:** Students taking this course should possess hands-on familiarity with computers. CSC\*095 Basic Computer Skills course is recommended for students who do not possess the requisite computer skills.

### **CSC\*105, Programming Logic (3 cr.)**

*Gen Ed Competency: Scientific Reasoning*

In this course students are introduced to the fundamental concepts of object-oriented programming and the basic structures of programming including linear, selection, and iteration. They will learn the algorithm design using flowcharts, pseudo code and UML diagrams, and the algorithm implementation through editing, compiling, running, and debugging. Students will become familiar with variables, expressions, control structures, methods, arrays, objects, and GUI applications. **Prerequisites:** Eligible for MAT\*137.

### **CSC\*115, Introduction to Programming with Alice (3 cr.)**

*Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking*

This course teaches students the fundamentals of object-oriented

programming using Alice, a three-dimensional graphical system that is used to create three-dimensional worlds of animation and games. The course allows students to gain an understanding of the same fundamentals object-oriented principles that are taught with traditional languages such as Java or Visual Basic. However, students will learn and practice these techniques as they create exciting virtual worlds, thus making programming easier to learn. The intent is to provide students who are new to programming with an understanding of abstract principles in concrete ways. Students will be able to apply these skills to other object-oriented languages.

### **CSC\*205, Visual Basic I (3 cr.)**

*Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking*

Students will gain an understanding of fundamental Visual Basic programming concepts. This will include how Visual Basic's programming environment operates as well as its application language. Concepts covered include window form development, programming controls and how to access databases using the Visual Basic language. **Prerequisites:** Eligible for ENG\*101E or ENG\*101.

### **CSC\*220, Object-Oriented Programming Using JAVA (3 cr.)**

*Gen Ed Competency: Scientific Reasoning*

In this course, students will learn to use object oriented techniques in planning, designing, and implementing Java applets and standalone applications. Topics include object-oriented design, arrays, inheritance, polymorphism, exceptions, recursion and collections. Graphical User Interface and event-driven programming will be covered. **Prerequisites:** CSC\*105.

### **CSC\*231, Database Design I (3 cr.)**

*Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking*

This course uses a DATABASE application software package. The software will be used to construct useful databases for the daily tasks performed by business professionals. Using hands on approach, the student will learn how to store and retrieve records, devise search strategies, and to produce data structures and programming techniques necessary to solving problems. **Prerequisites:** CSA\*140.



### **CSC\*249, Contemporary Business Application Development I (3 cr.)**

This course will teach students contemporary approaches to application development. They will learn how to design and develop object-oriented applications for the console and Windows desktop environments using C#, the core language of the Microsoft .Net framework. **Prerequisites:** Eligible for ENG\*101, ENG\*101E, or ENG\*101 ALP. Gen Ed Competencies: Critical Analysis & Logical Thinking, Continuing Learning/Information Literacy.

### **CSC\*262, Programming Mobile Devices I (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
The course will introduce students to the various platforms in use on small and mobile devices. Platforms will include Apple iPhone, Google Android OS, and Microsoft Windows Phone 7. Students will learn the process involved in developing applications for mobile devices. They will create applications for each platform using specialized development environments. **Prerequisites:** CSC\*205 or CSC\*220.

### **CSC\*295, Coop Ed/Work Experience (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
This course will give the student the opportunity to apply the concepts and skills acquired in the Information Systems Program in an on the job experience at a designated business. The student will be required to attend a specific number of classes during the semester to incorporate system analysis concepts as well as communication techniques. **Prerequisites:** All Computer Information Technology required courses and permission of the program coordinator.

### **CST\*120, Introduction to Operating Systems (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
This course is intended to provide the student with a more advanced knowledge of computer hardware and Operating Systems. Students will learn how to use Windows' advanced features, and how the operating systems interact with hardware both locally and on a network. Topics covered include how to work with computer networks, major components of computer hardware, data back-up, and windows customization. **Prerequisites:** Eligible for either ENG\*101E or ENG 101.

### **CST\*141, Computer Hardware (4 cr.)**

*Gen Ed Competencies: Scientific Reasoning*  
This hands-on course covers essential skills on how to install, upgrade, repair, configure, troubleshoot, optimize, and maintain a personal computer's hardware and peripherals. Topics include power supplies, motherboards, processors, memory, hard drives, I/O devices, and multimedia devices. Four hours of lecture/laboratory per week. **Prerequisites:** Eligible for MAT\*095.

### **CST\*163, Windows Server Administration (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
This course covers the Microsoft Windows Server environment. Students will learn the basics of installing, administering, and maintaining a Windows Server implementation. Administration of user and group accounts, Active Directory, network protocols and services such as virtual private networking, Routing and Remote Access Service, DHCP, DNS, backup, recovery and disaster planning will be covered. **Prerequisites:** CST\*120

### **CST\*201, Introduction to Management Information Systems (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
This course provides the background necessary for understanding the role of information systems in organizations and for using computer tools and technology in solving business problems. Topics include organizational and technical foundations of information systems, theory of information systems design, fundamental database principles, network systems, e-commerce and supply chain systems, information network security management, and meeting global challenges. Microsoft Excel, Access, PowerPoint and Project are used to demonstrate selected topical concepts. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101.

### **CST\*228, Voice and Data Interworking (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
The course covers the engineering of voice technologies. Topics include: voice compression methods, understanding the H.323 protocol, voice over frame-relay, voice over ATM, and voice over IP. The MxCC lab will be used to design and build a voice over IP network. **Prerequisites:** CST\*120.

### **CST\*231, Data Communication and Networking (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
The course outlines interconnecting computers using communication networks. The seven layer OSI Reference framework, physical layer standards, data link protocols, repeaters, bridges, routers, local area networks, wide area networks, and network configurations will be discussed. **Prerequisites:** CST\*120 or CST\*141.

### **CST\*270, Network Security Fundamentals (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
This course is designed to meet the needs of students who want to master practical network and computer security. Topics include: malware attacks, application and network attacks, vulnerability assessments for mitigating attacks, data security, network security, wireless network security, authentication and account management, access control fundamentals, basic and advanced cryptography for protecting data, business continuity model, and risk mitigation procedures. **Prerequisites:** CST\*120 or taken concurrently

## **COMPUTED TOMOGRAPHY (CAT\*)**

**THESE COURSES ARE AVAILABLE ONLY TO STUDENTS WHO HAVE BEEN ADMITTED TO THE COMPUTED TOMOGRAPHY PROGRAM.**

### **CAT\*201/MRI\*201, Cross Sectional Anatomy I (1 credit)**

This course will introduce students to cross sectional imaging of the head and neck. Emphasis will be placed on pathology affecting the cranial cavity and neck in the application of computed tomography imaging. The uses for and administration of pharmacological agents for CT/MRI imaging will be included in this course. **Prerequisites:** Admission to the Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) Program, and ARRT Registered Radiographer, or Nuclear Medicine (Certification in Nuclear Medicine Technology Certification Board (NMTCB), or Radiation Therapy, or Sonography (Registration through the American Registry for Diagnostic Medical Sonography) (ARDMS).

**CAT\*202, CT Image Display, Post Processing and Quality Assurance I (2 credit)**

This course will introduce students imaging parameters. The formation of computed tomography image is discussed as well as the essential component parts of a CT imaging system. *Prerequisites:* Admission to the Computed Tomography Program, ARRT Registered Radiographer.

**CAT\*203, CT Procedures and Instrumentation I (2 cr.)**

This course will introduce students to the set-up and operation necessary to acquire optimal images of the head and neck. Emphasis will be placed on the acquisition techniques required to obtain optimal images of the head and neck including their respective pathologies. *Prerequisites:* Admission to the Computed Tomography Program, ARRT Registered Radiographer. (New course, Fall 2015)

**CAT\*204, Clinical Experience I (4 cr.)**

This course introduces the student to the clinical setting and the practical skills necessary to operate computed tomography imaging systems. Clinical competency evaluations are performed during this course. *Prerequisites:* Admission to the Computed Tomography Program, ARRT Registered Radiographer.

**CAT\*205/MRI\*205, Cross Sectional Anatomy II (2 cr.)**

This course will introduce students to cross sectional imaging of the chest, abdomen, pelvis and extremities. Emphasis will be placed on pathology affecting the chest, abdomen, pelvis and extremities in the application of computed tomography imaging. The uses for and administration of pharmacological agents for CT imaging will be included in this course. *Prerequisites:* Admission to the Computed Tomography Program, ARRT Registered Radiographer, CAT\*201, CAT\*202, CAT\*203, and CAT\*204 with a "C" or better for all.

**CAT\*206, CT Image Display, Post Processing and Quality Assurance II (3 cr.)**

This course will advance the students understanding of imaging parameters. The formation of computed tomography image is discussed as well as essential quality control and assurance testing. *Prerequisites:* Admission to the Computed Tomography Program, ARRT Registered Radiographer, CAT\*201, CAT\*202, CAT\*203, and CAT\*204 with a "C" or better for all.

**CAT\*207, CT Procedures and Instrumentation II (3 credit)**

This course will introduce students to the set-up and operation necessary to acquire optimal images of the chest, abdomen, pelvis and extremities. Emphasis will be placed on the acquisition techniques required to obtain optimal images of the chest, abdomen, pelvis and extremities including their respective pathologies. *Prerequisites:* Admission to the Computed Tomography Program, ARRT Registered Radiographer, CAT\*201, CAT\*202, CAT\*203, and CAT\*204 with a "C" or better for all.

**CAT\*208, Clinical Experience II (4 cr.)**

This course introduces the student to the clinical setting and the practical skills necessary to operate computed tomography imaging systems. Clinical competency evaluations are performed during this course. *Prerequisites:* Admission to the Computed Tomography Program, ARRT Registered Radiographer, CAT\*201, CAT\*202, CAT\*203, and CAT\*204 with a "C" or better for all.

**CRIMINAL JUSTICE (CJS\*)**

\$\$ Supplemental Course Fee: Many science lab courses require a separate fee added at the time of registration in order to cover the cost of additional instructional time, supplies and materials used by students.

**CJS\*101, Intro to Criminal Justice (3 cr.)**

*Gen Ed Competency: Social Phenomena*  
This course examines an overview of the criminal justice system on the local, state and federal levels in the United States. Students will be exposed to the historical, theoretical, philosophical and practical perspectives of the system's police, court and correctional agencies. The course is required and is a core class in the Criminal Justice major. *Prerequisites:* Eligible for ENG\*101-ALP, ENG\*101E, or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**CJS\*102, Introduction to Corrections (3 cr.)**

*Gen Ed Competency: Social Phenomena*  
A study of the history, philosophy, and evolution of corrections as well as the functions of U.S. jails and prisons. The course also examines the procedures used by state and federal courts that result in the sentencing of offenders to penal institutions and community-based supervision and treatment programs. *Prerequisites:* CJS\*101 (can be taken concurrently) and eligible for ENG\*101-ALP, ENG\*101E, or ENG\*101.

**CJS\*105, Introduction to Law Enforcement (3 cr.)**

*Gen Ed Competency: Social Phenomena*  
This course offers a comprehensive examination of the public safety and law enforcement functions of government in a modern society. Topics covered will include the evolution, history, and philosophy of the law enforcement function: the role of the police in a democratic society; police accountability, corruption and deviance; police operational principles and practices; and, current problems confronting the police in their relationship to the community they serve. *Prerequisites:* CJS\*101 (can be taken concurrently) and eligibility for ENG\*101-ALP, ENG\*101E, or ENG\*101. (New course, effective Spring 2016)

**CJS\*106, Intro to Homeland Security (3 cr.)**

*Gen Ed Competency: Social Phenomena*  
An introduction to the fundamental concepts of homeland security in the United States. This course examines the planning, preparedness, management, and response of governmental and non-governmental agencies to man-made and natural disasters. An historical perspective of events related to homeland security will also be examined in addition to technological and transportation implications. *Prerequisites:* CJS\*101, which may be taken concurrently.

**CJS\*151, Criminal Justice Supervision and Administration (3 cr.)**

In this course students study the essentials of personnel administration, management and supervision within criminal justice agencies. Topics include supervisory principles, discipline, motivation, training, ethics, recruitment, managing and supervising in a diverse workplace, and interviewing techniques. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**CJS\*211, Criminal Law I (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy, Critical Analysis & Logical Thinking*  
The study of the act(s) and mental state(s) which make up the elements of a crime. The analysis of these criminal elements will allow exploration into a wide spectrum of criminal law including felonies and misdemeanors. This is not a course specifically addressing Connecticut laws, although they will be discussed in comparison with other state and federal court decisions. *Prerequisites:* CJS\*101 with a "C-" or better, AND ENG\*101-ALP, ENG\*101E, or ENG\*101 with a "C-" or better.

**CJS\*212, Criminal Law II (3 cr.)**

*Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking*

A study of the act(s) and mental state(s) which make up the elements of a crime. The analysis of these criminal elements will allow exploration into a wide spectrum of criminal law including felonies and misdemeanors. This is not a course specifically addressing Connecticut laws, although they will be discussed in comparison with other state and federal court decisions. Content of the course will build on the foundation laid in CJS\*211: Criminal Law I. **Prerequisites:** CJS\*211 with a "C-" or better. (New course, effective Spring 2016)

**CJS\*213, Evidence and Criminal Procedure (3 cr.)**

*Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking*

This course provides students with fundamental principles relative to procedures and processes within the Criminal Justice system as applied to arrest, the use of force, and search and seizure. The course provides the student with an opportunity to examine the various types of evidence and "proof" in regard to kind, degree, admissibility, competence, and weight. **Prerequisites:** CJS\*101 with a "C-" or better, AND ENG\*101-ALP, ENG\*101E, or ENG\*101 with a "C-" or better.

**CJS\*220, Criminal Investigation (3 cr.)**

*Gen Ed Competency: Social Phenomena*

In this course students study the fundamental principles and relative theories applicable to criminal investigation. The course includes the consideration of development of information sources, identification of witnesses and suspects, laws and techniques relative to interview and interrogation and admissions, and case preparation techniques. **Prerequisites:** CJS\*101 with a "C-" or better, AND ENG\*101-ALP, ENG\*101E, or ENG\*101 with a "C-" or better. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**CJS\*225, Forensic Science (3 cr.)**

*This course was replaced by CJS\*285/SCI\*285. Students may not get credit for both CJS\*225 and CJS\*285/SCI\*285.*

**CJS\*250, Police Organization and Management (3 cr.)**

*Gen Ed Competency: Social Phenomena*

This course exposes students to the complexities inherent in the administration of modern law enforcement organizations by presenting and analyzing a variety of management styles and administrative techniques used in such organizations. Students will examine many of the internal and external factors that impact contemporary law enforcement organizations (e.g., federal regulations, political structures, community needs, press, etc.). **Prerequisites:** CJS\*101 with a "C-" or better, AND ENG\*101-ALP, ENG\*101E, or ENG\*101 with a "C-" or better. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**CJS\*252, Professional Development-Leadership (3 cr.)**

The course is designed to provide students with fundamental and advanced components of leadership theory as it relates to Criminal justice organizations. **Prerequisites:** CJS\*101

**CJS\*255, Ethical Issues in Criminal Justice Leadership (3 cr.)**

*Gen Ed Competency: Social Phenomena*

This course is designed to provide students with an understanding of the necessity of high standards of ethical and moral behavior in the justice system. Areas of focus include ethical and moral issues in personal, social, and criminal justice contexts. Comprehensive coverage is achieved through focus on law enforcement, legal practice, sentencing, corrections, research, crime control policy, and philosophical issues. This is an "L" course. **Prerequisites:** CJS\*101 with a "C-" or better, AND ENG\*101-ALP, ENG\*101E, or ENG\*101 with a "C-" or better. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**CJS\*285/SCI\*285, Forensic Science with Laboratory (4 credits/6 contact hours)**

**\$\$ Laboratory Course Fee**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

A study of how the disciplines of Biology, Chemistry, Earth Science, Physical Science, and Physics meld to form the field of Forensic Science. The course will focus on developing the scientific vocabulary necessary for investigators to communicate with scientists. This course is meant to assist students who are pursuing a career in criminal justice. Emphasis of the course is placed on scientific

analysis of data rather than detective work. Students will learn to appreciate how the major fields of science are utilized in solving crimes. The laboratory component will provide hands-on opportunities to integrate scientific methodology as it relates to criminal justice and the limitations of scientific testing. **Prerequisites:** ENG\*101-ALP, ENG\*101E, or ENG\*101 with a grade of "C-" or better AND eligible for MAT\*137 or MAT\*137E. This course replaces CJS\*225 Forensic Science. Students cannot get academic credit for taking both CJS\*225 and CJS\*285/SCI\*285.

**CJS\*288, Careers in Criminal Justice (3 cr.)**

*Gen Ed Competency: Social Phenomena*

The course is designed to provide students with the practical skills necessary for employment within the field of criminal justice. Students will explore the physical, intellectual, and psychological demands associated with obtaining and maintaining a career within the field of criminal justice. The course will explore various types of job opportunities available within the courts, corrections, and law enforcement community, to include the application and selection process for each of these positions. Students will learn the various physical fitness standards associated with each position as well as the necessary written and oral communication skills. Students will draft both a cover letter and resume, in conjunction with participating in a mock oral board interview. **Prerequisites:** ENG\*101-ALP, ENG\*101E, or ENG\*101 with a grade of "C" or better, AND completion of 12 credits in criminal justice courses.

**CJS\*290, Practicum in Criminal Justice (3 cr.)**

*Gen Ed Competencies: Social Phenomena, Written Communication in English*

Open to students in Criminal Justice programs, this practicum offers participants the opportunity to put learned theory to practical application. Assignments are individualized and may vary. Those who are not currently employed in a field directly related to their program may be assigned either a research project/paper or a supervised internship experience. Those currently employed in a field directly related to their study will be required to relate their experiences through appropriate assignments. **Prerequisites:** Instructor Approval, AND ENG\*101-ALP, ENG\*101E, or ENG\*101 with a "C-" or better.



### **CJS\*294, Contemporary Issues in Criminal Justice (3 cr.)**

Gen Ed Competencies: Critical Analysis & Logical Thinking, Social Phenomena  
In this course students will be exposed to the contemporary issues that impact the functions, and organization of Criminal Justice agencies in the United States. Topics in the course includes issues such as; racial profiling, torture, capital punishment, gender, social stratification, social class, politics, and use of force. The focus and content of the course will change each year to reflect the changes in political and social thought and their impact on public policy. **Prerequisites:** ENG\*101, ENG\*101E, or ENG\*101-ALP with a "C-" or better AND CJS\*101 with a "C-" or better.

### **CJS\*298, Special Topics in Criminal Justice (1-3 credits)**

Special topics courses may be offered for 1 to 3 credits, depending on the content of the class. These courses are designed to expose students to a vast array of specialized topics within the field of criminal justice. Three, 1-credit courses can be bundled to fulfill a criminal justice directed elective requirement.

### **SOC\*240, Criminology (3 cr.)**

Gen Ed Competencies: Scientific Reasoning, Social Phenomena  
The course examines the nature and cause of crime, approaches to the study of crime, and its treatment and prevention. The sociology of criminal law and the nature of criminal behavior are also examined. **Prerequisites:** Eligible for ENG\*101-ALP, ENG\*101E or ENG\*101. (Prerequisite updated October 2015, to add ENG\*101-ALP) (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.) Eligible for ENG\*101-ALP, ENG\*101E or ENG\*101.

