2019 College Catalog Addendum

Mission Statement

The Mission Statement listed on the inside cover should read as follows:

The mission of Cogswell Polytechnical College is to prepare students for success in the creative-technology industries by providing an extraordinary, real-world education inspired by the entrepreneurial spirit of our Silicon Valley location.

Academic Calendar

The New Students Orientation dates listed on pages 5-6 have been revised as outlined below:

Revised Schedule for New Students Orientation	
Term	**Date**
Spring 2019 Term	January 18, 2019
Spring 2019 Mid-Session	March 15, 2019
Summer 2019 Term	May 17, 2019
Summer 2019 Mid-Session	July 7, 2019
Fall 2019 Term	September 6, 2019
Fall 2019 Mid-Session	October 25, 2019

The MA program start and end dates for 2019 are as outlined below:

MA in Entrepreneurship and Innovation 2019 Cohort Calendar Start and End Dates	
Spring Term	
February 9, 2019	Term Begins
June 1, 2019	Last Day of Term
Summer Term	
June 29, 2019	Term Begins
October 5, 2019	Last Day of Term
Fall Term	
October 19, 2019	Term Begins
February 9, 2020	Last Day of Term

Yellow Ribbon Program

Cogswell Polytechnical College participates in the Veterans Affairs (VA) Post-9/11 GI Bill® Yellow Ribbon program. This program allows approved degree-granting institutions and the VA to partially or fully fund tuition and fee expenses that exceed the established thresholds under the Post-9/11 GI Bill®. It assists in making additional funds available for veterans' education programs without an additional charge to their GI Bill® entitlement. The maximum school contribution under this program is $5,000 per calendar year. For more questions relating to this program, veterans may contact the Financial Aid Department for assistance.

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. Government Website at https://www.benefits.va.gov/gibill.

Admissions Requirements

The admissions requirements for both undergraduate and graduate programs listed on pages 7 and 8 should be modified as follows:

Unofficial transcripts must be received prior to the start of the term, however official transcripts must be received no later than 30 days from the start of the term.

Effective Fall 2019:

The admissions requirements for both undergraduate and international programs listed on pages 7 and 10 should be modified as follows:

Acceptable scores to determine placement is English and Math for students who do not achieve the minimum passing scores:

Subject	Engineering Programs	Non-Engineering	Placement
English	<70%	<70%	ENG050
Mathematics	40-74% - Test Version-2	NA	MATH116
Mathematics	< 40% Test Version-2	<45% Test Version-1	MATH050
Mathematics		45% to 64% Test Version-1	MATH060 & MATH112
Mathematics		>64% Test Version-1	MATH112
Mathematics	>74% Test 2	NA	MATH143

STUDENT LOAN OBLIGATION

If a student obtains a loan to pay for an educational program, the student has the responsibility to repay the full amount of the loan plus interest, less the amount of any refund.

STANDARD PERIOD OF NON-ENROLLMENT (SPN)

Students intending to request one term (trimester) off from attending Cogswell Polytechnical College must submit a written request for a Standard Period of Non-Enrollment (SPN) to the Registrar's Office. The SPN request form is available on the student portal or in the Registrar's Office. SPN's can be requested for one term (trimester) only during any 12-month period. A Standard Period of Non-Enrollment (SPN) must be requested prior to the end of the term preceding the term the student is requesting to be away from the College. Requests submitted after the end of term will not be considered. The request must be approved by the Registrar, Dean of Education, Business Office, and the Financial Aid Director before a student's status is changed.

Students approved for an SPN are expected to return at the beginning of the term following the SPN. While on an approved SPN, students will not be considered to have withdrawn from the College, no additional charges will be generated, and Financial Aid funds will not be disbursed. Students must register for the intended return term during the registration period as outlined in the Academic Calendar and must meet with a Financial Aid Advisor before they will be allowed to resume attending classes. Students who fail to return to the College by the expected date will be considered to have withdrawn from school and will therefore be responsible for any balance due. If withdrawn, the official withdrawal date will be retroactive to the student's last day of attendance and the date of determination will be the day the student was expected to have returned to the College.