## **DIGITAL ARTS/ MULTIMEDIA (DGA\*)**

### **DGA\*101, Introduction to Digital Arts (3 cr.)**

Gen Ed Competencies: Aesthetic Dimensions, Creativity  
A hands-on introduction to the field of digital multimedia which integrates text, images, graphics, sounds, video, and animation in an interactive computer environment. Students will learn about multimedia technology, terminology, production techniques, and software. Production work will include an introduction to multimedia authoring.

### **DGA\*110, Computer Graphics (3 cr.)**

Gen Ed Competencies: Aesthetic Dimensions, Creativity  
An introduction to the computer as a tool for art and media imaging. Basic computer skills and an introduction to the major applications used for digital illustration, image manipulation, and page layout.

### **DGA\*120, Digital Imaging I (3 cr.)**

Gen Ed Competencies: Aesthetic Dimensions, Creativity  
Students will receive in-depth instruction in the leading digital image editing software which is used in commercial graphics, video production and multimedia. This software is used to edit and manipulate scanned photographs and other images using masking, retouching and other special effects. Topics covered include: image creation and editing; digital scanning; digital color theory and file formats; typographic effects; advanced filter techniques; automation and performance options; and hardware considerations. **Prerequisites:** DGA\*110. **Recommended:** ART\*121.

### **COM\*125/DGA\*125, New Media Production (3 cr.)**

*See page 138 for full description.*  
**DGA\*182, Digital Video Technology (3 cr.)**  
Gen Ed Competencies: Aesthetic Dimensions, Creativity  
This course examines digital video technology with emphasis on the video production workflow including digital video theory, content acquisition, asset management, post-production and distribution. Students will learn the tools necessary to integrate video footage with computer graphics, animation, visual effects and interactivity. Preparing and compressing video for a variety of applications and platforms including SD/ HD broadcast television, DVD, Internet and network streaming will also be covered. **Prerequisites:** One of the following: COM\*129, COM\*142, DGA\*101, or DGA\*110.

### **DGA\*223, Digital Illustration (3 cr.)**

Gen Ed Competencies: Aesthetic Dimensions, Creativity  
Students will receive in-depth instruction in this leading illustration software package which is used in commercial graphics, video production and multimedia. This software explores the use of spline-based drawing tools and the various techniques used to create vector-based artwork. Topics covered include Bezier curve construction, path editing, color and custom gradients, patterns, typographic effects, filter techniques, printing and output options, and

hardware considerations. **Prerequisites:** DGA\*110. **Recommended:** ART\*121.

### **DGA\*231, Digital Page Design I (3 cr.)**

Gen Ed Competencies: Aesthetic Dimensions, Creativity  
Students will receive in-depth instruction in this leading desktop publishing software package which is used in commercial graphics and multimedia. Desktop publishing software is used for creating layouts of text, graphics, photographs and other visual images for print. This course provides the hands-on instruction to create publication files and templates for typical office documents, technical manuals, marketing literature, books, newsletters, magazines and package design. Topics include: digital typography; style sheets, layout grids and master page techniques, graphic design fundamentals, image processing effects, overprinting, trapping and color palette systems, plugin architecture and common desktop publishing issues. **Prerequisites:** DGA\*110. **Recommended:** ART\*121.

### **DGA\*241, Internet Web Design I (3 cr.)**

Gen Ed Competencies: Aesthetic Dimensions, Creativity  
An introduction to graphic and multimedia design used in web page and site creation by teaching basic design concepts essential to good Web publishing. This course discusses the anatomy of a Web page, identifies design elements and tackles design issues such as the constraints of designing effective web sites across different browsers and platforms, monitor size and resolution, color palettes, and graphic file size. This course also covers the design process including project planning, mapping, interface design, prototyping, analyzing and organizing content, hyperlinks and page layout using tables, grids and frames. Students will use industry standard applications for coding HTML and creating, editing and integrating graphics and multimedia elements. **Prerequisites:** DGA\*110. **Recommended:** DGA\*202 and ART\*121.

**DGA\*242, Internet Web Design II (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

A continuation of DGA\*241 that explores the creative and technical design processes behind successful communicative and interactive Web page construction.

Topics covered will include color and typographic relationships; graphic and media production techniques; graphic design and layout considerations; and usefulness and effectiveness of current Web technologies, including audio, video, animation and scripting options. Students' experience will include the production of various Web pages and culminate with the creation of several Web sites. *Prerequisites:* DGA\*241.

**DGA\*250, Interactive Multimedia Production (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Students will explore the various multimedia authoring programs used in the industry. Authoring is the software that integrates sound, images, and graphics in an interactive environment. Various programming languages particular to each package, importing various media elements and cross platform production will be covered.

*Prerequisites:* DGA\*101.

**DGA\*256, 3D Animation Foundations (3 cr.)**

*Gen Ed Competency: Creativity*

An introduction to the creative and technical processes involved in the production of 3-dimensional modeling and animation.

Through theories, instructions, visual examples, and hands-on production students will learn the fundamental principles of modeling and animating virtual objects and environments using industry-leading software and hardware. Students' experience will include the production of various modeled and animated project to further enhance their production portfolios.

*Prerequisites:* DGA\*101, DGA\*110.

**DGA\*257, Motion Graphics and Effects (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

An introduction to the creative and technical processes involved in the production of motion graphics and visual effects. Through theories, instructions, visual examples, and hands-on production students will learn the fundamental principles of animating and producing visual effects utilizing industry-leading software and hardware. Topics include: motion graphic animation concepts,

compositing, masking, effects, keying, motion tracking, rotoscoping and animating in 3D space. Students' experience will include the production of various animated projects to further enhance their production portfolios.

*Prerequisites:* DGA\*101, DGA\*110.

**DGA\*260, Animation (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

An introduction to the creative and technical processes behind the animated image. Through theories, instructions, visual examples, and hands-on production students will learn the fundamental principles of animation. Students will explore 2-dimensional cel, stop-motion, 2-dimensional digital, and motion graphic techniques. Additional topics covered will include: storyboarding; character development; time-lapse photography; collage techniques; and basic editing aesthetics. Students' experience will include the production of various animated projects in a number of different formats ranging from the printed page to computer-based digital image. *Prerequisites:* DGA\*110.

**DRUG & ALCOHOL REHAB. (DAR\*)****DAR\*101, Public Health Issues: Abuse & Addiction (3 cr.)**

*Gen Ed Competency: Social Phenomena*

Key issues of the alcohol and drug abuse treatment field from the standpoint of the unique sociological and public health aspects involved. *Prerequisites:* Eligible for either ENG\*101E, or ENG\*101.

**DAR\*114, Introduction to Family Systems (3 cr.)**

*Gen Ed Competency: Social Phenomena*

Presents an overview of family systems with special emphasis toward families afflicted with substance abuse. The particular areas discussed include the structure and function of the family, role structure, development stages, communications systems and functional and dysfunctional families.

*Prerequisites:* HSE\*202.

**DAR\*158, Biology of Addiction (3 cr.)**

Study of drug abuse in current times, including the pharmacology and pathology of chronic drug abuse with respect to the individual as well as society and the law.

*Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

**EARLY CHILDHOOD EDUCATION (ECE\*)****ECE\*101, Introduction to Early Childhood Education (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy*

A study of the historical, philosophical and social perspectives of early care and education. Emphasis will be on modern development and trends, along with an understanding of the organization and composition of early childhood education settings, which include curriculum materials, learning environments and equipment. This course will involve 10 hours of field observation and participation in a preschool setting. *Prerequisites:* Eligible for ENG\*101E or ENG\*101. Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.

**ECE\*103, Creative Art Experiences for Children (3 cr.)**

The exploration of the relationship of creative art to the total educational program of the young child. Experimentation with the use of various media techniques and methods will be included.

**ECE\*106, Music and Movement for Children (3 cr.)**

An investigation of the role of music and movement in early childhood development. Emphasis will be on the elements of songs, circle games, rhythmic activities and instruments.

**ECE\*131, Children's Literature (3 cr.)**

*Gen Ed Competencies: Continuing Learning/Information Literacy*

This course offers an overview of children's literature including its history, genres, and leading authors and illustrators. It covers selection and critical study of books for children, including folklore, poetry, fiction and nonfiction. Issues related to children's literature and literature extension activities will also be explored. *Prerequisites:* ECE\*101 and either ENG\*101E or ENG\*101E.

### **ECE\*141, Infant/Toddler Growth & Development (3 cr.)**

An introduction to the care and teaching of infants and toddlers, which emphasizes the interrelationship between social, emotional, cognitive, physical and language development. Age appropriate curriculum strategies will be based on developmental theories. Components of a high quality program will be explored. Students are required to complete 10 hours of field observation and participation in an infant/toddler program.

### **ECE\*176, Health, Safety, and Nutrition (3 cr.)**

The relationship between health, safety and nutrition and child development will be explored. 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 Preparation Course (3 cr.)**

Child Development Associate Preparation Course: This course will explore the process a student must undertake to be credentialed as a Child Development Associate. In addition, the course will provide a thorough review of each of the eight content areas as identified by the Council for early Childhood Professional Recognition; assist the student in the development of a Professional Resource File; and provide a meaningful field placement opportunity.

### **ECE\*210, Observation & Participation Seminar (3 cr.)**

The study of observing and recording children's behavior, focusing on objective observations and the interpretation and understanding of the behavior. Observation and participation placements in approved early childhood settings are required. This course consists of 90 hours of field observation and participation in an approved preschool setting. *Prerequisites:* ECE\*101.

### **ECE\*215, The Exceptional Learner (3 cr.)**

The study of the exceptional or special needs child. Emphasis is on the history, laws, concepts, practices and terminology used by professionals in the field. Educators are assisted in understanding the needs of students with exceptionalities and helped to identify the characteristics, issues, and instructional considerations for students with disabilities. This course consists of 25 hours of field observation and participation in a special education preschool setting. *Prerequisites:* ECE\*101. (Fulfills a "D" course requirement for students who enrolled in

a degree program prior to the Fall 2016 semester.)

### **ECE\*231, Early Language and Literacy Development (3 cr.)**

Introduction to language and literacy development in the young child. Students will explore the early childhood language arts curriculum including speaking, listening, writing, and reading skills. The teacher's role and methods of creating a literacy-rich environment that engages children in creative, developmentally appropriate language-arts experiences will be examined. Students will create plans and materials for use with children. *Prerequisites:* ECE\*101.

### **ECE\*275, Child, Family and School Relations (3 cr.)**

An in-depth look at the child, the family, and the relationship between the school and the family. An understanding of child behavior and its guidance will be examined, as will communication with families. Students will explore today's families and how schools can develop working relationships with families. *Prerequisites:* ECE\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **ECE\*295, Student Teaching Practicum (6 cr.)**

Guided observation, participation and supervised student teaching in NAEYC accredited center or kindergarten is required. The purpose of student teaching is to enable the student to apply child development theory in a learning environment and to work with children under close supervision. Students will manage a classroom independently, plan, organize, implement and evaluate classroom activities. Students will complete 220 hours of student teaching. Weekly seminars devoted to issues in Early Childhood Education and the experience of student teachers will extend the individual's student teaching experience. In addition to the prerequisites below, students must take 9 more credits of Early Childhood Education courses with a grade of 'C' or better. *Prerequisites:* ENG\*101E or ENG\*101, PSY\*204, ECE\*101, ECE\*210.

## **EARTH SCIENCE (EAS\*)**

### **EAS\*102, Earth Science (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*  
An introductory survey of the planet Earth, which covers topics in astronomy, oceanography, meteorology, and geology. May be taken as a general science elective.

Field trips included. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101, and either MAT\*085, MAT\*095-I, or MAT\*095 with a "C-" or better or taken concurrently.

### **EAS\*106, Natural Disasters (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Scientific Knowledge & Understanding*

This course examines the science behind different types of natural disasters and our ability or inability to control and predict such events. From this course, students will gain an appreciation of natural disasters and will better understand how the effects of disasters can be reduced. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

### **EAS\*107, Earth Resources (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

A view of earth's resources, their occurrence, extraction and use, and their impact with the environment. Topics include mineral, energy, metals, and construction and industrial Earth resources. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101, and eligible for MAT\*095 or higher.

## **ECONOMICS (ECN\*)**

### **ECN\*100, Introduction to Economics (3 cr.)**

Practical microeconomics and macroeconomics in one semester. Excellent foundation for all business and related careers. Essential tools for individual and business decision making. Fundamentals of how buyers and sellers interact, and prices. Basic economic interrelationships among families, businesses, and government. Understanding inflation, unemployment, taxes, and government policies to improve our economy. Relate current news to our discussions. Not open to students who have completed ECN\*101 or ECN\*102.

### **ECN\*101, Principles of Macroeconomics (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Social Phenomena*  
An elementary study of the macroeconomic system. A study of the interrelationships among the household, business and government sectors. An elementary study of output, income, employment, consumption, inflation, fluctuations in the economy, and fiscal and monetary policy. This course should be taken after ECN\*102. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101 and eligible for either MAT\*137E or MAT\*137.

**ECN\*102, Principles of Microeconomics (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Global Knowledge, Social Phenomena*

An elementary study of the principles of economics related to relative scarcity and resource allocation. The course provides a basic study of a market economy and various kinds of market structures. Some time is devoted to cost and to labor economics. Should be taken before ECN\*101. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101 and eligible for either MAT\*137E or MAT\*137.

**ECN\*220, International Economics (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Global Knowledge, Social Phenomena*

A study of the principles and applications of international trade and finance, comparative advantage, exchange rates, monetary standards, and international economic institutions. Investigation of national policies and balance of payments issues vis-a-vis open-market economics and globalization. The positions in the global economy of China, the United States, and other countries, and regional economic arrangements are examined. *Prerequisites:* ECN\*101 and ECN\*102; one of these two courses may be taken concurrently. *Recommended:* MAT\*137 and ENG\*101.

**ENGINEERING (EGR\*)****EGR\*111, Introduction to Engineering (3 cr.)**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*  
An introduction to engineering analysis. Topics include forces, energy, thermodynamics, electrical circuits, and fluids. Analysis includes practice with units and conversions, graphing, and statistics. Students are introduced to solving problems using MATLAB. *Prerequisites:* MAT\*186 or taken concurrently and eligible for either ENG\*101E or ENG\*101.

**EGR\*112, Engineering Drawing Specifications (3 cr.)**

An introduction to the interpretation of engineering drawings beginning with the basics of orthographic projection. Topics include: working drawings, lines, linear and angular dimensioning, sectional views, tolerances and allowances, thread representation, arrowless and tabular dimensioning, steel specifications, auxiliary views, point-to-point and datum dimensioning conforming to ANSI Y14.5M and ISO standards. (New course, Fall 2017)

**EGR\*211, Applied Mechanics I (Statics) (3 cr.)**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*  
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, moments of inertia. Vector methods are used. *Prerequisite/Co-requisite:* MAT\*256.

**EGR\*212, Applied Mechanics II (Dynamics) (3 cr.)**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*  
A basic course in dynamics covering rectilinear and curvilinear motion, translation, rotation, plane motion; work, energy, and power; impulse and momentum. The application of the principles of dynamics to engineering problems. Vector methods are used. *Prerequisites:* EGR\*211.

**EGR\*214, Engineering Thermodynamics (3 cr.)**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*  
This course covers energy concepts and balances, basic definitions including the first and second laws of thermodynamics, ideal and real gases, thermodynamic properties, and introductory cycle analysis. *Prerequisites:* MAT\*254 and PHY\*221, or taking concurrently.

**EGR\*221, Introduction to Electric Circuit Analysis (4 cr.)**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*  
This course covers the basic concepts, theorems, laws, methods of analysis, and application examples in DC and AC circuits. Topics include resistance, capacitance, inductance, operational amplifiers, Ohm's Law, Kirchhoff's Laws, Thevenin's and Norton's Theorems, Nodal and Loop analysis, first and second order transient circuits, steady-state analysis, and polyphase circuits. Laboratory experiments involve using simulation software and using instruments for circuit building and testing. Four hours of lecture/laboratory per week. *Prerequisites:* MAT\*254.

**EGR\*250, Computational Methods for Engineering (3 Credits)**

The application of industry standard computational tools for problem solving, graphing and analyzing engineering data, and programming of formulae, procedures, and macros. *Prerequisites:* EGR\*111, and MAT\*254 or taken concurrently

**ENGLISH (ENG\*)****EDUC 1003, English Fast Track (Reading-Writing) Workshop (0 credits, 24-30 classroom hours)**

This non-credit, fast-track workshop is designed to help students refresh their skills in essay writing, grammar, and reading comprehension. The workshop will be particularly beneficial for students placing at the intensive level but are open to all students. At the end of the workshop, students may retake a placement test to see if they can progress to College Level or College Level with Embedded Support.

**EDUC 1010, Fast Track: Grammar (0 credits, 5-15 classroom hours)**

This noncredit workshop is designed to help students refresh their skills in grammar and punctuation. This grammar workshop would be particularly beneficial for students who need to improve their Accuplacer Sentence Skills score. It is recommended that students who take this workshop also take Fast Track: Essay Writing.

**EDUC 1011, Fast Track: Reading (0 credits, 5-15 classroom hours)**

This noncredit workshop is designed to help students refresh their skills in reading comprehension and vocabulary. This reading comprehension workshop would be particularly beneficial for students who need to improve their Accuplacer Reading Comprehension score. It is recommended that students who take this workshop also take Fast Track: Essay Writing.

**EDUC 1012, Fast Track: Essay Writing (0 cr., 5-15 classroom hours)**

This noncredit workshop is designed to help students refresh their skills in essay writing. This workshop would be particularly beneficial for students who would like to become more familiar with college level essay writing. Fast Track: Essay Writing is strongly recommended for students taking Fast Track: Grammar, Fast Track: Reading, or both workshops



### **EDUC 1017, College and Career Success (0 cr.)**

This noncredit course is designed to enhance students' college and career readiness. The course provides an extended orientation to college, teaches skill sets to support college-level courses, and introduces college majors and careers. Some topics included are learning styles, study strategies, note taking, and test preparation.

### **EDUC 1020, English Brush Up (Reading-Writing) Workshop (0 cr., 24-30 classroom hours)**

This non-credit, English workshop is designed to help students refresh their skills in essay writing, grammar, and reading comprehension.

### **ENG\*096, Introduction to College English (6 credits)**

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

### **EMBEDDED-LEVEL COURSES**

(GRADUATION CREDIT WITH REQUIRED NON-CREDIT SUPPORT)

The Accelerated Learning Program (ALP) gives students with higher developmental placement scores the opportunity to pass college-ready ENG\*101 during the same semester. Students must register for special, linked sections of both ENG\*099A (formerly ENG\*063-ALP) and ENG\*101-ALP. *Prerequisites:* by Placement Exam or Recommendation of Instructor.

### **ENG\*099A, Transition to Composition: Accelerated Learning Program (3 developmental credits)**

*Formerly ENG\*063-ALP, Writing: Introduction to the Essay*

ENG\*099-A is the paired course to ENG\*101-ALP and is part of the Accelerated Learning Program (ALP) in English Composition. The ALP offers students whose placement scores would otherwise not permit them to enroll in ENG\*101, the opportunity to pass ENG\*101 by

taking ENG\*099-A, Transition to Composition. ENG\*099 is not a separate course but offers students additional support in meeting ENG\*101 learning outcomes. Students in this course will meet with their ENG\*101 professor in a small group setting and receive more time on task, individualized instruction, and supplemental help with reading, writing, and grammar. Students who register for ENG\*099-A must also register for the paired section of ENG\*101-ALP. This course does not satisfy an English requirement or an elective in any degree program, nor do its credits count toward graduation. Available only to students who place into or are recommended for the Accelerated Learning Program, or students who earn a "C" or higher in ENG\*096. Students must also register for the paired ENG\*101-ALP during the same semester.