An SPN extends a student's expected graduation date. Students on SPN may not be able to maintain their course sequencing. Students on SPN are not eligible to live in student housing.

TUITION AND FEES

Effective Fall 2019:

Tuition and Fees	
Tuition (per credit hour):	$825
Fees (per term):	
Campus Fee (Undergraduate Students):	$500
Technology Fee (Graduate Students):	$50
Student Tuition Recovery Fee (STRF):	$0
Books and Supplies (Estimated):	$500
Housing Fee:	$5,995
Other:	
Enrollment Fee:	$100

Charges (for the first term)				
Tuition and Fees	**Undergraduate Students**		**Graduate Students**	
	w/o Housing	With Housing	w/o Housing	With Housing
Undergraduate Tuition (based on 15 credits):	$12,375	$12,375		
Graduate Tuition (based on 9 credits):			$7,425	$7,425
Enrollment Fee:	$100	$100	$100	$100
Campus Fee:	$500	$500	$0	$0
Technology Fee:	$0	$0	$50	$50
Student Tuition Recovery Fee (STRF):	$0	$0	$0	$0
Books and Supplies (Estimated):	$500	$500	$500	$500
Housing Fee:	$0	$5,995	$0	$5,995
Total Charges for the First Term:	**$13,475**	**$19,470**	**$8,075**	**$14,070**

Other Fees	Amount
Late Payment Fee	$25 per Payment Due Date (non-refundable)
Official Transcript	$10 per transcript (non-refundable)
Graduation Fee	$100 (non-refundable)
Credit by Examination Fee	$75 per examination (non-refundable)
Audit Fee (waived for Cogswell graduates)	$500 per course (refundable per refund policy)
Diploma Reprint Fee	$25 (non-refundable)
Student ID Card Replacement Fee	$10 (non-refundable)
Student Housing Application Fee (yearly)	$100 (non-refundable)
Replacement VTA Pass Fee	$25 (non-refundable)
International Students Enrollment Fee	$500 (non-refundable)
Non-sufficient Funds (NSF) Fee	$20 (non-refundable)
Late Equipment Return Fee	$5 per day (non-refundable)

Tuition and Fees are subject to change.

TOTAL PROGRAM COSTS

The below estimated schedule of total charges for the entire educational programs are to be included with the Tuition and Fees listed on pages 18-19.

Total Estimated Charges per Program (*effective Fall 2018*)	
Program	**Total Costs**
BA in Digital Art and Animation	$106,762
BA in Game Design Art	$103,380
Bachelor of Business Administration	$103,380
BS in Computer Science	$111,526
BS in Digital Audio Technology	$112,320
BS in Game Design Engineering	$112,320
MA in Entrepreneurship and Innovation	$25,570

Total Estimated Charges per Program (*effective Fall 2019*)	
Program	**Total Costs**
BA in Digital Art and Animation	$110,575
BA in Game Design Art	$107,100
Bachelor of Business Administration	$107,100
BS in Computer Science	$115,525
BS in Digital Audio Technology	$116,350
BS in Game Design Engineering	$118,000
MA in Entrepreneurship and Innovation	$26,500

MA IN ENTREPRENEURSHIP AND INNOVATION PROGRAM

The below curriculum replaces the curriculum listed on page 47.

MA ENT Curriculum		
Course Number	**Course Name**	**Credits**
ENT520	Business Models and Planning	3
ENT525	Legal Structures, Contracts and Risk Management	3
ENT530	Finance and Accounting	3
ENT535	Entrepreneurial Marketing	3
ENT540	Negotiation, Sources and Uses of Power	3
ENT550	Digital Transformation and Social Media	3
ENT555	Leadership and Management	3
ENT570	Project Portfolio Management	3
ENT590 or	Entrepreneurship and Innovation Practicum I	3
ENT591 and	Entrepreneurship and Innovation Practicum 1	1.5
ENT592	Entrepreneurship and Innovation Practicum 2	1.5
ENT595 or	Entrepreneurship and Innovation Practicum II	3
ENT596 and	Entrepreneurship and Innovation Practicum 3	1.5
ENT597	Entrepreneurship and Innovation Practicum 4	1.5
Total 30 Credits		

BA IN DIGITAL ART AND ANIMATION PROGRAM

The below curriculum replaces the curriculum listed on page 54.