### **ENG\*101 • ENG\*101-ALP, Composition (3 cr.) Fall • Spring • Summer**

*Gen Ed Competencies: Written Communication in English*

Students will develop written texts of varying lengths and styles for different audiences and purposes. They will respond to rhetorical situations, use sources, craft logical arguments, apply language conventions, and formulate effective writing strategies. *Reading Prerequisites:* ENG\*073 or ESL\*173 with a grade of "C" or better, or placement, or SAT/ACT scores; *Writing Prerequisites:* ENG\*063 with a grade of "C" or better, or placement; or SAT/ACT scores; or ENG\*096 with a grade of "C" or better. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **ENG\*101E, Composition Embedded (3 credits/4 contact hours) \$\$ Supplemental Course Fee**

*Gen Ed Competency: Written Communication in English*

Composition focuses on the study and practice of effective written communication across a variety of rhetorical situations. The course develops skills in applying language conventions, engaging with and using authoritative sources, and crafting logical arguments. Composition with Embedded support meets the same outcomes as ENG\*101, but offers students additional support through supplemental instruction, increased time on task, focused workshops, and/or tutoring. *Reading Prerequisites:* ENG\* 073 or ESL \*173 with a grade of "C" or better, or placement, or SAT/ACT scores; *Writing Prerequisites:* ENG\*063 with a grade

of "C-" or better; or placement; or SAT/ACT scores; or ENG\*096 with a grade of "C" or better. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **COLLEGE-LEVEL COURSES (GRADUATION CREDIT)**

#### **ENG\*101 Composition (3 cr.)**

*Gen Ed Competencies: Written Communication in English*

Students will develop written texts of varying lengths and styles for different audiences and purposes. They will respond to rhetorical situations, use sources, craft logical arguments, apply language conventions, and formulate effective writing strategies.

*Reading Prerequisites:* ENG\*073 or ESL\*173 with a grade of "C" or better, or placement, or SAT/ACT scores; *Writing Prerequisites:* ENG\*063 with a grade of "C" or better, or placement; or SAT/ACT scores; or ENG\*096 with a grade of "C" or better. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

#### **ENG\*102, Literature and Composition (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Students will learn how to develop interpretations of literature through reading short fiction, poetry, drama, and essays. They will be introduced to literary terminology and to standard critical approaches. They will also learn how to use source materials in order to clearly express their views about literature in several argumentative essays, which includes at least one research essay. *Prerequisites:* Either ENG\*101ALP, ENG\*101E, or ENG\*101 with a "C" or better. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

#### **ENG\*110, Introduction to Literature (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course provides an introduction to fiction, drama, and poetry through reading literature from different genres, historical periods, and of various styles. Students will learn the elements of fiction, the basics for reading drama, and an introduction to poetics in order to conduct literary analyses. *Prerequisites:* Either ENG\*101ALP, ENG\*101E, or ENG\*101 with a "C" or better.

**ENG\*200, Advanced Composition (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

A thorough study of rhetoric, prose style, argumentation, and editing through sophisticated non-fiction readings. Minimum of three extensive essays with various levels of research. This may not be used as a 200 level literature course. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 with a "B-" or better. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*202, Technical Writing (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Practice and analysis of formats used in scientific and industrial writing. This may not be used as a 200-level literature course. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*210, Fiction (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Students will analyze different forms of fiction to critique its elements and to learn the history of the genre. Students will write analytical essays, including at least one with research. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*211, Short Story (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of the short story from the 19th century to the present. Focus on literary and historical context, close reading, and interpretation. Researched essays are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills a "D" course requirement or an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*213, Poetry (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

This course is an introduction to poetry as a literary genre. Students will learn the elements of poetry and standard critical approaches to read and analyze poems from different historical periods and of various styles. Students will write analytical essays, including at least one with research. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*214, Drama (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of major works of dramatic literature. Focus on literary and historical context, close reading, and interpretation. Researched essays are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*218, Autobiography (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of major works of classic and contemporary autobiographical writings. Focus on literary and historical context, close reading, and interpretation. Researched essays are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills a "D" course requirement or an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*220, Studies in American Literature (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of the American novel since World War II. Focus on literary and historical context, close reading, and interpretation. Researched essays are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*221, American Literature I (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of major works of American literature from early American through the mid-nineteenth century. Focus on literary and historical context, close reading, and interpretation. Researched essays are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*222, American Literature II (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of major works of American literature from the mid-nineteenth century through the present. Focus on literary and historical context, close reading, and interpretation. Researched essays are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*231, British Literature I (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of major works of British literature from Old English through the 18th century. Focus on literary and historical context, close reading, and interpretation. Researched essays are required. **Prerequisites:** Either ENG\*101, ENG\*101E, or ENG\*101ALP and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*232, British Literature II (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of major works of British literature from the Romantics through the present. Focus on literary and historical context, close reading, and interpretation. Researched essays are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)



**ENG\*233, Shakespeare (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

A study of the major plays of Shakespeare with special emphasis on the histories and comedies. Focus on literary and historical context, and close reading and analysis of Shakespeare's poetics and characters. Researched essays are required.

**Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*234, Shakespeare II (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

A study of the major plays of Shakespeare with special emphasis on the tragedies and romances. Focus on literary and historical context, and close reading and analysis of Shakespeare's poetics and characters. Researched essays are required.

**Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*241, World Literature I (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of major works of world literature through the 18th century. Focus on literary and historical context, close reading, and interpretations of texts other than British and American. Researched essays are required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*242, World Literature II (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Reading and analysis of major works of world literature from the 19th, 20th, and 21st centuries. Focus on literary and historical context, close reading, and interpretations of texts other than British and American. Researched essays are required.

**Prerequisites:** Either ENG\*101ALP, ENG\*101E or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*262, Women in Literature (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

Students will explore the contributions of women authors to literature by reading and analyzing works by women. These works represent the traditional genres of poetry and fiction in addition to autobiography/ memoir, diary, speech, and essay. Students will explore feminist literary theory and criticism as well as investigate the roles played by class, sexual orientation, and culture. Students will write analytical essays, including at least one with research.

**Prerequisites:** Either ENG\*101, ENG\*101E, or ENG\*101ALP and either ENG\*102 or ENG\*110. (Fulfills a "D" course requirement or an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*281, Creative Writing (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Students will learn and practice the craft elements of writing poetry, fiction, and/or non-fiction, examine the works of writers in the genres, and receive and offer critique in workshop setting. Students will submit end of semester portfolio and work for possible publication in Pegasus literary journal.

**Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101.

**ENG\*282, Creative Writing – Poetry (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

This course is a continuation of creative writing skills begun in ENG\*281, Creative Writing, focusing exclusively on the technique of writing poetry. Students will continue to study, model, and practice the craft elements of writing poetry, providing and receiving critique in a workshop setting. Revision, reading, and submission for possible publication will be emphasized.

**Prerequisites:** ENG\*281.

**ENG\*283, Creative Writing – Fiction (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Focuses on the elements and techniques of fiction writing. Students will study examples of fiction and discuss and practice elements of craft, such as character, conflict development, dialogue, and point of view. Student will write fiction and discuss their work in a workshop environment.

**Prerequisites:** ENG\*281.

**ENG\*285, Memoir Writing (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

The primary focus of the class will be creating personal essays – writing may include travel or political pieces, memoir, interviews, or other forms of nonfiction. Students will share, discuss, and revise their work. Students will read a wide range of published nonfiction, write reflectively about the published essays, and model the work of established authors. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 with a "B-" or better.

**ENG\*291, Mythology (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

This course will explore mythology from ancient to modern periods. Students will read and analyze myths, explore critical approaches, and assess its impact on society. Students will write analytical essays, including at least one with research.

**Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ENG\*296 Work Experience in English (1 credit)**

This course is intended to help those thinking of pursuing a degree in education or simply any individuals who wish to use their own English content knowledge to assist others. The course provides highly qualified students the opportunity to work as a Classroom Assistant where they will develop the ability to discuss, explain, and model English concepts to students in developmental English classes. Students will work as in-class tutors and provide direct classroom assistance under the guidance and at the discretion of the professor. The student will work with a diverse population, demonstrate and apply his/her previously learned knowledge in a new capacity, and benefit from community engaged learning. The student will be asked to work a minimum 3 credit hours. The course may be taken up to three times for a maximum of 3 credit hours. At the end of the semester, the student will earn a grade of Pass ("P") or Fail ("F"). Students must be nominated by English faculty in order to be eligible for the class. **Prerequisite:** ENG\*101 (with a grade of "A-" or better) AND permission of the English Discipline Coordinator or Supervisor of English Supplemental Instruction.

**ENG\*298, Special Topics in English (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Written Communication in English*

An in-depth exploration of a specialized topic in literature. Researched essays are required.

**Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101 and either ENG\*102 or ENG\*110. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

## ENVIRONMENTAL ENGINEERING TECHNOLOGY (ENV\*)

---

**ENV\*109, OSHA 40 Hour Training and Emergency Response Procedure (3 cr.)**

This course provides the training required by 29 CFR 1910.120, and NFPA standards for hazardous waste site workers, and those involved in the emergency response to incidents involving hazardous materials. A minimum of 48 hours of classroom and/or hands-on training is required.

**ENV\*162, Environmental Sampling (3 cr.)**

An introduction to the techniques of environmental sampling and data collection for contamination and water supply investigations. Topics include soil and groundwater sampling, surface water measurements, aquifer tests, and other basic field techniques. Also included is an introduction to the concept of Brownfields, innovative remediation technologies, and the chemical nature of hazardous substances. This introductory course is intended for students with no prior exposure to field investigation techniques and as a precursor to advanced training and ENV\*212.

**ENV\*212, Site Assessment (3 cr.)**

An introduction to the environmental site assessment process. Topics include Phase I Environmental Site Assessments under the CT Property Transfer Act, further study of innovative remediation technologies, and an overview of Phase II and III Environmental Site Assessments. Also included is an overview of the CT Remediation Standard Regulations and chemical-specific remediation criteria. This introductory course is intended for students with no prior exposure to Environmental Site Assessments and CT Environmental Regulations.

**Prerequisites:** ENV\*162.

**ENV\*292, Environmental Internship (3 cr.)**

A minimum of 160 hours spent working at an organization concerned with environmental monitoring or control. Placement can include but is not limited to local health departments, DEP, local sanitarians, environmental testing laboratories, and water supply and purification companies. **Prerequisites:** Permission of program coordinator.

## ENVIRONMENTAL SCIENCE (EVS\*)

---

**EVS\*100, Introduction to Environmental Science (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking, Scientific Knowledge & Understanding*

An overview of biological and physical processes in the natural environment, and the impact of human activities. The course will explore current environmental issues both locally and globally, and critically evaluate potential solutions. Topics include threats to species and ecosystems, overpopulation, land use, air and water pollution, climate change, energy resources, resource depletion, and waste management. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101.

**EVS\*111, Environmental Science Laboratory (1 Credit/3 contact hours)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Scientific Knowledge & Understanding*

An introductory laboratory course that provides a survey of concepts and techniques in environmental science. Students will investigate habitats, ecosystems, soils, air quality, climate change, fossil fuels, and renewable energy. Student will develop observational, sampling, and analytical skills in the laboratory and in the field. The course will include fieldwork both on and off campus, and students may be required to meet at off-campus locations. 3 hours of lab per week. **Prerequisites:** EVS\*100 or taken concurrently, and eligible for MAT\*137.

**EVS\*135, Exploring Environmental Science (1 cr.)**

An introduction to environmental science career pathways. A series of guest speakers from the environmental field, including industry, government, and education, will describe their work and the skills and tools needed to be successful. The course will focus on environmental work in Connecticut with connections to broader trends. The course is open to anyone interested in environmental issues, sustainability, and career opportunities. One hour of lecture per week.

## FRENCH (FRE\*)

---

**FRE\*101, Elementary French I (3 cr.)**

*Gen Ed Competency: Social Phenomena*  
Fundamentals of grammar with emphasis on the development of speaking, listening, and writing skills. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**FRE\*102, Elementary French II (3 cr.)**

Continued development of speaking, listening, and writing skills as well as fundamentals of grammar. **Prerequisites:** FRE\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**FRE\*201, Intermediate French I (3 cr.)**

Further study of grammar with continued emphasis on the development of conversational fluency and writing proficiency. Compositions. Introduction to literature. **Prerequisites:** FRE\*102. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**FRE\*202, Intermediate French II (3 cr.)**

Continuation of the study of grammar with further emphasis on the development of conversational fluency and writing proficiency. Compositions. Literature. **Prerequisites:** FRE\*201. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

## GEOGRAPHY (GEO\*)

### **GEO\*101, Introduction to Geography (3 cr.)**

*Gen Ed Competencies: Global Knowledge, Social Phenomena*

An introductory study of geography concerned with the basic patterns of physical environment and their relationship to man. Focus is upon not only where people and activities are located on the Earth's surface and the reasons for the location but also upon geography as a social science, emphasizing the relevance of geographic concepts to human problems and conditions. As such the course's use of physical geographic concepts will help students to better understand human behavior. A topical approach is used. Included are analyses of why languages, religions, and ethnicities are arranged as they are in the World and an examination of the significance of the locations of important economic activities, including agriculture, manufacturing, and services. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

## GEOLOGY (GLG\*)

**\$\$ Supplemental Course Fee: Many science lab courses require a separate fee added at the time of registration in order to cover the cost of additional instructional time, supplies and materials used by students.**

### **GLG\*112, Geology of Connecticut (3 cr.)**

An introduction to the geological features of Connecticut and surrounding areas. Emphasis on field relations and general geological concepts. Review of history on Connecticut Geology. Field trips included. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101, and either MAT\*085, MAT\*095-I, or MAT\*095 with a "C-" or better or taken concurrently.

### **GLG\*120, Dynamic Earth (4 credits/6 contact hours)**

**\$\$ Supplemental Course Fee**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

An introduction to the physical geology of the Earth, with an emphasis on interactions between land, air, water, and life, and the cycling of energy and matter over time. This course will investigate how processes within the earth system have produced resources, landforms, catastrophes, climates, and biological evolution throughout Earth's history. Includes consideration of human

impacts on the earth system. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* Eligible for ENG\*101 and eligible for MAT\*137 or higher.

### **GLG\*121, Introduction to Physical Geology (4 cr.)**

An introduction to the principles governing the composition and structure of the Earth's crust and the study of landforms and geological processes on and within the Earth's surface. Topics include earth materials, geologic time, surface processes, internal processes, and earth structures.

*Prerequisites:* Eligible for either ENG\*101E or ENG\*101, and either MAT\*085, MAT\*095-I, or MAT\*095 with a "C-" or better or taken concurrently.

## HEALTH (HLT\*, HPE\*, MED\*, NTR\*)

### **HLT\*103, Investigations in Health Careers (3 cr.)**

This course is designed to provide the learner students with an overview of the healthcare system, health professions, general anatomy and physiology, principles of the scientific process, medical terminology, documentation, conducting scientific research and the use of information technology in the healthcare environment. The course will also include segments in signs and symptoms of illnesses, medical triage, medical ethics, and the legal responsibilities of healthcare providers. *Prerequisites:* Eligible for either ENG\*101E or ENG 101.

### **HLT\*160/SOC\*160, Introduction to Public Health (3 cr.)**

*Gen Ed Competencies: Global Knowledge, Scientific Reasoning, Social Phenomena* This course provides a basic overview of public health and various public health systems. It provides a foundation for the understanding of public health principles and practices for any student interested in social work, health careers, biology, health education, or simply being an informed citizen. Topics will include the effects of individual lifestyle decisions and their relation to personal and public health. The course deals with a variety of current public health threats and trends, and how public health professionals play a role in identifying and remediating or avoiding them. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **MED\*125, Medical Terminology (3 cr.)**

This course is an introduction to basic medical terminology including origins of scientific terms, suffixes and prefixes which will enhance student ability to interpret and discuss scientific and clinical concepts. Concentration is on medical terminology which facilitates the student's comprehension of materials in patient records, medical reports and scientific articles. Clinical cases including diagnostic reports are utilized for discussion in this course. *Prerequisites:* Eligible for either ENG\*101E or 101.

### **MED\*250, Principles of Pharmacology (3 cr.)**

An examination of the more commonly prescribed medications as they relate to specific body systems. Topics include practices governing the use, dispensing, administration, and storage of pharmaceuticals. Terminology relating to drugs and the administration of drugs is emphasized. *Prerequisites:* MED\*125

### **NTR\*100, Introduction to Nutrition & Dietetics (1 cr.)**

This course acquaints students with the nutrition and dietetics profession including the many roles of dietetics professionals and training requirements. In addition, the course will cover continuing education requirements for dietetics professionals to maintain their credentials. Students will also learn how nutrition and dietetics professionals function as members of the health care team. The course complements material presented in HLT\*103, Investigations in Health Careers. It may be taken independently, or in conjunction with HLT\*103. For students intending to transfer into the Nutrition and Dietetics Associate Degree Program at Gateway Community College HLT\*103 and NTR\*100 will meet program requirements for NTR\*101. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101. (New course, Fall 2017)

## HEALTH INFORMATION MANAGEMENT (HIM\*)

### HIM\*113, Healthcare Delivery Systems & Reimbursement (3 cr.)

Students will be able to describe the organizations, services, and personnel that comprise the healthcare delivery system. Students will understand the history and development of payment systems and insurance models and their impact on health, access to care, and quality of healthcare. Reimbursement issues will include the revenue cycle, coding systems, payment systems, and compliance. **Prerequisites:** Eligible for ENG\*101 or ENG\*101E. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

### HIM\*157, Healthcare Informatics (3 cr.)

*Gen Ed Competency: Continuing Learning/Information Literacy*

Students will learn about the role of information technology in the delivery of healthcare services. The course will begin by addressing the hardware and infrastructure to support the use of information technologies. Students will learn about the lifecycle of information systems and the HIM professional's role in system selection, design, and support. The course will address methods for ensuring the privacy and security of health information along with issues of access and usability including health information exchange. The course will cover the variety of software applications and tools used in the healthcare environment. The course will include simulation lab practice using an electronic health record. **Prerequisites:** Eligible for ENG\*101 or ENG\*101E, CSC\*101 or equivalent with a "C" or better, or a "pass" on the Computer Proficiency Test administered in the MxCC Academic Success Center. (New course, Fall 2017) **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

### HIM\*201, Health Information Management Principles (3 cr.)

This course provides students with an introduction to the health information management profession. Students will explore the variety of healthcare delivery settings and the types of records they create. Students will understand the content requirements of the medical record and will learn to evaluate compliance with regulations and standards for medical record

documentation. The course will explain the significance of accuracy and integrity of healthcare data in the revenue cycle and in quality and performance improvement processes. This course introduces students to the operation of an HIM department including information systems, budgets, diversity, and the professional code of ethics for health information professionals. **Prerequisites:** Eligible for ENG\*101 or ENG\*101E. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

### HIM\*203, Pathophysiology (3 cr.)

*Gen Ed Competency: Scientific Knowledge & Understanding*

This course provides an introduction to the study of functional changes that accompany human diseases. The purpose of this course is to supply students with basic understanding which will prepare them for the healthcare setting. The most common conditions along with new and emerging diseases will be included. Components of pharmacology will also be included for each category of diseases. **Prerequisites:** BIO\*115 or BIO\*212 with a "C" or better.