BA in Digital Art and Animation (DAA) Curriculum 3D Animation Concentration		
Digital Art and Animation Core Courses - 36 Credits		
Course Number	**Course Name**	**Credits**
ART100	2D Design 1	3
ART105	Color Theory	3
DAA106	Digital Imaging Concepts	3
ART110	Sketching	3
ART115	Figure Drawing 1	3
ART212	Perspective and Rendering	3
DAA240	Introduction to 3D Modeling	3
DAA244	Introduction to 3D Animation Principles	3
CS100	Introduction to Scripting: Python	3
DAA480	Portfolio 1	3
DAA 476 or DAA483	Animated Film Production or MediaWorks	3
DAA474 or DAA 476 or DAA477 or DAA483 or DAA485	Animated Film Pre-Production or Animated Film Production or Animated Film Post-Production or MediaWorks or Portfolio 2	3
3D Animation Concentration Courses - 36 credits		
Course Number	**Course Name**	**Credits**
DAA200	Acting	3
DAA221	Motion Graphics and Editing	3
DAA264	Drawing Animation 1	3
DAA265 or DAA312	2D Animation 1 or Animal Drawing and Motion	3
DAA267	Character Rigging	3
DAA310	Storyboarding	3
DAA321	Quadruped Animation	3
DAA360	3D Animation 1	3
DAA365	3D Animation 2	3
DAA465	3D Animation 3	3
DAA425	Advanced Motion Graphics	3
GAM360	Game Animation	3
Electives - 6 credits		
Course Number	**Course Name**	**Credits**
Elective	Elective or Internship	3
Elective	Elective or Internship	3
General Education Courses for Non-Engineering Majors - 45 credits		
Total 123 Credits		

BS IN COMPUTER SCIENCE PROGRAM

The below curriculum replaces the curriculum listed on page 49.

BS in Computer Science (CS) Curriculum General Concentration		
Computer Science and Engineering Core Courses - 50 Credits		
Course Number	**Course Name**	**Credits**
CS100	Introduction to Scripting: Python	3
CS110	C Programming	4
CS115	Web Programming: HTML5, CSS and JavaScript	3
CS190	Digital Systems	3
CS212	Java Programming	4
CS221	Linux Programming Environment	3
CS285	C++ Programming: Object Oriented Programming	4
CS295	Data Structures and Algorithms	4
CS320	Operating Systems Concepts	3
CS341	Network Systems	3
CS361	Introduction to Compilers	3
CS351	Computer Architecture	3
CS360	Database Management Systems	4
CSE480	Senior Project 1: Planning	3
CSE485	Senior Project 2: Execution	3
Math and the Sciences Core Courses - 7 Credits		
Course Number	**Course Name**	**Credits**
MATH145	Calculus 2	4
MATH295	Discrete Mathematics	3
CSE Program Approved Courses (PAC) - Select 24 credits from the list below		
Course Number	**Course Name**	**Credits**
MATH240	Applied Probability and Random Processes	3
MATH245	Calculus 3	3
MATH285	Abstract Algebra	3
MATH290	Linear Algebra and Transformations	3
CS316	Advanced Web Programming	3
CS375	Mobile Programming for iOS	3
CS376	Mobile Programming for Android	3
CS340	Software Engineering Methods and Project 1	3
SWE361	Software QA, Testing and Validation	3
SWE442	Software Engineering Methods and Project 2	3
CS457	Machine Learning	3
CS459	Data Mining and Visualization	3
CS446	High Performance Computing	3
CS352	Embedded Software Systems	3
CS445	Advanced C++ Programming	3
CS447	GUI and Graphics Programming	3
SWE449	Tools Programming	3
SCI345	College Physics 3	3
Elective	Elective or Internship	3
General Education Courses for Non-Engineering Majors - 48 credits		
Total 129 Credits		

BS IN COMPUTER SCIENCE PROGRAM

The below curriculum replaces the curriculum listed on page 50.