### HIM\*205, Medical Coding 1 (3 cr.)

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course introduces students to nomenclatures and classification systems used in healthcare. The course provides in-depth coverage of the ICD-10CM and ICD-10-PCS coding systems. Students will begin with simple coding cases and advance to more complex coding and auditing. Healthcare reimbursement issues will be explored with emphasis on the need for documentation to support accurate code assignment and billing for healthcare services. Students will apply the Uniform Hospital Discharge Data Set (UHDDS) The ICD-10-CM will be compared to the DSM-5 codes for behavioral health. **Prerequisites:** BIO\*115 or BIO\*212, and MED\*125, all with a grade of "C" or better. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

### HIM\*206, Medical Coding 2 (3 cr.)

*Gen Ed Competency: Critical Analysis & Logical Thinking*

Nomenclatures and classification systems used in healthcare covered in this course include the CPT/HCPCS coding systems. Students will begin with simple coding cases and advance to more complex coding and auditing. Students will explore nomenclatures

and classification systems commonly used in electronic health records and reporting including SNOMED, LOINC, NDC, along with an introduction to ICD-11. **Prerequisites:** BIO\*115 or BIO\*212, and MED\*125, all with a grade of "C" or better. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

### HIM\*213, Pharmacology for Health Information Management (1 cr.)

This course emphasizes the principles of pharmacology, including the classifications of drugs, and the effects of selected medications on the human body. Emphasis is placed on understanding the actions of the drugs, such as absorption, distribution, metabolism, and excretion of drugs by the body, and matching drugs to common conditions and laboratory findings.

**Prerequisites:** Eligible for ENG\*101 or ENG\*101E.

### HIM\*215, Clinical Coding PPE I (3 cr.)

Through this course, students will develop an understanding of coding and classification systems in order to assign valid diagnostic and/or procedure codes. It will include the validation of coded clinical information and case mix/severity of illness data. Students will complete coding case studies utilizing a logic-based encoder and coding references. Medical records coded in this course include cases covering the following body systems and coding categories: integumentary system, musculoskeletal system, digestive system, and respiratory system. **Prerequisites:** HIM\*201, HIM\*203, HIM\*205, and HIM\*206, all with a "C" or better.

### HIM\*216, Clinical Coding PPE II (3 cr.)

Through this course, students will develop an understanding of coding and classification systems in order to assign valid diagnostic and/or procedure codes. It will include the validation of coded clinical information and case mix/severity of illness data. Students will complete coding case studies utilizing a logic-based encoder and coding references. Medical records coded in this course include cases covering the following body systems and coding categories: infectious and parasitic disease; endocrine diseases; nervous system and sense organs; neoplasm; genitourinary system; pregnancy, childbirth, and the puerperium; congenital abnormalities; signs and symptoms; and mental disorders. **Prerequisites:** HIM\*201, HIM\*203, HIM\*205, and HIM\*206, all with a "C" or better.



**HIM\*217, Clinical Coding PPE III (3 cr.)**

Through this course, students will develop an understanding of coding and classification systems in order to assign valid diagnostic and/or procedure codes. It will include the validation of coded clinical information and case mix/severity of illness data. Students will complete coding case studies utilizing a logic-based encoder and coding references. Medical records coded in this course include cases covering the following body systems and coding categories: circulatory system, injury and poisoning, and factors influencing health status. **Prerequisites:** HIM\*201, HIM\*203, HIM\*205, and HIM\*206, all with a "C" or better.

**HIM\*220, Supervision/Quality Management (3 cr.)**

This course covers topics of leadership, supervision, and quality management. Students will learn common quality improvement processes in healthcare organizations, and discuss topics related to accreditation, licensure, teamwork, change management, project management, data analysis and other quality measures. Students will also perform financial management tasks such as budgeting, accounting and variance analysis. Employee recruitment and employment law will be explored, along with creating an environment that supports a culture of diversity. **Prerequisites:** MAT\*168 with a "C" or better, HIM\*201 with a "C" or better, and HIM\*113 with a "C" or better. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

**HIM\*230, Healthcare Statistics and Data Analysis (3 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

Students will have hands-on practice calculating healthcare statistics and analyzing healthcare data to identify trends. Student will explore publicly available healthcare data. The course will include simulation lab practice using software to analyze data and create data visualizations. Students will learn methods for managing data quality and ensuring the accuracy and integrity of health data. Students will be introduced to the role of the HIM professional in implementing and improving information governance practices in healthcare organizations. **Prerequisites:** MAT\*168, HIM\*201, HIM\*113, HIM\*157, HIM\*205, and HIM\*206 with a "C" or better in all prerequisite courses. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

**HIM\*256, Legal and Ethical Issues of HIM (3 cr.)**

Students will learn about the legal and ethical issues affecting healthcare today, including legislative and regulatory processes and legal terminology. Special attention will be devoted to issues of electronic record systems from the legal and ethical perspective. Students will study health information/record laws and regulations (such as retention, patient rights/advocacy, advanced directives, privacy.) Confidentiality, privacy, and security policies, procedures and monitoring along with release of information policies and procedures, professional and practice-related ethical issues will also be studied. Students will investigate and recommend solutions to privacy issues and problems. **Prerequisites:** HIM\*201. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

**HIM\*290, Certification Exam Preparation (1 cr.)**

Students completing a degree in health information management usually sit for a professional certification exam in health information management and/or coding. This course will prepare students for certification exams by providing test-taking tips and study strategies. Students will review exam content including coding, privacy and security of health information, and other exam topics. Students will receive assistance in selecting and registering for certification exams and will complete practice tests. Students will have the opportunity to explore career goals and prepare a resume. **Prerequisites:** Permission of program coordinator. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

**HIM\*295, Health Information Management Internship (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

This course provides professional practice experience for HIM students. Students will participate in simulation lab activities covering advanced coding topics and the use of HIM software applications. Students will gain on-the-job experience through a 40-hour internship in a healthcare organization. **Prerequisites:** ENG\*102, CSA\*140, MAT\*168, HIM\*201, HIM\*113, HIM\*157, HIM\*205, and HIM\*206 with a "C" or better in all prerequisite courses. **Note:** Transfer credit for this course can only be accepted from CAHIIM-accredited institutions.

**HISTORY (HIS\*)****HIS\*101, Western Civilization I (3 cr.)**

*Gen Ed Competency: Historical Knowledge*  
A systematic study of the contributions of the ancient Middle East, Egypt, Greece, and Rome to Western Civilization. The above is followed by an examination of the first 1,200 years of Western History (Middle Ages, Renaissance, American Discovery, the Age of Absolutism) with an emphasis on religious, political, economic, intellectual, and social evolution. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HIS\*102, Western Civilization II (3 cr.)**

*Gen Ed Competency: Historical Knowledge*  
Students will explore significant economic, social, political, military, and intellectual trends in Western Society during the past three hundred years. Particular emphasis will be given to the ideas of political and economic freedom, the impact of the Industrial Revolution, changing intellectual climates, colonialism, the two World Wars, and the Cold War. May be taken without HIS\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HIS\*107, History of Puerto Rico (3 cr.)**

*Gen Ed Competency: Historical Knowledge*  
This course will explore the political, social, economic and constitutional development of Puerto Rico from the early 16th century to the near present. Four centuries of Spanish colonization and the island's dual role in the empire as a defensive outpost and producer of sugar, tobacco, and coffee forms the first part of the course. Next we examine how proximity to the United States in geographical, economic, and political terms has profoundly touched the lives of all Puerto Rican's and influenced the development of island society. Finally, we consider the history of Puerto Rican communities in the northeastern United States that are the result of successive migratory waves that started early in the 20th century. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HIS\*121, World Civilization I (3 cr.)***Gen Ed Competency: Historical Knowledge*

This course examines the development of global history to 1500. Coverage is organized into seven successive eras of world history, and focuses on the development of civilization in every region of the world and their interaction with other societies. The latter allows for cross-cultural comparisons and provides insight into the consequences of cultural connections brought about by trade, transportation, and communication. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HIS\*122, World Civilization II (3 cr.)***Gen Ed Competency: Historical Knowledge*

This course examines the development of global history since 1500. Coverage is organized into three successive eras of world history. The history of each region is examined as well as the interaction between different parts of the world. The latter focus allows for cross-cultural comparisons and provides insight into the consequences of cultural connections brought about by trade, transportation, and communication. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HIS\*201, United States History I (3 cr.)***Gen Ed Competency: Historical Knowledge*

Students will study the development of British North America from the establishment of the first colonies to the founding of the United States with an emphasis on the nature of immigration, slavery, and overall themes of colonialism. Likewise, students will explore United States development from the early days of the republic through the Civil War with a focus on regional development and Westward. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HIS\*202, United States History II (3 cr.)***Gen Ed Competency: Historical Knowledge*

A systematic study of the United States from Reconstruction to the present, with special attention given to industrialism's social, economic, and ideological impact, America's changing ethnic make-up, race conflict, and changes in the United States' international position through the two World Wars and the Cold War. May be taken without HIS\*201. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HIS\*244, Europe in the 20th Century (3 cr.)***Gen Ed Competency: Historical Knowledge*

Students will study Europe's changing economic, social, military, and diplomatic trends from the late 19th Century to the present. Special emphasis will be given to the causes of the First World War, the Second World War, and the Cold War.

**HONORS (HON)**

**THE FOLLOWING COURSES ARE AVAILABLE ONLY TO STUDENTS WHO HAVE BEEN ADMITTED TO THE HONORS PROGRAM IN FALL 2017 AND LATER.**

**HON 101, Honors Seminar (1 cr.)***Gen Ed Competency: Critical Analysis & Logical Thinking*

Honors Seminar introduces the student to diverse and enriching academic content. Course design emphasizes college transition skills and critical thinking skills to promote rigorous and interdisciplinary academic study. This multidisciplinary approach combines lecture, discussion, and class activity in order to introduce students to academia and its practices. Students will refine written and oral communication skills, enhance their ability to analyze and synthesize interdisciplinary material, and use a variety of research methods to understand and critically respond to larger social issues. This course may include service-learning activities, participation within extra-curricular events on and off campus, and an introduction to professional and academic policies, procedures, or opportunities. **Prerequisites:** Enrollment within the Honors Program and placement into ENG\*101. This course is required for all first semester Honor students.

**HON 102, Honors Seminar II (1 cr.)***Gen Ed Competency: Critical Analysis & Logical Thinking*

The Honors Seminar II builds on concepts introduced in Honors Seminar I and it is required before taking subsequent Honors Seminars, HON201 and HON202. In HON102, students being to explore a discipline, topic, or issue for a Capstone Project. Students will also learn the fundamentals of mentoring and collegiate collaboration as they complete a leadership project. This course many include service-learning activities and participation within extra-curricular events on and off campus. **Prerequisites:** Enrollment within the Honors Program and completion of HON 101, ENG\*101. This course is required for all Honors students.

**HON 201, Honors Seminar III (1 cr.)***Gen Ed Competency: Critical Analysis & Logical Thinking*

Honors Seminar III is the third course in the Honors Program seminar sequence. This course aims to build on skills acquired within HON\*101 and/or HON\*102. In this course, students are required to complete a research proposal and to plan all research required for the Honors Capstone Project (HON 202). HON 201 will further refine student written and oral communication skills, further enrich analytical skills, and further develop comprehension and use of research methods to understand and to critically respond to larger social issues. This course may include service learning activities and participation within extra-curricular events on and off campus. **Prerequisites:** Enrollment within the Honors Program and completion of HON102. This course is required for all Honors students prior to taking HON202.

**HON 202, Honors Capstone Project (1 cr.)***Gen Ed Competencies: Continuing Learning/ Information Literacy, Critical Analysis & Logical Thinking, Social Phenomena*

The Honors Capstone Project requires students to engage in academic research and produce results. Students will work with faculty advisors within the discipline of the project and students will complete all steps of the academic/scientific method from proposal, abstract, research, and presentation. In order to pass HON202, students will have to publicly present their research to the MxCC community. HON202 will enhance student written and oral communication skills within academic and professional settings and situations. HON202 will enrich student use of research methods to understand, to critically respond, and to pose an argument in response to a larger social issue or topic. This course may include service-learning activities and participation within extra-curricular events on and off campus. **Prerequisites:** Enrollment within the Honors Program and completion of (at least) the two semesters of HON102.

**HUMAN SERVICES (DFS\*, HSE\*)****DFS\*110, Orientation to Deafness (3 cr.)**

An overview of deafness that encompasses three major topics: the nature and experience of deafness; the education of deaf children and adults; and the deaf community. Subtopics are likely to include: language/communications; medical, psychological, social, and vocational.



**HSE\*101, Introduction to Human Services (3 cr.)***Gen Ed Competency: Social Phenomena*

An introduction to the scope and nature of the human services profession. Focus is on integrated service delivery and the student's responsibility to the community. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HSE\*116, Youth Advocacy and Community Organization (3 cr.)**

This course is intended to provide students with practical skills related to working with at risk children and youth either within residential or community settings. The course is an introduction to the identification, prevention, and solution of individual, family, and community problems, while managing and setting policies for youth servicing agencies. This course includes a 20-hour community service requirement. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**HSE\*167, Nature & Needs of Persons with Mental Retardation (3 cr.)**

This course is a view of the person who has been labeled mentally retarded. The particular learning deficits unique to retardation will be explored. The history of the care of persons with retardation in Connecticut will be reviewed. Current trends in mental retardation will be considered.

**HSE\*191, Problem Gambling, Treatment, and Prevention (3 cr.)**

This course will provide an introduction to the field of problem gambling, treatment, and prevention. Emphasis will be on the social, economic, and personal impact of problem gambling on individuals, families, and communities. Theory and practice regarding the prevention, identification and assessment of problem gambling will also be explored as well as methods of referral and intervention for persons experiencing gambling problems.

**HSE\*202, Introduction to Counseling/Interviewing (3 cr.)***Gen Ed Competency: Oral Communication in English*

A systematic study of the basic theories, methods, and techniques utilized in interviewing and counseling. Each student will learn through theory and application. The integration of new techniques into the individual's unique style is anticipated. *Prerequisites:* PSY\*111.

**HSE\*224, Social Problems of Youth (3 cr.)***Gen Ed Competencies: Historical Knowledge, Oral Communication in English*

This course is intended to explore targeted concerns and perspectives regarding problems among youth. Topics to be covered are substance abuse among youth, addiction and prevention, the influence of media on youth, conflict resolution, alternative to incarceration, youth sexuality, and multi-cultural issues. *Prerequisites:* Either ENG\*101E or ENG\*101.

**HSE\*288, Developmental Practicum (3 cr.)**

This course will provide theoretical knowledge and field work placement for students working with either children, adolescents, or adults of any age. This practicum serves as either an introductory field placement experience or to fulfill the practicum requirement for students enrolled in the Therapeutic Recreation Certificate program. *Prerequisites:* HSE\*101. Students enrolled in the Therapeutic Recreation Certificate program do not need HSE\*101 in order to enroll in this practicum.

**HSE\*289, Psychiatric Practicum (3 cr.)**

This course provides theoretical knowledge and field placement experience for students working with challenged populations or engaging in some type of community organization experience. Students in this practicum may work with children, youth, or adults who experience developmental, behavioral, or psychiatric disabilities. It is expected that students in this practicum have had former practicum or work experience which has contributed to skill development. This practicum also fulfills the practicum requirement for the Juvenile Justice and Substance Abuse Education certificate programs. *Prerequisites:* HSE\*101.

**ITALIAN (ITA\*)****ITA\*101, Elementary Italian I (3 cr.)**

Fundamentals of grammar with emphasis on the development of speaking, listening, and writing skills. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ITA\*102, Elementary Italian II (3 cr.)**

Continued development of speaking, listening, and writing skills as well as fundamentals of grammar. *Prerequisites:* ITA\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ITA\*201, Intermediate Italian I (3 cr.)**

Further study of grammar with continued emphasis on the development of conversational fluency and writing proficiency. Compositions. Introduction to literature. *Prerequisites:* ITA\*102. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**ITA\*202, Intermediate Italian II (3 cr.)**

Continuation of the study of grammar with further emphasis on the development of conversational fluency and writing proficiency. Compositions. Literature. *Prerequisites:* ITA\*201. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**MAGNETIC RESONANCE IMAGING (MRI\*)****CAT\*201/MRI\*201, Cross Sectional Anatomy I (1 credit)**

See page 140 for full course description.

**MRI\*202, MRI Pathology I (1 credit)**

This is the first semester of a 2-semester course sequence. The major pathologic conditions diagnosed by magnetic resonance imaging are presented. Emphasis is placed on the brain, vascular system of the neck and head, and the spine as detected by MR imaging. Differentiation between normal and pathologic tissues on MR scans, as well as the associated symptoms and origin of each type of pathology presented. Disease progression and treatment options are also discussed. *Prerequisites:* Admissions to the Magnetic Resonance Imaging (MRI) Program, and ARRT Registered Radiographer, or Nuclear Medicine (Certification in Nuclear Medicine Technology Certification Board (NMTCB), or Radiation Therapy, or Sonography (Registration through the American Registry for Diagnostic Medical Sonography) (ARDMS).

### **MRI\*203, MRI Procedures and Instrumentation I (2 Credits)**

This is the first semester of a 2-semester sequence. The course discusses past and potential future developments in MR Imaging and the most prominent researchers and pioneers in the field. The course will introduce the student to clinical aspects of MRI procedures and applying imaging parameters in the clinical setting. This course will also explain how images are acquired using MR and how MR signal is produced and detected. Proper screening and preparation of patients for contrast-enhanced MR imaging examinations will be outlined. Contrast agents, potential adverse effects of contrast agents, the mechanism of action and the effects of contrast media on images will be presented. Students will learn how to design image protocol and how to apply protocols in specific situations. Preliminary patient positioning criteria for various areas of the body will be discussed.

**Prerequisites:** Admissions to the Magnetic Resonance Imaging (MRI) Program, and ARRT Registered Radiographer, or Nuclear Medicine (Certification in Nuclear Medicine Technology Certification Board (NMTCB) or Radiation Therapy, or Sonography (Registration through the American Registry for Diagnostic Medical Sonography) (ARDMS).

### **MRI\*204, MRI Image Quality, Equipment and Safety Essentials I (2 Credits)**

This is the first semester of a 2-semester course sequence. Magnetic imaging parameters are introduced. The formation of the MR signal is discussed as well as the essential components of an MR imaging system. Magnetic safety precautions that affect both patient and operator are discussed. **Prerequisites:** Admissions to the Magnetic Resonance Imaging (MRI) Program, and ARRT Registered Radiographer, or Nuclear Medicine (Certification in Nuclear Medicine Technology Certification Board (NMTCB), or Radiation Therapy, or Sonography (Registration through the American Registry for Diagnostic Medical Sonography) (ARDMS).

### **CAT\*205/MRI\*205, Cross Sectional Anatomy II (1 credit)**

See page 141 for full course description.

### **MRI\*206, Clinical Experience I (4 Credits)**

This is the first semester of a 2-semester course sequence. This course introduces the student to the clinical setting and the practical skills necessary to operate magnetic resonance imaging systems. Clinical competency evaluation (s) will be completed during this course which are

required to sit for the national registry exam.

**Prerequisites:** Admissions to the Magnetic Resonance Imaging (MRI) Program, and ARRT Registered Radiographer, or Nuclear Medicine (Certification in Nuclear Medicine Technology Certification Board (NMTCB), or Radiation Therapy, or Sonography (Registration through the American Registry for Diagnostic Medical Sonography) (ARDMS).