BS in Computer Science (CS) Curriculum Web and Mobile Concentration		
Computer Science and Engineering Core Courses - 50 Credits		
Course Number	**Course Name**	**Credits**
CS100	Introduction to Scripting: Python	3
CS110	C Programming	4
CS115	Web Programming: HTML5, CSS and JavaScript	3
CS190	Digital Systems	3
CS212	Java Programming	4
CS221	Linux Programming Environment	3
CS285	C++ Programming: Object Oriented Programming	4
CS295	Data Structures and Algorithms	4
CS320	Operating Systems Concepts	3
CS341	Network Systems	3
CS361	Introduction to Compilers	3
CS351	Computer Architecture	3
CS360	Database Management Systems	4
CSE480	Senior Project 1: Planning	3
CSE485	Senior Project 2: Execution	3
Math and the Sciences Core Courses - 7 Credits		
Course Number	**Course Name**	**Credits**
MATH145	Calculus 2	4
MATH295	Discrete Mathematics	3
Web and Mobile Concentration Courses - 9 Credits		
Course Number	**Course Name**	**Credits**
CS316	Advanced Web Programming	3
CS375	Mobile Programming for iOS	3
CS376	Mobile Programming for Android	3
CSE Program Approved Courses (PAC) - Select 15 credits from the list below		
Course Number	**Course Name**	**Credits**
MATH240	Applied Probability and Random Processes	3
MATH245	Calculus 3	3
MATH285	Abstract Algebra	3
MATH290	Linear Algebra and Transformations	3
CS340	Software Engineering Methods and Project 1	3
SWE361	Software QA, Testing and Validation	3
SWE442	Software Engineering Methods and Project 2	3
CS457	Machine Learning	3
CS459	Data Mining and Visualization	3
CS446	High Performance Computing	3
CS352	Embedded Software Systems	3
CS445	Advanced C++ Programming	3
CS447	GUI and Graphics Programming	3
SWE449	Tools Programming	3
SCI345	College Physics 3	3
Elective	Elective or Internship	3
General Education Courses for Computer Science and Engineering Majors - 48 credits		
Total 129 Credits		

BS IN COMPUTER SCIENCE PROGRAM

The below curriculum replaces the curriculum listed on page 51.

BS in Computer Science (CS) Curriculum Software Engineering Concentration		
Computer Science and Engineering Core Courses - 50 Credits		
Course Number	**Course Name**	**Credits**
CS100	Introduction to Scripting: Python	3
CS110	C Programming	4
CS115	Web Programming: HTML5, CSS and JavaScript	3
CS190	Digital Systems	3
CS212	Java Programming	4
CS221	Linux Programming Environment	3
CS285	C++ Programming: Object Oriented Programming	4
CS295	Data Structures and Algorithms	4
CS320	Operating Systems Concepts	3
CS341	Network Systems	3
CS361	Introduction to Compilers	3
CS351	Computer Architecture	3
CS360	Database Management Systems	4
CSE480	Senior Project 1: Planning	3
CSE485	Senior Project 2: Execution	3
Math and the Sciences Core Courses - 10 Credits		
Course Number	**Course Name**	**Credits**
MATH240	Applied Probability and Random Processes	3
MATH145	Calculus 2	4
MATH295	Discrete Mathematics	3
Software Engineering Concentration Courses - 9 Credits		
Course Number	**Course Name**	**Credits**
CS340	Software Engineering Methods and Project 1	3
SWE361	Software QA, Testing and Validation	3
SWE442	Software Engineering Methods and Project 2	3
CSE Program Approved Courses (PAC) - Select 12 credits from the list below		
Course Number	**Course Name**	**Credits**
MATH245	Calculus 3	3
MATH285	Abstract Algebra	3
MATH290	Linear Algebra and Transformations	3
CS316	Advanced Web Programming	3
CS375	Mobile Programming for iOS	3
CS376	Mobile Programming for Android	3
CS457	Machine Learning	3
CS459	Data Mining and Visualization	3
CS446	High Performance Computing	3
CS352	Embedded Software Systems	3
CS445	Advanced C++ Programming	3
CS447	GUI and Graphics Programming	3
SWE449	Tools Programming	3
SCI345	College Physics 3	3
Elective	Elective or Internship	3
General Education Courses for Computer Science and Engineering Majors - 48 credits		
Total 129 Credits		

BS IN COMPUTER SCIENCE PROGRAM

The below curriculum replaces the curriculum listed on page 52.

BS in Computer Science (CS) Curriculum Data Science Concentration		
Computer Science and Engineering Core Courses - 50 Credits		
Course Number	**Course Name**	**Credits**
CS100	Introduction to Scripting: Python	3
CS110	C Programming	4
CS115	Web Programming: HTML5, CSS and JavaScript	3
CS190	Digital Systems	3
CS212	Java Programming	4
CS221	Linux Programming Environment	3
CS285	C++ Programming: Object Oriented Programming	4
CS295	Data Structures and Algorithms	4
CS320	Operating Systems Concepts	3
CS341	Network Systems	3
CS361	Introduction to Compilers	3
CS351	Computer Architecture	3
CS360	Database Management Systems	4
CSE480	Senior Project 1: Planning	3
CSE485	Senior Project 2: Execution	3
Math and the Sciences Core Courses - 10 Credits		
Course Number	**Course Name**	**Credits**
MATH240	Applied Probability and Random Processes	3
MATH145	Calculus 2	4
MATH295	Discrete Mathematics	3
Digital Media Management Concentration Courses - 9 Credits		
Course Number	**Course Name**	**Credits**
CS457	Machine Learning	3
CS459	Data Mining and Visualization	3
CS446	High Performance Computing	3
CSE Program Approved Courses (PAC) - Select 12 credits from the list below		
Course Number	**Course Name**	**Credits**
MATH245	Calculus 3	3
MATH285	Abstract Algebra	3
MATH290	Linear Algebra and Transformations	3
CS316	Advanced Web Programming	3
CS375	Mobile Programming for iOS	3
CS376	Mobile Programming for Android	3
CS340	Software Engineering Methods and Project 1	3
SWE361	Software QA, Testing and Validation	3
SWE442	Software Engineering Methods and Project 2	3
CS352	Embedded Software Systems	3
CS445	Advanced C++ Programming	3
CS447	GUI and Graphics Programming	3
SCI345	College Physics 3	3
SWE449	Tools Programming	3
Elective	Elective or Internship	3
General Education Courses for Computer Science and Engineering Majors - 48 credits		
Total 129 Credits		

BA IN DIGITAL ART AND ANIMATION PROGRAM

The below curriculum replaces the curriculum listed on page 54.

BA in Digital Art and Animation (DAA) Curriculum 3D Animation Concentration		
Digital Art and Animation Core Courses - 36 Credits		
Course Number	**Course Name**	**Credits**
ART100	2D Design 1	3
ART105	Color Theory	3
DAA106	Digital Imaging Concepts	3
ART110	Sketching	3
ART115	Figure Drawing 1	3
ART212	Perspective and Rendering	3
DAA240	Introduction to 3D Modeling	3
DAA244	Introduction to 3D Animation Principles	3
CS100	Introduction to Scripting: Python	3
DAA480	Portfolio 1	3
DAA 476 or DAA483	Animated Film Production or MediaWorks	3
DAA474 or DAA 476 or DAA477 or DAA483 or DAA485	Animated Film Pre-Production or Animated Film Production or Animated Film Post-Production or MediaWorks or Portfolio 2	3
3D Animation Concentration Courses - 36 credits		
Course Number	**Course Name**	**Credits**
DAA200	Acting	3
DAA221	Motion Graphics and Editing	3
DAA264	Drawing Animation 1	3
DAA265 or DAA312	2D Animation 1 or Animal Drawing and Motion	3
DAA267	Character Rigging	3
DAA310	Storyboarding	3
DAA321	Quadruped Animation	3
DAA360	3D Animation 1	3
DAA365	3D Animation 2	3
DAA465	3D Animation 3	3
DAA425	Advanced Motion Graphics	3
GAM360	Game Animation	3
Electives - 6 credits		
Course Number	**Course Name**	**Credits**
Elective	Elective or Internship	3
Elective	Elective or Internship	3
General Education Courses for Non-Engineering Majors - 45 credits		
Total 123 Credits		

BA IN DIGITAL ART AND ANIMATION PROGRAM

The below curriculum replaces the curriculum listed on page 56.