### **MRI\*207, MRI Pathology II (1 Credit)**

This is the second semester of a 2-semester course sequence. The major pathologic conditions diagnosed by magnetic resonance imaging are presented. Emphasis is placed on the abdomen, pelvis, and extremities as detected on MR imaging. Differentiation between normal and pathologic tissues on MR scans, as well as the associated symptoms and origin of each type of pathology presented. Disease progression and treatment options are also discussed.

**Prerequisites:** CAT\*201/MRI\*201, MRI\*202, MRI\*203, MRI\*204 and MRI\*206 with a grade C or better.

### **MRI\*208, MRI Procedures and Instrumentation II (3 Credits)**

This is the second semester of a 2-semester sequence. This course identifies common anatomic structures, pathology of the central nervous system and positioning criteria for various area of the body. This course describes the available coils for MR imaging and their specific applications. How to apply MR imaging parameters in the clinical setting and how to differentiate between different types of pulse sequences will be discussed. The parameters related to tissue characteristics that affect image quality such as T1 and T2 relaxation and how to apply pulse sequence principles to MR imaging. Advanced patient positioning criteria for various areas of the body will be discussed.

**Prerequisites:** CAT\*201/MRI\*201, MRI\*202, MRI\*203, and MRI\*204 with a grade C or better.

### **MRI\*209, MRI Image Quality, Equipment and Safety Essentials II (2 Credits)**

This is the second semester of a 2-semester sequence. This course identifies common anatomic structures, pathology of the central nervous system and positioning criteria for various area of the body. This course describes the available coils for MR imaging and their specific applications. How to apply MR imaging parameters in the clinical setting and how to differentiate between different types of pulse sequences will be discussed. The parameters related to tissue characteristics that affect image quality such

as T1 and T2 relaxation and how to apply pulse sequence principles to MR imaging. Advanced patient positioning criteria for various areas of the body will be discussed. **Prerequisites:** CAT\*201/MRI\*201, MRI\*202, MRI\*203, and MRI\*204 with a grade C or better.

### **MRI\*210, Clinical Experience II (4 Credits)**

This is the second semester of a 2-semester sequence. This course introduces the student to the clinical setting and the practical skills necessary to operate magnetic resonance imaging systems. Clinical competency evaluation (s) will be completed during this course which are required to sit for the national registry exam. **Prerequisites:** CAT\*201/MRI\*201, MRI\*202, MRI\*203, and MRI\*204 with a grade C or better.

## **MAMMOGRAPHY (MAM\*)**

THESE COURSES ARE AVAILABLE ONLY TO STUDENTS WHO HAVE BEEN ADMITTED TO THE MAMMOGRAPHY PROGRAM.

### **MAM\*201, Principles of Mammography, (4 cr.)**

This course will review basic patient care and radiation protection. This course will introduce students with radiography backgrounds to the basic principles behind breast imaging (patient care, instrumentation, anatomy and physiology, technique and evaluation). This course will teach students to operate and utilize digital and conventional mammography equipment to produce images of patients' breast tissue. This course will prepare graduates to possess the knowledge, skill, and affect to meet the demands of an entry level-position as a mammographer. Theory presented will prepare and qualify students to participate in the AART Mammography certification examination. **Prerequisites:** Admission to the Mammography Program; Must be a registered Radiographer (ARRT)

### **MAM\*202, Mammography Clinical Experience (4 cr.)**

*Gen Ed Competency: Scientific Reasoning*

This course will introduce students with radiography backgrounds to the basic principles behind breast imaging (patient care, instrumentation, anatomy and physiology, radiation protection, technique and evaluation). Upon successful completion of the course, the student will be competent in completing the entire mammographic procedure from request through quality control. A minimum of 240 contact hours of supervised instruction is required.

Students must perform 75 mammographic examinations (screening and/or diagnostic) in addition to the 25 examinations that are required by the initial Mammography Quality Standards Act (MQSA) mammography requirements. All examinations must be performed on patients (not phantom or simulations). Clinical experience and completion of required examinations will prepare and qualify students to sit for the ARRT Mammography certification examination. **Prerequisites:** Admission to the Mammography Program; Must be a registered Radiographer (ARRT)

## **MANUFACTURING (CAD\*, MFG, QUA)**

### **CAD\*110, Introduction to CAD (3 cr.)**

*Gen Ed Competency: Continuing Learning/ Information Literacy*

An introduction to the techniques of generating graphic images with computers using AutoCAD. Topics include: overview of CAD terminology, computer terminology, hardware descriptions and requirements, file manipulation and management, two dimensional geometric construction, symbol library creation, dimensioning, scaling, sectioning, plotting, detail and assembly drawings including tolerance studies.

### **CAD\*171, Mechanical 3-D CAD (Autodesk Inventor) (3 cr.)**

The primary goal of this course is to introduce students to engineering graphics through the use of computers and Autodesk Inventor. Students learn through a "hands-on" exercise intensive approach to concepts of engineering graphics. Students create rough 2-D sketches, apply/modify constraints and dimensions to the sketch, and extrude, revolve, or swept the design to create a 3-D model. The emphasis of the lessons are placed on graphical analysis, orthographic projection, auxiliary views, dimensioning methods, sectioning, creating assembly and working drawings with adherence to recognized drafting standards.

### **CAD\*220, Parametric Design (3 cr.)**

Introduction to computer-based design using SolidWorks® parametric 3D CAD software. The course focuses on Parametric Modeling and topics include: Design Intent and Process, Sketching Techniques, Model Development Techniques, Process-Specific Modeling, Design Changes, Editing Models, Patterning and Assembly Techniques. Students will participate in mostly individual and some group design projects as appropriate. **Prerequisites:** CAD\*110 .

### **MFG\*051, Manufacturing Math I (3 developmental credits; does not count toward graduation)**

First course in manufacturing mathematics. A study of arithmetic and algebraic operations applied to manufacturing circumstances. Fractions, decimals, tolerances, percentages, signed numbers, powers and roots, the metric system, as well as ratios and proportions are studied in depth. This course is not open to students who are eligible for MAT\*137 or higher.

### **MFG\*105, Manufacturing Math II (3 cr.)**

A study of arithmetic and trigonometric operations applied to manufacturing circumstances. The following geometric entities are studied in detail: the circle, regular and irregular polygons, the right triangle and oblique triangles. The application of angular arithmetic including the study of angle decimal conversion, the Pythagorean theorem, sine, cosine, and tangent functions, and the Law of Sines and Law of Cosines. **Prerequisites:** MFG\*051 with "C-" or better OR eligible for MAT\*137E or higher.

### **MFG\*109, Introduction to MasterCAM (3 cr.)**

This course introduces the student to computer-based CAD/CAM (Computer-Aided Drafting/ Computer-Aided Manufacturing) using MasterCAM software, an industry standard. CAD/CAM uses CAD drawing tools to describe geometries of an object. The CAM portion of the program defines the toolpath that directs the motion of a machine tool to create a product that is the exact shape that was drawn. This introductory course familiarizes the student to MasterCAM using mill, lathe, and solids tutorials. **Prerequisites:** Eligible for either ENG\*063/ENG\*101ALP or higher or ENG\*096 taken concurrently.

### **MFG\*120, Metrology (3 cr.)**

This course provides students with the basics in measurement for manufacturing, incorporating an introduction to the construction and usage of inspection tools, as well as a comprehensive set of hands-on exercises. These tools will be utilized to discover the dimensional characteristics of a variety of sample parts.

### **MFG\*123, Measurement for Manufacturing (2 cr.)**

This course provides students with the basics in measurement for manufacturing, incorporating an introduction to the construction and usage of inspection tools, as well as a comprehensive set of hands-on exercises. In addition to teaching students how to use measuring tools, this course helps prepare students for NIMS (National Institute for Metalworking Skills) credentialing exams in Benchwork and Measurement, Materials, and Safety.

### **MFG\*124, Blueprint Reading I (2 cr.)**

First course in blueprint reading. The study of orthographic projection. Topics include lines and their uses, auxiliary views, sectional views, basic and special dimensioning, dimensioning practices for holes, chamfers, angle, tapers, keyways diameters and radii. Also, geometric tolerancing and dimensioning is covered. **Prerequisites:** Eligible for either ENG\*063/ENG\*101ALP or higher or ENG\*096 taken concurrently.

### **MFG\*125, Blueprint Reading II (3 cr.)**

Second course in blueprint reading. A further study of simple and complex drawings for machining or assembly purposes. Topics include the application and meaning of geometric characteristics and controls, the metric system, weldment, forging and casting drawings and procedures, communication with freehand sketches, blueprint terms and abbreviations. **Prerequisites:** Eligible for either ENG\*063/ENG\*101ALP or higher or ENG\*096 taken concurrently.

**MFG\*150 Intro. to Machine Technology (4 credits, 6 contact hours)**

**\$\$ Laboratory Course Fee**

This course replaces MFG\*102 Manufacturing Processes and MFG\*103 Manufacturing Processes Lab. Introduction to Machine Technology introduces the student to the fundamentals of Metal Machining Technology. The student is introduced to the basic metal machining equipment including Lathe, Miller, Drill Press, Saw, and Grinding Wheels. Students will perform basic lathe operations, which will consist of facing, center-drilling, chuck turning, turning between centers, boring, grooving, tapers, knurling, and single point threading. Students will identify the major parts of the vertical & horizontal mill, align a vise, use an indicator, edge finder, and boring head, determine speeds and feeds, perform simple indexing, mill flat, square surfaces and slots, drill, bore, and tap holes.

**MFG\*156, Manufacturing Machinery CNC I (3 Credits/4 contact hours)**

First course in CNC machinery and programming. Topics include: Cartesian coordinates, safe use of CNC equipment, set up and operation of 2-axis CNC lathe and 3-axis CNC machining center, CNC programming and execution of these programs. *Prerequisites:* Eligible for either ENG\*063/ENG\*101ALP or higher or ENG\*096 taken concurrently.

**MFG\*166 Benchwork (1 cr.)**

A basic course in the fundamentals, principles, practices, and tools used in semi-precision and precision layout and in the various tools, methods, and procedures for common machine shop benchwork. Topics include measurement systems, layout principles, hand tools, and power tools.

**MFG\*168 CNC I (3 credits)**

First course in CNC machinery and programming. Topics include: Cartesian coordinates, the safe use of CNC equipment, set up and operate a 2-axis CNC lathe and a 3-axis CNC machining center, CNC programming, and execution of these programs. *Prerequisite:* Placement in ENG\*063/101E or higher or enrollment in ENG\*096.

**MFG\*171, Introduction to Lean Manufacturing (3 cr.)**

The purpose of this course is to provide the student with the fundamental knowledge of current continuous process improvement methodologies in use today within competitive manufacturing environments. This introductory course will expose the student to the basic concepts of Lean Manufacturing theory and the various tools and techniques involved with a lean implementation. This course will be presented following the lean-six sigma process methodology of DMAIC (Define, Measure, Analyze, Improve, Control) to ensure that at the completion of the course, the student will be competent to participate effectively as a team member in lean implementation projects. *Prerequisites:* Eligible for either ENG\*063/ENG\*101ALP or higher or ENG\*096 taken concurrently.

**MFG\*202, Precision Machining (3 cr.)**

This course explains common methods of machining used to shape parts to specifications with the emphasis on traditional tool room machinery (lathes, milling machines, drilling machines, and grinders). Related topics also include shop safety, hand tools, measurement, layout work, and cutting fluids. Students will apply classroom lessons to the fabrication of parts in the lab course. *Co-requisite:* MFG\*203.

**MFG\*203, Precision Machining Lab (1 cr.)**

This course supplements the Precision Machining course by providing the lab time necessary to reinforce classroom lessons. Students use lab machinery and equipment to shape parts to specifications using traditional tool room machinery (lathes, milling machines, drilling machines, and grinders). Related topics also include shop safety, hand tools, measurement, layout work, and cutting fluids. Students will be required to do lab work beyond the lab time scheduled for this course. *Prerequisites:* Completion of MFG\*103 and MFG\*102 co-requisite with a grade of C- or better.

**MFG\*239, Geometric Dimensioning & Tolerancing (3 cr.)**

An intermediate course in the interpretation of engineering drawing beginning with the basics of dimensional tolerances and tolerance systems. Topics include: the mathematics of interpreting and specifying tolerances on dimensions, the system of geometric tolerancing, the basic nomenclature and standard symbols conforming to ANSI Y14.5M. *Prerequisites:* EGR\*112 or MFG\*124. (New course, Fall 2017)

**MFG\*256, Manufacturing Machinery CNC II (3 credits/6 contact hours)**

This course has been replaced by MFG\*258. Students cannot receive academic credit for BOTH MFG\*256 and MFG\*258. This second course in Computer Numerical Controlled programming is a continuation of CNC I and provides a further study of CNC programming for the Lathe and Vertical Machining Center. Topics include setup and tooling, programming simple parts, canned drilling cycles, circular interpolation, special milling cycles, cutter compensation, looping and macros, and special features. Students will be introduced to MasterCAM software and use it to create part programs. *Prerequisites:* MFG156 with a grade of "C-" or better. (Course replaced, January 2016)

**MFG\*258, CNC Operations (3 credits/4 contact hours)**

This is the second course in Computer Numerical Controlled machining. It is a continuation of MFG\*156, Manufacturing Machinery CNC I and provides a further study of CNC programming and machine operation for the Lathe and Vertical Machining Center. *Prerequisites:* MFG\*156 with a grade of "C-" or better. (New Course, Spring 2016) This course replaces MFG\*256 Manufacturing Machinery II. Students cannot receive academic credit for taking BOTH MFG\*256 and MFG\*258.

**QUA\*114, Principles of Quality Control (3 cr.)**

Overview of the tools and techniques required in contemporary quality systems. First course in statistical quality control. Topics covered include determination of process capabilities, estimation of process standard deviation from sample data, use of control charts, calculation of probability of simple events. Student will develop SPC and TQM Manufacturing Plans.

---

**MATHEMATICS (MAT\*)**

**EDUC 1002, Fast-Track Math Workshop (0 credits, 30 classroom hours)**

This noncredit workshop is designed to help students refresh their skills in arithmetic and elementary algebra concepts. The workshop is targeted to benefit students placing at the intensive levels. At the end of the workshop, students may retake the placement test to see if they can progress to a course that is College Level or College Level with Embedded Support.



**MAT\*095-I, Pre-Algebra & Elementary Algebra Foundations (6 Credits)**

*This Intensive-Level developmental course does not meet graduation requirements. Prior to Fall 2017, this course was numbered as MAT\*085.*

MAT\*095-I (MAT\*085) is an introductory course that will emphasize the understanding of basic concepts and skills of arithmetic (whole numbers, signed numbers, decimals, fractions, ratios and proportions, percent and estimation), as well as introductory topics in algebra. This course includes a study of the basic properties and theorems of rational numbers; expressions and equations with polynomials, rational and radical expressions, and integer exponents; linear equations in one and two variables; systems of linear equations in two variables; functions; and applications in geometry and algebra. This course will support students with skill levels below 9th grade to achieve the learning outcomes of Beginning Algebra in a single semester. Credit does not count toward meeting degree requirements.

**MAT\*095, Elementary Algebra Foundations (3 cr.)**

This Intensive-Level developmental course does not meet graduation requirements. MAT\*095 is an introductory course in the basics of algebra. This course includes a study of the basic properties and theorems of rational numbers; expressions and equations with polynomials, rational and radical expressions, and integer exponents; linear equations in one and two variables; systems of linear equations in two variables; functions; and applications in geometry and algebra. Credit does not count toward meeting degree requirements. **Prerequisites:** MAT\*075 with "C" or better OR MAT\*085/MAT\*095-I with a "D+ or C-" OR Math placement.

**MAT\*137E, Intermediate Algebra with Embedded Review (3 credits/4 contact hours) \$\$ Supplemental Course Fee**

This course cannot be used to satisfy the Quantitative Reasoning competency for transfer programs or pathways. This version of MAT\*137 meets four hours a week to incorporate review topics from Elementary Algebra that are essential for success in Intermediate Algebra and to provide more time to meet the outcomes of MAT\*137. Polynomial functions and expressions with special attention to linear, quadratic, exponential, rational, and radical functions are studied. There is an emphasis on modeling and applications for all topics. A graphing calculator is required for this course.

**Prerequisites:** Eligible for either ENG\*101E or ENG\*101, together with Math placement into MAT\*137E OR Eligible for either ENG\*101E or ENG\*101, and either MAT\*085/MAT\*095-I or MAT\*095 with a grade of "C" or better

**MAT\*104, Quantitative Reasoning (3 cr.)**

**Gen Ed Competency: Critical Analysis & Logical Thinking**

This course cannot be used to satisfy the Quantitative Reasoning competency for transfer programs or pathways. A survey course to develop the abilities to interpret and reason with information that involves mathematical ideas or numbers. This course will prepare students for the mathematics they will encounter in other college courses and in their career, as well as help develop critical thinking and problem solving skills needed in all areas of life. Topics include: principles of reasoning, problem solving techniques, basic statistics, every day mathematical models, and the mathematics involved in personal finance, the arts, careers, and society in general. NOTE: This course does NOT cover the algebra skills necessary for intermediate algebra through calculus and statistics. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101 and either MAT\*085/MAT\*095-I or MAT\*095 with C or better OR Eligible either for ENG\*101E or ENG\*101 and Math placement.

**MAT\*137, Intermediate Algebra (3 cr.)**

This course cannot be used to satisfy the Quantitative Reasoning competency for transfer programs or pathways. This course is a further study of algebra and mathematical modeling of functions and relations represented by tables, graphs, words, and symbols. Polynomial functions and expressions with special attention to linear, quadratic, exponential, rational, and radical functions are studied. There is an emphasis on modeling and applications for all topics. A graphing calculator is required for this course. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101, together with Math placement into MAT\*137 OR Eligible for either ENG\*101E or ENG\*101, and either MAT\*085/MAT\*095-I or MAT\*095 with a grade of "C+" or better.

**MAT\*137E, Intermediate Algebra with Embedded Review (3 credits/4 contact hours) \$\$ Supplemental Course Fee**

This course cannot be used to satisfy the Quantitative Reasoning competency for transfer programs or pathways. This version of MAT\*137 meets four hours a week to incorporate review topics from Elementary Algebra that are essential for success in Intermediate Algebra and to provide more time to meet the outcomes of MAT\*137. Polynomial functions and expressions with special attention to linear, quadratic, exponential, rational, and radical functions are studied. There is an emphasis on modeling and applications for all topics. A graphing calculator is required for this course. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101, together with Math placement into MAT\*137E OR Eligible for either ENG\*101E or ENG\*101, and either MAT\*085/MAT\*095-I or MAT\*095 with a grade of "C" or better

**MAT\*141, Number Systems (3 cr.)**

**Ged Ed Competencies: Critical Analysis & Logical Thinking, Quantitative Reasoning** This course helps students with an intermediate algebra background to get acquainted with some fundamental ideas in mathematics such as set operations, logic, counting methods, numeration systems, and modular systems. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101 and either MAT\*137E or MAT\*137 with "C" or better OR eligible for either ENG\*101E or ENG\*101 and Math placement.

**MAT\*146, Math for the Liberal Arts (3 cr.)**

**Ged Ed Competencies: Critical Analysis & Logical Thinking, Quantitative Reasoning** This is a survey course designed to acquaint the student with mathematical ideas not normally encountered at the pre-college level. The course conveys something about the nature of mathematics- its methods, uses, and roles in society- through an elementary introduction to topics such as: Functions, Art in Mathematics, Logic, Number Theory, Computer Science, Statistics, Probability Theory, Graph Theory. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101 and either MAT\*137E or MAT\*137 with "C" or better OR eligible for either ENG\*101E or ENG\*101 and Math placement.