BA in Digital Art and Animation (DAA) Curriculum Entertainment Design Concentration		
Digital Art and Animation Core Courses - 36 Credits		
Course Number	**Course Name**	**Credits**
ART100	2D Design 1	3
ART105	Color Theory	3
DAA106	Digital Imaging Concepts	3
ART110	Sketching	3
ART115	Figure Drawing 1	3
ART212	Perspective and Rendering	3
DAA240	Introduction to 3D Modeling	3
DAA244	Introduction to 3D Animation Principles	3
CS100	Introduction to Scripting: Python	3
DAA480	Portfolio 1	3
DAA 476 or DAA483	Animated Film Production or MediaWorks	3
DAA474 or DAA 476 or DAA477 or DAA483 or DAA485	Animated Film Pre-Production or Animated Film Production or Animated Film Post-Production or MediaWorks or Portfolio 2	3
Entertainment Design Concentration Courses - 36 credits		
Course Number	**Course Name**	**Credits**
ART210	Figure Drawing 2	3
DAA245	Texturing	3
DAA250	Digital Sculpture	3
DAA270	Illustration 1	3
DAA264	Drawing Animation 1	3
DAA320	Digital Painting	3
DAA340	Modeling 1	3
DAA370	Concept Design	3
DAA310	Storyboarding	3
DAA221	Editing and Motion Graphics	3
DAA425	Advanced Motion Graphics	3
DAA435	Matte Painting	3
Electives - 6 credits		
Course Number	**Course Name**	**Credits**
Elective	Elective or Internship	3
Elective	Elective or Internship	3
General Education Courses for Non-Engineering Majors - 45 credits		
Total 123 Credits		

BA IN GAME DESIGN ART PROGRAM

The below curriculum replaces the curriculum listed on page 63.

BA in Game Design Art (GDA) Curriculum Game Writing Concentration		
Game Design Art Core Courses - 33 Credits		
Course Number	**Course Name**	**Credits**
GAM225	Introduction to Game Production	3
GAM220	Introduction to Game Storytelling (or GAM235 Game Usability if GAM235 already taken)	3
GAM295	Game Design 1	3
GAM355	Level Design 1	3
GAM376	Game Design 2	3
GAM415	Level Design 2	3
GAM480	Game Studio 1	3
GAM485	Game Studio 2	3
BUS110 or BUS270	Principles of Management, or Project Management	3
ART100	2D Design	3
CS100	Introduction to Scripting: Python	3
Game Writing Concentration Courses – 33 credits		
Course Number	**Course Name**	**Credits**
ENG227	Scriptwriting	3
ENG228	Creative Writing	3
GAM260	Game Writing 1	3
GAM340	Game Writing 2	3
GAM420	Narrative Design and Leadership	3
ENG310	Classics of Western Drama	3
HUM228	Video Games and Society	3
HUM225 or HUM226 or HUM227	The Horror Film, or Science Fiction Cinema, or Film History	3
DAA240 or CS285	Introduction to 3D Modeling or C++ Programming: Object Oriented Programming	3
ENG220	Technical and Professional Writing	3
Concentration Elective	Elective Recommended by Academic Advisor	3
Electives - 9 credits		
Course Number	**Course Name**	**Credits**
Elective	Elective or Internship	3
Elective	Elective or Internship	3
Elective	Elective or Internship	3
General Education Courses for Non-Engineering Majors - 45 credits		
ENG229	Cog: The Publishing Experience ***(recommended)***	3
SSC180	Introduction to Psychology ***(recommended)***	3
Total 120 Credits		

BS IN GAME DESIGN ENGINEERING PROGRAM

The below curriculum replaces the curriculum listed on page 64.

BS in Game Design Engineering (GDE) Curriculum General Concentration		
Game Design Engineering Core Courses - 33 Credits		
Course Number	**Course Name**	**Credits**
GAM225	Introduction to Game Production	3
GAM220	Introduction to Game Storytelling (or GAM235 Game Usability if GAM235 already taken)	3
GAM295	Game Design 1	3
GAM355	Level Design 1	3
GAM376	Game Design 2	3
GAM415	Level Design 2	3
GAM480	Game Studio 1	3
GAM485	Game Studio 2	3
BUS110 or BUS125 or BUS270	Principles of Management, or Business Law, or Project Management	3
ART100	2D Design	3
CS100	Introduction to Scripting: Python	3
Game Design Engineering Concentration Courses – 48 credits		
Course Number	**Course Name**	**Credits**
ART110	Sketching	3
DAA106	Digital Imaging Concepts	3
DAA240	Introduction to 3D Modeling	3
DAA245	Texturing	3
DAA267	Character Rigging	3
MATH145	Calculus 2	4
MATH295	Discrete Mathematics	3
MATH290	Linear Algebra and Transformations	3
CS115	Web Programming: HTML5, CSS and JavaScript	3
CS285	C++ Programming: Object Oriented Programming	4
CS295	Data Structures and Algorithms	4
SWE375 or SWE376	Mobile Programming for iOS, or Mobile Programming for Android	3
CS445	Advanced C++ Programming	3
SWE447	GUI and Graphics Programming	3
SWE449	Tools Programming	3
Electives - 3 credits		
Course Number	**Course Name**	**Credits**
Elective	Elective or Internship	3
General Education Courses for Engineering Majors - 48 credits		
Total 132 Credits		

GENERAL EDUCATION (GE) DEPARTMENT

General Education course requirements as of Fall 2019:

PREPARATORY COURSES			
Preparatory Courses may be required in certain subjects. These courses DO NOT count towards degree completion			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG050	Grammar and Composition	3	None
MATH003	Intermediate Algebra	3	None
MATH050	Basic Algebra	3	None
MATH060	Success in College Algebra	2	Placement Exam
DAT050	Music Fundamentals	3	None
MATH116	Pre-Calculus (***Engineering Majors only***)	4	MATH003 or Placement Exam
BASIC SKILLS			
AREA: WRITTEN COMMUNICATION			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG100	English Composition	3	ENG050 or Placement Exam
AREA: ORAL COMMUNICATION			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG250	Speech and Oral Communication	3	ENG100
AREA: CRITICAL THINKING			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG105	Critical Reading, Thinking and Writing	3	ENG050 or Placement Exam
HUM100	Disruptive Imagination	3	None
HUMANITIES AND ARTS – 1 Course from each area			
AREA: ARTS			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG229	Cog: The Publishing Experience	3	ENG100
HUM120	The Nature and History of Western Art	3	None
HUM122	World Music	3	None
HUM125	Music in Western Culture	3	None
HUM225	The Horror Film	3	ENG100
HUM226	Science Fiction Cinema	3	ENG100
HUM227	Film History	3	ENG100
HUM228	Video Games and Society	3	ENG100
HUM230	History of Animation	3	ENG100
HUM329	COG2: Advanced Literary Studies	3	ENG100
AREA: LETTERS			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG227	Scriptwriting	3	ENG100
ENG228	Creative Writing	3	ENG100
ENG229	Cog: The Publishing Experience	3	ENG100
ENG280	Apocalypse and The American Imagination	3	ENG100
ENG285	Visions of American Dystopias	3	ENG100
HUM329	COG2: Advanced Literary Studies	3	ENG100
AREA: WRITTEN COMMUNICATION II			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG220	Technical and Professional Writing	3	ENG100
ENG227	Scriptwriting	3	ENG100
ENG228	Creative Writing	3	ENG100
ENG229	Cog: The Publishing Experience	3	ENG100
ENG280	Apocalypse and the American Imagination	3	ENG100
ENG285	Vision of American Dystopias	3	ENG100
ENG300	Essentials of Written Communication	3	ENG100