**MAT\*158, Functions, Graphs and Matrices (3 credits)**

*Gen Ed Competency: Quantitative Reasoning*

A course in selected topics from contemporary mathematics with applications for students in business, economics, and social science.

Topics include: the concepts of function and rate of change, a review of algebraic and graphical aspects of polynomial functions, a study of exponential and logarithmic functions, mathematical modeling, and systems of linear equations in two or more variables with an emphasis on forming, solving and interpreting of matrices. A graphing calculator is required and used throughout. This course is not recommended for mathematics, physics, chemistry, or engineering majors.

**Prerequisites:** MAT\*137 with a grade of "C" (or higher) and eligible for ENG\*101 OR math placement and eligible for ENG\*101

**MAT\*167, Principles of Statistics (3 cr.)**

*Gen Ed Competencies: Quantitative*

*Reasoning, Scientific Reasoning*

*This course replaces MAT\*168, "Elementary Statistics & Probability" (4 cr.). Students may not get credit for both MAT\*167 and MAT\*168.*

Graphs and charts, measures of central tendency and variation. Elementary probability theory, random variables, probability distributions, with emphasis on the binomial and normal. Sampling distributions, hypothesis testing, confidence intervals, correlation and linear regression. Use of technology included. **Prerequisites:** Eligible for ENG\*101 or ENG\*101E and MAT\*137 or MAT\*137 E (or higher) with a grade of "C" or better OR eligible for ENG\*101 or ENG\*101 E and math placement.

**MAT\*173, College Algebra with Technology (4 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

This course continues the algebra sequence. It is primarily intended for students who plan to continue on to Precalculus. Topics include operations with complex numbers; functions; numeric, algebraic, and graphic techniques as applied to the following functions: polynomial, rational, radical, piecewise, and absolute value; modeling and applications using the above functions; exponential expressions and equations; logarithmic expressions and equations; Optional: conic sections. A graphing calculator is required for this course. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101 and either MAT\*137E or MAT\*137 with a grade of "C" or better OR eligible for either ENG\*101E or ENG\*101 and Math placement.

**MAT\*186, Precalculus (4 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

Precalculus provides the mathematical preparation for the study of calculus. Topics include comparing and contrasting linear, quadratic, polynomial, rational, radical, exponential, and logarithmic function using numeric, algebraic and graphic techniques. Trigonometric functions will be studied extensively also using numeric, algebraic, and graphic techniques as well as right triangle trigonometry, identities, and trigonometric equations; sequences and series; and polar coordinates. There will be an emphasis on modeling and applications for all topics. A graphing calculator is required for this course. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101 and MAT\*173 with a "C" or better Or Eligible for ENG\*101E or ENG\*101 and math placement.

**MAT\*210, Discrete Mathematics (3 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

A course designed to prepare math, computer science and engineering majors for a background in abstraction, notation and critical thinking for the mathematics most directly related to computer science. Topics include: logic, relations, functions, basic set theory, proof techniques, mathematical induction, graph theory, combinatorics, discrete probability, recursion, recurrence relations, elementary number theory and graph theory. **Prerequisites:** ENG\*(101 or 101E) and MAT\*186 (or higher) with a grade of "C" or better OR ENG\*(101 or 101E) and math placement.

**MAT\*254, Calculus I (4 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

A course in differential calculus. Topics include limits, continuity, derivatives, anti-derivatives, and applications. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101 and MAT\*186 with a grade of "C" or better OR eligible for either ENG\*101E or ENG\*101 and Math placement.

**MAT\*256, Calculus II (4 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

The definite integral applied to algebraic and transcendental functions, techniques of integration, polar coordinates and applications, infinite series, and vectors.

**Prerequisites:** Eligible for ENG\*101 or ENG\*101E and MAT\*254 with a grade of "C" or better.

**MAT\*268, Calculus III: Multivariable (4 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

Two- and three-dimensional vector algebra, calculus of functions of several variables, vector differential calculus, line and surface integrals. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101 and MAT\*256 with "C" or better.

**MAT\*272, Linear Algebra (3 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

A beginning course in Linear Algebra, intended for students in mathematics, science and engineering. Topics include: Systems of linear equations, matrices, determinants, vectors and vector spaces, linear transformations, eigenvalues and eigenvectors. Applications will be considered, with emphasis on numerical methods. Computers and/or graphing calculators will be integrated into the course, as deemed appropriate. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101 and MAT\*256 with a grade of "C" or better.

**MAT\*285, Differential Equations (3 cr.)**

*Gen Ed Competency: Quantitative Reasoning*

An introductory course in differential equations, intended for students in mathematics, science, and engineering. Topics include: Solution methods for differential equations including selected first order equations, nth-order equations, and systems of linear equations using matrix techniques, Laplace transforms, and numerical methods. Series techniques for selected linear differential equations including Bessel's equation will be considered. Computer software and/or graphing calculators will be integrated as appropriate throughout the course. **Prerequisites:** Eligible for ENG\*101E or ENG\*101 and MAT\*256 with "C" or better.



**MAT\*298 Mathematics Education in Practice: Independent Study (1 credit)**

This one-credit course is intended to help those thinking of pursuing a degree in education or simply any individuals who wish to use their own math content knowledge to assist others. The course provides highly qualified students the opportunity to work as Classroom Assistants where they will develop the ability to discuss, explain, and model mathematical concepts to students in math classes. Students will work as in-class tutors and provide direct classroom assistance under the guidance and at the discretion of the professor. The student will work with a diverse population, demonstrate and apply his/her previously learned knowledge in a new capacity, and benefit from community engaged learning. The student will be asked to work a minimum 3 hours. The course may be taken up to three times for a maximum of 3 credit hours which may be taken in a single semester or over a period of three. At the end of the semester, the student will earn a grade of Pass ("P") or Fail ("F"). Students must be nominated by Math faculty in order to be eligible for the class.

**Prerequisite:** MAT\*173 with a grade of B or better, recommendation from Mathematics instructor AND permission of the MAT\*298 coordinator.

## MUSIC (MUS\*)

---

**MUS\*101, Music History and Appreciation I (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions, Historical Knowledge*

Understanding and appreciation of music literature. Classic, Romantic, and Modern styles studied through the works of composers of those periods.

**MUS\*104, World Music (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions, Global Knowledge, Historical Knowledge*

A survey course designed for non-musicians and musicians alike. The course will explore aspects of musical form, melody, rhythm, timbre, texture and instrumentation as rendered meaningful by the global music community. Content may include the music of Asia, Africa, India, and the Americas (including rock, jazz, blues and Native American music). Music in relation to art, ritual, theater, dance, and lifestyles will be considered, as well as aspects of musical instruments, including construction and playing techniques. Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.

**MUS\*111, Fundamentals of Music I (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions*

Development of basic skills in note reading, rhythm, meter, pitch symbols, scales, key signatures, interval, triads and ear training.

**MUS\*117, Electronic Music (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Designed for the non-musician, this course focuses on the composition, creation, performing, and recording of music using modern production techniques. Students will learn the compositional elements of music including rhythm, music and chord theory, and song structure and then perform and record their compositions using MIDI keyboards and digital audio workstations.

**MUS\*137, History and Appreciation of Jazz (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions, Historical Knowledge*

A music appreciation course that uncovers the development of Jazz, from ragtime to contemporary practice.

**MUS\*138, Rock and Roll History and Appreciation (3 cr.)**

*Gen Ed Competency: Aesthetic Dimensions, Historical Knowledge*

A survey of the evolution of rock music and the origins, characteristics, stylistic development, and cultural/social perspectives.

**MUS\*152, Drumming and Percussion Ensemble (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Through ensemble playing, students will learn a variety of traditional rhythms such as African, Latin, Indonesian (gamelan), Middle Eastern, etc. Various percussion instruments and playing techniques will be studied, including improvisation. Students will also learn how to use found objects as instruments. The course includes some study of the cultures associated with various instruments. Students should obtain a drum for use in the ensemble. Prior to the Fall 2016 semester, this course was offered for 2 credits. Students who took this course prior to the Fall 2016 semester cannot retroactively receive 3 credits for this course. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**MUS\*219, Electronic Music Composition / Audio Technology I (3 cr.)**

A continuation of the principles of electronic music composition and audio production: This course emphasizes the techniques and methodologies used in studio and live recording, mixing, and processing of music. Students will be expected to complete projects both individually and collaboratively resulting in the recording, editing, and mastering of music compositions. Topics will include multi-track recording, studio acoustics, microphone placement techniques, sound design, digital mixing consoles, signal processors, and studio session procedures. **Prerequisites:** COM\*131 and MUS\*117.

**MUS\*237, Principles of Sound Recording (3 cr.)**

This course is an advanced study of the techniques and methodologies used in studio and live recording of sound and music. Students will be expected to work both individually and collaboratively in the recording and mastering of live or studio music recording projects. Topics will include advanced knowledge of multi-track recording, studio acoustics, sound design, digital mixing consoles, microphone placement techniques, signal processors, monitoring, talkback systems, and studio session procedures. **Prerequisites:** MUS\*219.

**MUS\*238, Audio Mixing and Processing (3 cr.)**

*Gen Ed Competency: Creativity*

This is advanced-level course in audio and music mixing and signal processing. Students will be expected to take pre-recorded multi-track audio and music production files and edit, mix, process, and master them at a professional level. Topics will include advanced-level sound design, multi-track digital mixing and signal processing, including audio compression, equalization, filtering, reverb, echo, delay, flanging, modulation, pitch shifting, chorus, and other digital effects. **Prerequisites:** MUS\*219 (may be taken concurrently). (New course, Fall 2017; Updated April 2018)

## OPHTHALMIC DESIGN & DISPENSING (ODD\*)

### **BIO\*118, Anatomy and Physiology of the Eye (4 credits/6 contact hours)**

Open only to students enrolled in the Ophthalmic Design & Dispensing program. Designed to introduce the student to the basic anatomy and physiology of the eye, this course will include study of the eye and its associated structures. Students will conduct a detailed study of the eyelids and lashes, the orbit, extra ocular muscles, the crystalline lens, the retina, lacrimal apparatus, uveal tract, and the cornea. Included in the course is certification in Adult C.P.R., a segment on A.I.D.S. awareness, and a study of medical abbreviations and commonly used medical prefixes and suffixes. The laboratory component of the course includes dissection of cow's eye, as well as numerous slide and video presentations of ocular anatomy, physiology and surgery.

### **ODD\*101, Introduction to Ophthalmic Dispensing (4 credits/6 contact hours)**

Designed to introduce the student to the field of Ophthalmic Dispensing, this course will provide a general overview of optical theory and is intended to provide the student with a basis for more advanced study. The course will include segments of basic lens theory, normal and abnormal vision, the history of lenses and eyeglasses, an introduction to prism, and a determination of lens power at any point of a lens. The laboratory component will include introduction to the lensometer, marking and blocking devices, mechanical edging equipment and hand edgers, as well as an overview of the fabrication process. Lecture: 3 hours per week. Laboratory: 3 hours per week.

### **ODD\*102, Ophthalmic Dispensing I (4 credits/6 contact hours)**

This course will deal with the relationship between spectacles and the patient's visual needs. Topics shall include frame types and materials and the proper fitting and adjusting of spectacles, determination of lens thickness and weight, and vertical prism imbalance at the reading level. The laboratory segment shall include work in neutralization, fabrication of multifocal spectacles, pattern making, tinting, and lab equipment operation and maintenance. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* ODD\*101 with a grade of "C" or better.

### **ODD\*103, Ophthalmic Dispensing II (3 cr.)**

A continuation of Ophthalmic Dispensing I, discussion will include comprehensive spectacle verification, A.N.S.I. standards, lenses and frames for high powered prescriptions, managing presbyopia, occupational and lifestyle analysis and lens application, specialized absorptive lenses and sports and safety eyewear. The course will also include a review for the A.B.O. exam. *Prerequisites:* ODD\*102 with a grade of "C" or better. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **ODD\*104, Ophthalmic Dispensing III (3 cr.)**

A continuation of Ophthalmic Dispensing II, to include segments on Low Vision, prescription analysis, critical thinking and problem solving skills, marketing fashion eyewear, dispensing progressive addition lenses, record keeping, professional ethics and liability. Discussion of and preparation for the State Practical Exam will be included. *Prerequisites:* ODD\*103 with a grade of "C" or better.

### **ODD\*109, Optical Business Management (3 cr.)**

This course is designed to prepare the Ophthalmic Design and Dispensing student for the challenges of managing or operating an Optical business. Topics will include business organization, financial management, purchase, sale or merger of a business, marketing, advertising, accounting procedures, second party billing, inventory control, management skills, and patient/client relations. *Prerequisites:* ODD\*102 with a grade of "C" or better.

### **ODD\*110, Ophthalmic Materials I (4 credits/6 contact hours)**

*Gen Ed Competency: Oral Communication in English*

This course is designed to introduce the most commonly used ophthalmic devices and their use. It will explore single vision, bifocal, trifocal and progressive lenses commonly used in ophthalmic practice. Special emphasis will be placed on the physical properties of lens materials including index of refraction, absorptive ability, lens coatings and special applications of lens materials. It will include the discussion of the lens surfacing process and the surfacing laboratory. Frame materials, design, selection, and dispensing will be discussed. Lecture: 3 hours per week. Laboratory: 3 hours per week. *Prerequisites:* ODD\*101 with a grade of "C" or better.

### **ODD\*111, Ophthalmic Materials II (4 credits/6 contact hours)**

A continuation of Ophthalmic Materials I with special emphasis on unique optical devices and their function. This course will increase hands on experience in optical finishing skills, including edging, hand edging, drilling, grooving and inserting lenses. Basic frame adjustment and bench alignment shall also be included. Lecture: 3 hours per week. Laboratory: 3 hours per week. Included in this course will be a mandatory optical clinic rotation. *Prerequisites:* ODD\*110 with a grade of "C" or better.

### **ODD\*112, Ophthalmic Materials III (4 credits/6 contact hours)**

A continuation of Ophthalmic Materials II, to include rimless, semi-rimless, specialty eyewear and more advanced spectacle fabrication. It will include the use of more advanced spectacle fabrication machinery and instruments. Fabrication of trifocals, and progressive addition lenses will be included. Additional didactic and practical application of frame adjusting techniques will be presented. Lecture: 3 hours per week. Laboratory: 3 hours per week. Included in this course will be a mandatory Optical Clinic rotation. *Prerequisites:* ODD\*111 with a grade of "C" or better.

### **ODD\*113, Clinical Refractometry (4 cr.)**

This course is designed to provide the student with a thorough understanding of the basic principles and techniques of objective and subjective refractometry. Material will include basic optical concepts, anatomy and physiology of the eye as a visual system, taking a comprehensive medical and visual history, retinoscopy, color vision testing, evaluating stereopsis, automated refractometry, and vision screening techniques.

### **ODD\*120, Contact Lenses I (3 cr.)**

An introduction to the fitting of contact lenses; outlining the history of contact lenses and the development of new materials. Advantages and disadvantages of these materials will be outlined, as well as indications and contraindications to contact lens wear. Emphasis is placed on rigid lens fitting philosophies and acquisition of basic skills with related instrumentation. *Prerequisites:* BIO\*118 with a grade of "C" or better.

**ODD\*121, Contact Lenses II (4 cr.)**

Continuation of Contact Lenses I, with increased attention to lens selection and design. Fitting philosophies of hydrophilic and oxygen permeable lenses are put into practice, and follow-up care is stressed. Diagnostic as well as insertion and removal skills are increased. Lecture: 3 hours per week. Laboratory: 3 hours per week.

**Prerequisites:** ODD\*120 with a grade of "C" or better.

**ODD\*122, Contact Lenses III (4 credits/6 contact hours)**

Continuation of Contact Lenses II, dealing mainly with special fitting problems and special lens designs. Practice management techniques are included, as well as continued use of all needed instrumentation. Lecture: 3 hours per week. Laboratory: 3 hours per week. **Prerequisites:** ODD\*121 with a grade of "C" or better.

**ODD\*130, Low Vision (1 cr.)**

This course is designed to familiarize the student with a wide range of physiological disorders and diseases that lead to significant vision loss, and the optical and non-optical devices used to provide correction. Emphasis will be placed on the use of telescopic, magnifiers, illuminating devices, and a list of resources for the partially sighted patient.

**ODD\*299, Opticianry Practicum (2 cr.)**

Students are placed in area optical firms licensed by the State of Connecticut, Department of Health Services, under the direct supervision of a licensed optician. This summer practicum is designed to provide more diverse practical experience to the student/apprentice optician. Supervision of this program will include job site visits by the college faculty member and both employer and faculty evaluation of students' performance. Students will be required to complete an on-campus orientation to the Optical and Contact Lens Clinics, and will be required to keep a log of their daily activities in the off-campus work place.

**OPHTHALMIC MEDICAL ASSISTING (OMA\*)**

*Special Note: Students must enroll in OMA\*101, OMA\*102, OMA\*103, and OMA\*104 during the same semester.*

**OMA\*101, Introduction to Ophthalmic Medical Assisting (3 cr.)**

This course introduces the role, scope, and duties of the ophthalmic assistant, including medical history-taking, preliminary patient examination, assessing visual fields, ophthalmic equipment, and office efficiency. Topics included will be the comprehensive eye exam and supplemental tests, lensometry and basic opticianry skills. It also introduces theoretical, clinical, physical and geometric optics, and provides an introduction to the types of vision loss and corrective devices used in Low Vision care.

**Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (New course, June 2014)

**OMA\*102, Ocular Anatomy, Physiology and Pathology (3 cr.)**

This course provides the learner with a detailed study of normal ocular anatomy, physiology and pathology. Topics to include; medical terminology and vocabulary commonly used in health care field, the origin of words with emphasis on suffixes, prefixes, roots, abbreviations and terminology pertinent to body systems. It includes the fundamentals of common external and internal diseases of eye and the orbital region, emphasizing the ocular effects of systemic diseases, identification of ocular emergencies, triage and the appropriate response. Topics will also include common ocular surgical procedures, first aid treatment and physician referral procedures.

**Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (New course, June 2014)

**OMA\*103, Ophthalmic Clinical Skills and Procedures (4 cr.)**

This course emphasizes basic skills in patient care and examination techniques to include medical history taking and the assessment of the pupils. Additional clinical training will include tonometry, first aid treatment, retinoscopy, biomicroscopy, objective and subjective refractometry, measuring vital signs, clinical equipment maintenance and visual field analysis. Other topics include an overview of ophthalmic pharmacology, comparing drug delivery systems and administering and recording topical and oral medications at a physician's direction. A safety component of the course covers office

and clinic safety, microbiology, disinfection/sterilization and control of infections and prevention of contamination in a medical facility. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (New course, June 2014)

**OMA\*104, Healthcare Policies and Procedures (3 cr.)**

This course is designed to serve as an introduction to the health care delivery system and health information management functions for allied health professionals. The students will be introduced to the types of health care delivery organizations and professionals, HIPAA, medical record content, reimbursement methodology and electronic health record use. Important topics of the course will include developing oral and written communication skills, patient education, patient services and relations, medical ethics, regulatory and legal issues, community health eyecare and ophthalmic assistant administrative duties.

**Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (New course, June 2014)

**PHILOSOPHY (PHL\*)****PHL\*101, Introduction to Philosophy (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

Some of the major philosophical problems, theories of knowledge, reality, and value. The nature of philosophical thought. Readings in philosophical literature. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**PHL\*111, Ethics (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

A study of the leading theories of morality and ethics concerning what is good, right, and just; the principles of good moral reasoning; and the examination of contemporary ethical issues and social problems. Readings in both classical and contemporary philosophical literature. Library research required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**PHL\*131, Logic (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

Logic is the study of reasoning. It promotes skill in evaluating persuasive language according to general standards of validity. Accordingly, this course introduces forms of deductive and inductive reasoning and methods of evaluation. Attention is given to argument recognition, fallacy identification, and the analysis of reasoning in ordinary language. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101.

**PHL\*145, Sustainable Living (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

Sustainable living involves creating and maintaining conditions under which humans and nature can exist in productive harmony, fulfilling environmental, social, economic and other requirements of present and future generations. This course offers an introduction to, and survey of, ideas and issues surrounding sustainability. This includes examining current human practices and lifestyles to determine if they are sustainable or not. It also includes studying possible alternative approaches to living that may be more sustainable as well as considering strategies for change. Topics include eco-literacy, energy and food, technology and design, politics and society, economics and money, ethics and aesthetics, worldview and spirituality. **Prerequisites:** ENG\*101E or ENG\*101.

**PHL\*151, World Religions (3 cr.)**

*Gen Ed Competencies: Critical Analysis & Logical Thinking, Global Knowledge*

An introduction to the beliefs and practices of major world religions such as Judaism, Christianity, Islam, Hinduism, Buddhism, Taoism, Shamanism, etc. Students will gain an appreciation for the similarities and differences between various religions. The course will also touch on philosophical religious questions such as the value of religion, God, faith, soul, immortality, evil, mystical experience, etc. Library research required. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101. (Fulfills a "D" course requirement or an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**PHL\*199, Special Topics in Philosophy (3 cr.)**

*Gen Ed Competency: Critical Analysis & Logical Thinking*

An in-depth exploration of a specialized area in philosophy. The content of this course may vary every time it is offered. **Prerequisites:** Either ENG\*101ALP, ENG\*101E, or ENG\*101. **Recommended:** PHL\*101 (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**PHYSICS (PHY\*)**

*\$\$ Supplemental Course Fee: Many science lab courses require a separate fee added at the time of registration in order to cover the cost of additional instructional time, supplies, and materials used by students.*

**PHY\*110, Introductory Physics (4 credits/6 contact hours)** *\$\$ Laboratory Course Fee*

*Gen Ed Competency: Scientific Reasoning*  
An introductory course in the physics of motion, heat, sound, electricity, magnetism, light, optics, and the theory of the atom. A process oriented laboratory approach emphasizing exploration and problem solving. This course is intended for nonscience majors, or for students who need only one semester of physics. Students with credit for high school physics should elect PHY\*121 or PHY\*221. Scientific calculator required. Class meets 6 hours per week for integrated lecture and laboratory. **Prerequisites:** Eligible for ENG\*101 and eligible for MAT\*137 or higher.

**PHY\*121, General Physics I (4 credits/6 contact hours)** *\$\$ Laboratory Course Fee*

*Gen Ed Competency: Scientific Reasoning*  
Basic concepts of mechanics and heat, including motion, forces, work and energy, conservation laws, fluid and thermal phenomena, and the laws of thermodynamics. Scientific calculator required. Lecture: 3 hours per week. Laboratory: 3 hours per week. **Prerequisites:** Eligible for ENG\*101, and MAT\*173 with a grade of "C" or better.

**PHY\*122, General Physics II (4 cr./6 contact hours)**

*\$\$ Laboratory Course Fee*  
*Gen Ed Competency: Scientific Reasoning*  
Basic concepts of electricity, magnetism, and wave motion, including electric and magnetic fields, electromagnetic radiation, wave properties of light, and optics. Scientific calculator required. Lecture: 3 hours per week. Laboratory: 3 hours per week. **Prerequisites:** PHY \*121, which may be taken concurrently.

**PHY\*221, Calculus-Based Physics I (4 cr./6 contact hours)**

*\$\$ Laboratory Course Fee*  
*Gen Ed Competency: Scientific Reasoning*  
Basic facts and principles of physics. Elementary concepts of calculus are used. Classical dynamics, rigid-body motion, harmonic motion, wave motion, acoustics, relativistic dynamics, thermodynamics. Lecture: 3 hours per week. Laboratory: 3 hours per week. **Prerequisites:** MAT\*254, which may be taken concurrently.

**PHY\*222, Calculus-Based Physics II (4 cr./6 contact hours)**

*\$\$ Laboratory Course Fee*  
*Gen Ed Competency: Scientific Reasoning*  
Electric and magnetic fields, electromagnetic waves, quantum effects, introduction to atomic physics. Lecture: 3 hours per week. Laboratory: 3 hours per week. **Prerequisites:** PHY\*221.

**POLITICAL SCIENCE (POL\*)****POL\*102, Introduction to Comparative Politics (3 cr.)**

*Gen Ed Competency: Social Phenomena*  
This course focuses on the governments and peoples of the major regions of the world: Europe, Africa, the Middle East, Asia, and the Americas. It examines global variations in governing structures due to historic, cultural, religious, economic, and other causes. Issues of Third World democratization, economic globalization, Islam and democracy's "clash of civilizations," authoritarian states, and other timely issues will be subjects of class discussions and course papers. (Fulfills a "D" course requirement or an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**POL\*103, Introduction to International Relations (3 cr.)**

*Gen Ed Competencies: Global Knowledge, Social Phenomena*  
This course examines international politics and has a focus on the United States in its superpower role. Relationships between nations which range from constructive engagement and peacemaking to war making will be examined. The Vietnam, Middle East, Balkan, Northern Ireland, and other conflicts will serve as case studies for understanding the forces shaping international politics. Present day topics concerning the United Nations, international terrorism, global capitalism, and others will be studied. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)



**POL\*111, American Government (3 cr.)***Gen Ed Competency: Social Phenomena*

This course examines the patterns of politics in the nation, Constitution, Congress, and Presidency. Topics of study include political ideologies, interest group pluralism, citizen alienation, institutional power, democracy's requirements, and others. Learning objectives include becoming politically informed, engaging in political discussions, and analyzing the government's responsiveness to citizens' needs. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**POL\*112, State and Local Government (3 cr.)***Gen Ed Competency: Social Phenomena*

The forms, functions, processes and problems of state and local government in the United States. Emphasis is on Connecticut, including the governorship and the General Assembly, state agencies, and localities with mayors, councils, and/or town meetings.

**POL\*120, Introduction to Law (3 cr.)**

The course serves as an introduction to the study of law with an overview of fundamental concepts and principles of the U.S. legal system. A variety of legal topics, terminology, and areas of law are discussed in order to assist students in acquiring an appreciation of the dynamic role of law in our changing society. Students are introduced to the roles of legal professionals, including paralegals. Legal reasoning, legal ethics, and legal research methods are also presented. (New course, December 2014)

**POL\*293, Connecticut Legislative Internship (6 Credits)***Gen Ed Competency: Social Phenomena*

This course is an active learning experience for the student as an intern in the state legislature. A student must apply directly to this college's faculty representative for selection. Learning involves becoming informed of the General Assembly's lawmaking processes, and developing skills to serve both the state legislator and his/her constituents. The intern will have the opportunity for in-service orientation at the legislature prior to its January start.

**PSYCHOLOGY (PSY\*)****PSY\*103, Introduction to Holistic Wellness (3 cr.)**

This course explores how cognition, emotion, stress, lifestyle, and the environment impact a person's health and sense of well-being. Students will review the psychological and behavioral factors which enhance wellness while preventing one risk for illness. Students will journey toward wellness by studying and experiencing alternative, preventive and stress reducing techniques. Modalities explored are: the mind/body connection, relaxation, nutrition, exercise and spirituality. Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.

**PSY\*111, General Psychology I (3 cr.)***Gen Ed Competencies: Scientific Reasoning, Social Phenomena*

An exploration and review of the field of psychology, including major principals, theoretical perspectives and methodological approaches, with an emphasis on the biological basis of mind and behavior, healthy psychology, motivation and emotion, learning, memory, psychological disorders and treatment, and social psychology. *Prerequisites:* Eligible for either ENG\*101E or ENG 101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**PSY\*201, Life Span Development (3 cr.)***Gen Ed Competency: Social Phenomena*

This course will examine human development from conception through death. Theories pertaining to physical, cognitive, and psychosocial development will be explored and applied to the developmental tasks which face the individual throughout the life span. Human Development, as a process of adaptation to the biological, psychological, sociological, and cognitive challenges which are continuously presented to the growing person, will be explored. *Prerequisites:* PSY\*111. (Fulfills a "D" course requirement or an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**PSY\*204, Child and Adolescent Development (3 cr.)***Gen Ed Competency: Social Phenomena*

This course will examine childhood from conception through adolescence, with emphasis on the areas of emotional, social, cognitive, language and physical development. *Prerequisites:* PSY\*111.

**PSY\*208, Psychology of Adult Development and Aging (3 cr.)**

Examines adult development from young adulthood through old age and death. Emphasis is on current theories of each stage of adulthood and their implications for career choice and change, intimacy and marriage, parenthood, mid-life adjustment, retirement and death. *Prerequisites:* PSY\*111 and either ENG\*101E or ENG\*101. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**PSY\*240, Social Psychology (3 cr.)***Gen Ed Competencies: Scientific Reasoning, Social Phenomena*

Social psychology involves the study of the ways in which human behavior, thought, and emotion are affected by the presence or actions of other people, as well as by the social context. Topics to be covered include social cognition, attitudes, social influence, aggression, interpersonal relationships, group behavior, and cultural influences, with an emphasis on the fundamental psychological processes that underlie these phenomena. In addition to examining theory and research in social psychology, the course will examine the methods that behavioral researchers use to study interpersonal processes. *Prerequisites:* SOC\*101 or PSY\*111. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**PSY\*243, Theories of Personality (3 cr.)**

Study of the human individual, with emphasis on self as related to others. Investigation of personal growth, defense mechanisms, and the mental health movement. *Prerequisites:* PSY\*111.

**PSY\*245, Abnormal Psychology (3 cr.)***Gen Ed Competency: Social Phenomena*

This course examines the major theories of psychopathology and explores the research, classification systems, and intervention strategies relative to each theoretical perspective. Diagnostic categories and processes will also be studied. *Prerequisites:* Either ENG\*101E or ENG\*101 and PSY\*111 with a "C" or better. (Fulfills a "D" course requirement or an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **PSY\*247, Industrial & Organizational Psychology (3 cr.)**

Psychological principles are applied to business, industry, education, politics. Topics include job evaluation, motivation, management relations, individual and group relations. This course is appropriate as the psychology elective for the business and secretarial programs. Its transferability depends upon the policy of the receiving institution.

### **PSY\*251, Behavior Disorders of Children and Youth (3 cr.)**

This course is an advanced level study of the behavioral, educational and psychological problems displayed by young people. The emphasis is on how these problems are impacted by biological, social, cultural, cognitive, family and situational factors. Evaluation and treatment perspectives will be explored. *Prerequisites:* Either ENG\*101E or ENG\*101, and PSY\*111. (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **PSY\*258, Behavior Modification (3 cr.)**

This course focuses on the basic current principles of learning with particular application to the area of cognitive and behavioral management. Behavioral intervention and treatment of diverse problems will be studied. *Prerequisites:* PSY\*111.

### **PSY\*298, Special Topics in Psychology (3 cr.)**

Selected contemporary issues in psychology—for example, personality, motivation, learning and drugs. This course is not intended to be taken in lieu of PSY\*111 or to transfer for that purpose.

## **PHYSICAL SCIENCE (PSC\*)**

### **PSC\*101, Physical Science I (3 cr.)**

An introduction to physics and chemistry for students with no previous experience in science. Necessary mathematical concepts are taught as part of the course. Recommended for individuals planning a career in elementary education or as a general science elective. Credit not given to students who have already taken any of the following: CHE\*111, CHE\*112, CHE\*121, CHE\*122, PHY\*121, or PHY\*122. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101 and either MAT\*085, MAT\*095-I or MAT\*095 with a "C-" or better or taken concurrently.

## **RADIOLOGIC TECHNOLOGY (RAD\*)**

### **RAD\*105, Radiographic Anatomy Procedures I (3 cr.)**

This course emphasizes task objectives and competencies in general radiographic procedures and related anatomy, medical terminology, and image evaluation.

*Prerequisites:* Admission to Rad Tech, BIO\*211 and BIO\*212 with "C+" or better for both.

### **RAD\*109, Methods of Patient Care I (1 cr.)**

*Gen Ed Competency: Social Phenomena*

This course is an introduction to patient care, including patient communication, interaction, history taking, and patient education. Students will be able to communicate and assess patients, evaluate and record patient history, and learn to correctly document. Students will also be able to differentiate between immobilization and restraints, recognize special needs of patients, and respect cultural and human diversity. Course content will also include: vital signs, medical emergencies, oxygen safety, patient consent, and ethical and legal issues in healthcare. Students will perform research and prepare a poster or presentation on an approved topic chosen from the course objectives. This is an "L" course. This is a "D" course.

*Prerequisites:* Admission to Rad Tech, BIO\*211 and BIO\*212 with a "C+" or better for both.

### **RAD\*171, Radiographic Clinical Practicum I (2 cr.)**

This course introduces the clinical setting and general radiographic areas of diagnostic imaging with supervised clinical practice. Students will refine patient care and positioning skills. *Prerequisites:* Admission to Rad Tech, BIO\*211 and BIO\*212 with "C+" or better for both.

### **RAD\*172, Radiographic Clinical Practicum II (2 cr.)**

Students continue to practice clinical skills in the general radiographic areas of diagnostic imaging with supervised clinical practice. *Prerequisites:* RAD\*105, RAD\*109 and RAD\*171 with "C" or better for all.

### **RAD\*200, Radiologic Physics & Diagnostic Imaging Modalities (3 cr.)**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

This course provides the student with advanced study of fluoroscopy, physics, computed radiography, digital radiography, digital fluoroscopy, and quality assurance/quality control techniques used to evaluate radiographic imaging equipment. *Prerequisites:* RAD\*209, RAD\*172, RAD\*219 and RAD\*204 with "C" or better for all.

### **RAD\*204, Radiographic Anatomy & Procedures II (3 cr.)**

The student will continue task objectives and competencies in general radiographic procedures and related anatomy, medical terminology, and image evaluation. *Prerequisites:* RAD\*105, RAD\*109 and RAD\*171 with "C" or better for all.

### **RAD\*206, Quality Assurance (3 cr.)**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*  
This course is a continuation in the advanced study of fluoroscopy, physics, computed radiography, digital radiography, digital fluoroscopy, and the techniques and testing to evaluate and assess quality assurance. *Prerequisites:* RAD\*240 and RAD\*200 with "C" or better for both.

### **RAD\*209, Methods of Patient Care II (3 cr.)**

*Gen Ed Competency: Social Phenomena*  
This course is a continuation of the study of patient care procedures, techniques, and therapeutic practices in the radiology department, and is designed to prepare students to act quickly and effectively in case of medical emergency. Additional topics will include contrast media, pharmacology, venipuncture, ECG and CPR. *Prerequisites:* RAD\*105, RAD\*109 and RAD\*171 with "C" or better for all.

### **RAD\*219, Radiographic Equipment and Image Production (3 cr.)**

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*  
This introductory course will cover radiographic equipment with emphasis on image formation, radiation protection and safety, and the production and interaction of x-rays with matter. Imaging accessories and their effect on radiographic quality will be discussed. *Prerequisites:* RAD\*105, RAD\*109 and RAD\*171 with "C" or better for all.



### **RAD\*222, Radiobiology and Protection (3 cr.)**

This course is designed to present a clear understanding of all sources and use of medical radiation and the various types of equipment in a radiology department. Includes the study of radioisotopes, the production of x-rays, imaging measurements of radiation and a basic understanding of the ways in which radiation interacts with the biological system. Emphasis is also placed on the various methods of protection for both technologists and patients. *Prerequisites:* RAD\*240 and RAD\*200 with "C" or better for both.

### **RAD\*223, Pathology for Medical Imaging (2 cr.)**

This course replaces RAD\*215. This course provides an overview of pathological conditions that are demonstrated by diagnostic imaging. Lecture material will include the cause and treatment of the disease process. Pediatric radiology is also presented. A research paper and presentation is required. *Prerequisites:* RAD\*240 and RAD\*200 with "C" or better for both.

### **RAD\*240, Radiographic Clinical Practicum III (4 cr.)**

Students continue to practice clinical skills in the general radiographic areas of diagnostic imaging with supervised clinical practice. *Prerequisites:* RAD\*209, RAD\*172, RAD\*219 and RAD\*204 with "C" or better for all.

### **RAD\*241, Radiographic Clinical Practicum IV (3 cr.)**

Students continue to practice clinical skills in the general radiographic areas of diagnostic imaging with supervised clinical practice. *Prerequisites:* RAD\*240 and RAD\*200 with "C" or better for both.

### **RAD\*271, Advanced Clinical Internship (6 Credits)**

*Gen Ed Competency: Social Phenomena*  
The student will have the opportunity to refine skills learned earlier in the program with indirect supervision. Students will perform a comprehensive final clinical competency in preparation to apply for the national registry examination. *Prerequisites:* RAD\*222, RAD\*215, RAD\*206 and RAD\*241 with "C" or better for all.

## **SCIENCE (SCI\*)**

*\$\$ Laboratory Course Fee: Many science lab courses require a separate fee added at the time of registration in order to cover the cost of supplies and materials used by students.*

### **SCI\*103, Recent Discoveries in Science I (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

This course teaches science by studying recent developments and progress in the discipline. Course content will be topical and dependent upon both current scientific issues and the areas of interest of course participants. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

### **CJS\*285/SCI\*285, Forensic Science with Laboratory (4 credits/6 contact hours)**

*\$\$ Laboratory Course Fee*

*Gen Ed Competencies: Scientific Knowledge & Understanding, Scientific Reasoning*

A study of how the disciplines of Biology, Chemistry, Earth Science, Physical Science, and Physics meld to form the field of Forensic Science. The course will focus on developing the scientific vocabulary necessary for investigators to communicate with scientists. This course is meant to assist students who are pursuing a career in criminal justice. Emphasis of the course is placed on scientific analysis of data rather than detective work. Students will learn to appreciate how the major fields of science are utilized in solving crimes. The laboratory component will provide hands-on opportunities to integrate scientific methodology as it relates to criminal justice and the limitations of scientific testing. *Prerequisites:* ENG\*101-ALP, ENG\*101E, or ENG\*101 with a grade of "C-" or better AND eligible for MAT\*137 or MAT\*137E. This course replaces CJS\*225 Forensic Science. Students cannot get academic credit for taking both CJS\*225 and CJS\*285/SCI\*285.

## **SOCIOLOGY (SOC\*, SSC\*)**

### **SOC\*101, Principles of Sociology (3 cr.)**

*Gen Ed Competency: Social Phenomena*

A study of modern society and its social organization, institutions, groups and social roles. Topics of study will include patterns of social interaction, the organization and stratification of groups ranging from families to corporations, and others. Learning objectives include applying scientific methods of analysis and examining social issues from a humanistic perspective. *Prerequisites:*

Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

### **SOC\*103, Social Problems (3 cr.)**

*Gen Ed Competency: Social Phenomena*

A systematic analysis of major contemporary social problems, such as mental illness, crime, poverty, and racial and ethnic conflicts, with emphasis on their origins. Recommended as the introductory course for students having a general interest in sociology. Majors in the field should also take SOC\*101. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

### **SOC\*114, Sociology of Aging (3 cr.)**

This course will explore the impact of social and sociocultural conditions on the psychological, physiological, and psychosocial processes of aging. This course will explore the demographics of aging, and how the diversity of the aging population impacts societal, clinical, therapeutic, and institutional responses. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

### **SOC\*117, Minorities in the U.S. (3 cr.)**

*Gen Ed Competency: Social Phenomena*

This course examines ethnicity in the transformation of America. The course focuses on cultures of diverse ethnic groupings, patterns of identity, discrimination due to economic forces, issues of assimilation, ethnic contributions to a multicultural democracy and other democracies. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

### **SOC\*120, Group Dynamics (3 cr.)**

*Gen Ed Competency: Oral Communication in English, Social Phenomena*

An overview of the interactions generated by group experience and group leadership. Emphasis on the principle dynamics of group interaction, group decision-making, and how these may be applied both in the therapeutic milieu and within organizations. *Prerequisites:* Eligible for either ENG\*101E or ENG\*101.

**HLT\*160/SOC\*160, Introduction to Public Health (3 cr.)**

*Gen Ed Competencies: Global Knowledge, Scientific Reasoning, Social Phenomena*

This course provides a basic overview of public health and various public health systems. It provides a foundation for the understanding of public health principles and practices for any student interested in social work, health careers, biology, health education, or simply being an informed citizen. Topics will include the effects of individual lifestyle decisions and their relation to personal and public health. The course deals with a variety of current public health threats and trends, and how public health professionals play a role in identifying and remediating or avoiding them. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SOC\*190, Self and Others: Dynamics of Diversity (3 cr.)**

*Gen Ed Competency: Social Phenomena*

An examination of how the United States is growing increasingly diverse. The goal of the course is to have students understand the sociocultural nature of human identity and diversity. Topics include race, ethnicity, class, gender, religion, physical disability, sexual orientation, pluralism and its implications. **Prerequisites:** SOC\*101 or SOC\*117. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SOC\*210, Sociology of the Family (3 cr.)**

*Gen Ed Competency: Social Phenomena*

An examination of the evolution of contemporary relationships such as dating, cohabitation and marriage. The implications of changes in relationships and their effect on the individual, family and society will be analyzed. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SOC\*212, Sociology of Women (3 cr.)**

A study of a "Woman's Place" from a sociological and multidisciplinary perspective. The origins of women's position in society and the historical transformations that have occurred in the Western World and, particularly, in the United States, will be discussed along with contemporary issues. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SOC\*213, Human Sexuality (3 cr.)**

*Gen Ed Competency: Social Phenomena*

A study of contemporary human sexuality in Western society from both sociological and multidisciplinary perspectives. History and patterns of sexual behavior are discussed including such topics as contraception, sexual response, gender roles, orientation, sexual coercion, and sexually transmitted diseases. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SOC\*221, Social Inequality (3 cr.)**

*Gen Ed Competency: Social Phenomena*

The study of structured social inequality in the United States and globally; the existence of class and power structures and their effects on the lives of Americans; the relation of different forms of inequality based on class, ethnicity, religion, age, and gender. The various strategies people employ to respond to inequality. **Prerequisites:** SOC\*101 or SOC\*117 or ANT\*205 or SOC\*190.

**SOC\*225, Death and Dying (3 cr.)**

A sociological and psychological study of death and dying. Topics include cultural attitudes toward death, self confrontation and value identification, dealing with dying, survivors and grieving, children and death, suicide, euthanasia. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101.

**SOC\*240, Criminology (3 cr.)**

*Gen Ed Competencies: Scientific Reasoning, Social Phenomena*

The course examines the nature and cause of crime, approaches to the study of crime, and its treatment and prevention. The sociology of criminal law and the nature of criminal behavior are also examined. **Prerequisites:** Eligible for ENG\*101-ALP, ENG\*101E or ENG\*101. (Prerequisite updated October 2015, to add ENG\*101-ALP) (Fulfills an "L" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SOC\*241, Juvenile Delinquency (3 cr.)**

*Gen Ed Competency: Social Phenomena*

This course examines the meaning of the concept of juvenile delinquency. Considered are the relationships between social attitudes and definitions of youthful law violations, along with studies on various forms of delinquency. Also analyzed are the diverse theoretical interpretations of delinquency including sub cultural theories, bodily related factors, emotional pressures

and environmental pressures. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SOC\*277, Social Survey Research (3 cr.)**

*Gen Ed Competency: Social Phenomena*

This course will provide students with a hands-on learning experience in social science research. Its main purpose is to survey the major research designs and research techniques that are at the core of contemporary approaches used to study social phenomena. Students will be directly involved in designing and conducting survey research on a social issue. Topics will include interview and questionnaire design, computerized data collection, management and analysis, and writing a research report. **Prerequisites:** MAT\*167 or MAT\*168, may be taken concurrently.

**SSC\*153, Women and Work (3 cr.)**

A multidisciplinary study of women and work. This course provides a historical overview as well as an examination of contemporary issues such as the family and work gender socialization, sex discrimination and the emotional work in which women engage. It includes a discussion of the individual and collective strategies that women employ to meet various challenges. Topics of discussion are conditioned by the diverse backgrounds, interests and needs of students in each particular class. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

---

**SPANISH (SPA\*)**

---

**SPA\*101, Elementary Spanish I (3 cr.)**

Fundamentals of grammar with emphasis on the development of speaking, listening, and writing skills. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SPA\*102, Elementary Spanish II (3 cr.)**

Continued development of speaking, listening, and writing skills as well as fundamentals of grammar. **Prerequisites:** SPA\*101. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester)

**SPA\*201, Intermediate Spanish I (3 cr.)**

Further study of grammar with continued emphasis on the development of conversational fluency and writing proficiency. Compositions. Introduction to literature. *Prerequisites:* SPA\*102. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

**SPA\*202, Intermediate Spanish II (3 cr.)**

Continuation of the study of grammar with further emphasis on the development of conversational fluency and writing proficiency. Compositions. Literature. *Prerequisites:* SPA\*201. (Fulfills a "D" course requirement for students who enrolled in a degree program prior to the Fall 2016 semester.)

## THEATRE (THR\*)

---

**THR\*101, Introduction to Theatre (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Historical Knowledge*

This course is designed to introduce students to the world of theater as an expressive and collaborative art form. Students will have the opportunity to develop an appreciation and understanding of theater from its origin to the present day. Areas of study will include: theater history, genres and styles, the study of plays, stage terminology, acting, theater production, and theater as a profession. While not designed as an "acting" course, some in-class performance work may be included. Students will view recorded versions of plays during class. Attending at least one live theater performance will be required. *Prerequisites:* Either ENG\*101ALP, ENG\*101E, or ENG\*101.

**THR\*102, Theatre History (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Historical Knowledge*

This survey course provides students with an opportunity to learn about the rich history of the theatre—from the early elements of drama to the Restoration period. The course considers how drama (plays) and theatre (performance elements) create cultural experiences that reflect the community; motivate dialogue between people within a community; and inspire conversations across societies and cultures. The course is anchored by key dramatic literature; and the course asks students to read and gather an understanding about these plays to make connections between the past and present.

**THR\*110, Acting I (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

An introduction to the art of acting. This experiential course emphasizes the fundamental tools of the actor including use of voice and body, development of the imagination, creative interpretation, characterization, improvisation, and script analysis. Through both individual and group exercises, students will gain knowledge of different acting styles as well as study and perform scripts.

**COM\*179/THR\*113, Performance for Film and Television (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

This course will develop performance and acting skills used in radio, television, and film including voice-over techniques, television news reporting and anchoring, dramatic acting, and comedic performance. Skills include voice articulation, projection and inflection, script analysis and interpretation. Students will analyze scripts and develop characters to improve acting and directing techniques and understand the importance of subtext to scenes. Students perform using microphones, teleprompters, lighting, and cameras. This course is designed for students interested in on-screen performance across a range of media as well as those interested in film and television directing and production.

**THR\*121, Plays in Production I (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Practicum emphasizing acting techniques and theatre production. This course prepares students for acting in more developed roles and incorporates practical aspects of theatre production concluding with the performance of a play in front of an audience. Acting roles are determined by audition. *Prerequisites:* THR\*110.

**THR\*210, Acting II (3 cr.)**

*Gen Ed Competencies: Aesthetic Dimensions, Creativity*

Acting II emphasizes advanced acting techniques and theatre production. This course prepares students for acting in more developed roles and incorporates practical aspects of theatre production concluding with the performance of a play in front of an audience. Acting roles are determined by audition, and each student will create, rehearse, and develop an acting role as well as take on other production responsibilities.

*Prerequisites:* THR\*110.

## THERAPEUTIC RECREATION (RLS\*)

---

**RLS\*121, Introduction to Therapeutic Recreation Services (3 cr.)**

Methods and activities that can aid in establishing better rapport with persons. Emphasis on therapeutic value of such experiences.

**RLS\*122, Processes and Techniques in Therapeutic Recreation (3 cr.)**

This course provides an exploration of methods and materials utilized to lead people in creative/arts activities, physical/body movement activities, mental/stimulation activities, and social/interaction activities. The analysis of activities and the specific techniques for adapting activities in therapeutic recreation will be examined.

**RLS\*221, Therapeutic Recreation (3 cr.)**

Emphasis is on meeting the varied needs and ability levels of clients through an in depth study of sensory integration, one to one programs for room bound, games, special events and parties, discussion groups, and creative expressions. *Prerequisites:* Either RLS\*121, PSY\*111.

## VETERINARY TECHNOLOGY (VET\*)

### **VET\*101, Introduction to Veterinary Technology (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

This course introduces the role of the Veterinary Technician to employment opportunities and professional development opportunities in the field. Covered topics include breed differentiation, nutrition, reproduction, and animal behavior. Ethics, animal welfare regulations, state and federal laws are reviewed, including controlled substance laws, occupational safety and health regulations and veterinary practice responsibilities. **Prerequisites:** Eligible for either ENG\*101E or ENG\*101.

THE FOLLOWING COURSES ARE AVAILABLE ONLY TO STUDENTS WHO HAVE BEEN ADMITTED TO THE VETERINARY TECHNOLOGY PROGRAM.

### **VET\*100, Introduction to Animal Care (2 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

This course is an introduction to practical experience with various species. Basic biological concepts and normative data of the various species including common husbandry practices and diseases are discussed. Restraint and handling methodologies are discussed and practiced. **Prerequisites:** Admission to Veterinary Technology Program.

### **VET\*102, Veterinary Office Management & Communication (3 cr.)**

*Gen Ed Competencies: Oral Communication in English, Scientific Knowledge & Understanding*

This is a business management course for Veterinary Technology students. Topics include office procedures and practices, staff management, triaging phone calls, recordkeeping, the human-animal bond, stress management, and client relations, including working with members of the public from diverse cultural, ethnic, religious, and socioeconomic backgrounds. Personnel administration and other administrative procedures common to veterinary medical practices including databases are reviewed. **Prerequisites:** Admission to Veterinary Technology Program.

### **VET\*151, Small Animal Veterinary Technology with Lab (4 cr./6 contact hours)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

Nursing procedures in small animals and laboratory species are discussed. Topics include physical examinations, common medical nursing techniques and emergency care. Long term nursing care of common animal conditions will be discussed including client education. The course includes vaccination protocols, nutritional support and specialized problems encountered in companion animals as well as hands-on work with lab animals. Relevant clinical cases will be utilized in lecture discussions. **Prerequisites:** VET\*100 and VET\*101 with a grade of "C" or better for both.

### **VET\*152, Large Animal Veterinary Technology with Lab (4 cr./6 contact hours)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

The course focuses on the specifics related to large animal medicine and nursing practices including techniques. Lectures include anatomy and physiology, nutrition and breeding of agricultural species. The etiology of disease, transmission, prevention and disease control are discussed. Topics include nursing care, diagnostic techniques, reproduction, husbandry, and common diseases. Laboratory sessions include restraint, physical exams, specimen collection, drug administration, and principles of husbandry. Supervised field trips are required. **Prerequisites:** VET\*100 and VET\*101, with a grade of "C" or better for both.

### **VET\*201, Veterinary Anatomy and Physiology I with Lab (4 cr./6 contact hours)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

Veterinary anatomy and physiology of domestic species presented as a two course series. The anatomic structures and physiologic functions of domestic animals including companion species are discussed. The first semester reviews the basic foundations of structure and function of the most common species including the integumentary, skeletal, muscular, nervous, endocrine and digestive systems in addition to cellular aspects of metabolism. Comparative aspects of canine, feline, and farm species are provided. Lecture and laboratory exercises emphasize the understanding of the organized body state

and the relationship of various components including cells, tissues, organs and body systems. **Prerequisites:** Admission to Veterinary Technology Program.

### **VET\*202, Veterinary Anatomy and Physiology II with Lab (4 cr./6 contact hours)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

This course is a continuation of Veterinary Anatomy and Physiology I, with discussion of the respiratory, circulatory, urinary and reproductive systems. Comparative aspects of canine, feline, avian, reptilian, laboratory, and farm species are provided. Relevant clinical topics are utilized during this course. **Prerequisites:** VET\*201 with a grade of "C" or better.

### **VET\*206, Laboratory Procedures for Vet Techs (2 cr./2 contact hours)**

This course replaces VET\*205.

*Gen Ed Competency: Scientific Knowledge & Understanding*

The theory behind clinical sample analysis utilizing clinical laboratory procedures including specimen collection, hematology, cytology, blood chemistry, urinalysis, necropsy technique, and serology. Emphasis is on manual performance of basic laboratory diagnostic procedures and discussion of the relevance of laboratory findings to the veterinary practitioner.

**Prerequisites:** MED\*125, VET\*151, VET\*152, and VET\*202, with a grade of "C" or better for all. VET\*206 must be taken concurrently with VET\*212 and VET\*230.

### **VET\*212, Principles of Imaging with Lab (1 credit/2 contact hours)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

The theory and principles of radiology and radiation safety are presented. Topics include radiologic and imaging principles and practices and their uses in patient diagnosis. Animal restraint, positioning, special diagnostic techniques and imaging are reviewed. Ultrasonography, Computerized Axial Tomography, Magnetic Resonance Imaging and Positron Emission Tomography will be discussed. **Prerequisites:** MED\*125, VET\*151, VET\*152, and VET\*202, with a grade of "C" or better for all. VET\*212 must be taken concurrently with VET\*206 and VET\*230. (Updated December 2014)



**VET\*220, Animal Pathology (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

This course is designed for students in the veterinary technology program. The main focus is to discuss select diseases in small and large animals as well as research animals. Diseases will be discussed in a categorized systematic format to include: infectious diseases, hematologic diseases, and diseases affecting various systems including cardiovascular, respiratory, gastrointestinal, integumentary, endocrine, reproductive and nervous. Clinical signs of organ dysfunction, pathophysiology, diagnostic tests, treatment and prevention are reviewed. Students will learn tissue sampling and preparation. Laboratory animal and "pocket pets" (rats, mice, hamsters, guinea pigs, rabbits, and ferrets) husbandry and techniques, including proper restraint, blood drawing and gavage will be taught through lectures and hands-on activities. These lectures will be in conjunction with the student's hands-on experiences at the Yale Animal Resource Center. This course will also require each student to perform a complete necropsy of a rat and an offsite field trip to a packing plant facility if time allows. **Prerequisites:** VET\*206 with a grade of "C" or better.

**VET\*230, Veterinary Anesthesia and Surgical Nursing with Lab (4 cr./6 contact hours)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

Lectures and demonstrations in general anesthetic technique, standard surgical procedure, and operating room conduct. The emphasis is on surgical technology including equipment and supply nomenclature, patient monitoring, aseptic, sterile technique, preoperative care of the patient and emergency medicine. Classifications and mechanisms of action for commonly used anesthetics, and analgesics are discussed. Topics include intravenous catheterization techniques, CPR, and oncology therapeutics. **Prerequisites:** MED\*125, VET\*151, VET\*152, and VET\*202, with a grade of "C" or better for all. VET\*230 must be taken concurrently with VET\*206 and VET\*212.

**VET\*238, Parasitology (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

This course is intended to familiarize students with the parasites of importance in the veterinary field with an emphasis on the diagnosis and treatment of parasitic diseases of domestic animals. A laboratory component focuses on clinical diagnostic procedures including immunodiagnostic techniques using both living and preserved specimens. Topics include prevention of infection and transmission, and zoonotic disease transmission, control and epidemiological concerns. **Prerequisites:** VET\* 206 with a grade of "C" or better.

**VET\*240, Periodontology and Oral Radiology (2 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

This course is an introduction to veterinary dentistry which has become a significant part of veterinary practices. Topics include oral anatomy, terminology periodontology oral radiography endodontics, orthodontics and restorative dentistry. Tasks performed by veterinary technicians, including oral radiography will be discussed. **Prerequisites:** VET\*206 and VET\*212, with a grade of "C" or better for both.

**VET\*250, Principles of Pharmacology for Vet Tech (3 cr.)**

*Gen Ed Competency: Scientific Knowledge & Understanding*

The study of dose and dosage in applied pharmacology is presented. Topics include basic mathematics, conversions, measurements, drug calculations, drug orders and fluid rate calculations. The major classes of drugs used in therapeutics, dose response characteristics, mechanisms of action, major physiological effects, toxicity and drug interactions are discussed. A review of laws applying to licensure and use of controlled substances in veterinary medicine is included. **Prerequisites:** VET\*201 with a grade of "C" or better.

**VET\*280, Veterinary Technology Externship I (1 credit)**

*Gen Ed Competencies: Oral Communication in English, Scientific Knowledge & Understanding*

This externship is a student's first externship experience. Students must demonstrate competency in the defined learning objectives in order to progress to VET\*286, Veterinary Technology Externship II.

Students will be responsible for documenting completion of a checklist of activities reflecting these objectives. For further information on Externship requirements students should consult both the MxCC Vet Tech Program Handbook and the MxCC Vet Tech Externship Manual.

The externship will offer a supervised experience under the direction of a licensed veterinarian, certified technician, or animal research technician through placement at an off-site veterinary hospital, private practice, or laboratory facility. Students will refine skills learned in all previous veterinary technology courses. A minimum of 40 hours of participation in a position relating to the veterinary technology field in a faculty-approved facility is required. **Prerequisites:** VET\*202, VET\*151, and VET\*152, each with a grade of "C" or better, and approval of the Vet Tech program coordinator.

**VET\*286, Veterinary Technology Externship II (1 cr.)**

*Gen Ed Competencies: Oral Communication in English, Scientific Knowledge & Understanding*

This externship is a student's final course within the Veterinary Technology Program. Students must demonstrate competency in the defined learning objectives in order to meet program completion expectations. Students will be responsible for documenting completion of a checklist of activities reflecting these objectives. For further information on Externship requirements students should consult the MxCC Vet Tech Program Handbook. The externship will offer a supervised experience under the direction of a licensed veterinarian, certified technician, or animal research technician through placement at an off-site veterinary hospital, private practice, or laboratory facility. Students will refine skills learned in all previous veterinary technology courses. A minimum of 200 hours of participation in a position relating to the veterinary technology field in a faculty-approved facility is required. **Prerequisites:** VET\*206, VET\*212, VET\*230, and VET\*280, each with a grade of "C" or better, and approval of the Vet Tech program coordinator.