ENG310	Classics of Western Drama	3	ENG100
HUM225	The Horror Film	3	ENG100
HUM226	Science Fiction Cinema	3	ENG100
HUM227	Film History	3	ENG100
HUM228	Video Games and Society	3	ENG100
HUM230	History of Animation	3	ENG100
HUM329	COG2: Advanced Literary Studies	3	ENG100
HUM361	Contemporary Ethical Issues	3	ENG100
SSC225	Fashion and Culture	3	ENG100
SSC227	Architecture and World Societies	3	ENG100
SSC230	Human Behavior and Entrepreneurship	3	ENG100
SOCIAL SCIENCES – 1 Course from each area.			
AREA 1: HUMAN BEHAVIOR			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG280	Apocalypse and The American Imagination	3	ENG100
ENG285	Visions of American Dystopias	3	ENG100
HUM228	Video Games and Society	3	ENG100
HUM329	COG2: Advanced Literary Studies	3	ENG100
HUM361	Contemporary Ethical Issues	3	ENG100
SSC180	Introduction to Psychology	3	None
SSC225	Fashion and Culture	3	ENG100
SSC227	Architecture and World Societies	3	ENG100
SSC230	Human Behavior and Entrepreneurship	3	ENG100
AREA 2: COMPARATIVE SYSTEMS			
Course Number	**Course Name**	**Credits**	**Prerequisites**
HUM200	History of the Modern World	3	ENG100
SSC200	U.S. Government	3	ENG100
SSC332	Global Political Economics	3	ENG100
AREA 3: SOCIAL ISSUES			
Course Number	**Course Name**	**Credits**	**Prerequisites**
ENG280	Apocalypse and The American Imagination	3	ENG100
ENG285	Visions of American Dystopias	3	ENG100
HUM200	History of the Modern World	3	ENG100
HUM228	Video Games and Society	3	ENG100
HUM329	COG2: Advanced Literary Studies	3	ENG100
HUM361	Contemporary Ethical Issues	3	ENG100
SSC200	U.S. Government	3	ENG100
SSC225	Fashion and Culture	3	ENG100
SSC227	Architecture and World Societies	3	ENG100
SSC230	Human Behavior and Entrepreneurship	3	ENG100
MATHEMATICS AND SCIENCE for Non-Engineering Majors – 1 Course from area 1 and 2 from area 2. Example of Non-Engineering Majors: Digital Art and Animation (DAA), Game Design Art (GDA), Business Administration (BBA) and Audio & Music Production.			
AREA 1: MATHEMATICAL CONCEPTS AND QUANTITATIVE REASONING			
Course Number	**Course Name**	**Credits**	**Prerequisites**
MATH112	College Algebra	3	MATH050 or Placement Exam
MATH115	College Algebra and Trigonometry	3	MATH003 or Placement Exam
MATH116	Pre-Calculus	4	MATH003 or Placement Exam
MATH143	Calculus 1	4	MATH116
AREA 2: PHYSICAL AND BIOLOGICAL SCIENCES			
Course Number	**Course Name**	**Credits**	**Prerequisites**
SCI101	Basic Physics 1	3	MATH115, MATH116 or MATH143

SCI102	Basic Physics 2	3	MATH115, MATH116 or MATH143
SCI110	Science of Motion: Humans, Animals, Objectives	3	MATH115, MATH116, or MATH143
SCI130	Basic Concepts of Anatomy and Physiology	3	MATH115, MATH116 or MATH143
SCI145	College Physics 1	4	MATH143
SCI245	College Physics 2	4	SCI145

MATHEMATICS AND SCIENCES for Engineering Majors – 1 Course from area 1 and 2 from area 2.

Example of Engineering Majors: Computer Science (CS), Game Design Engineering (GDE), Audio Software Development & Engineering and Digital Arts Engineering (DAE).

AREA 1: MATHEMATICAL CONCEPTS AND QUANTITATIVE REASONING

Course Number	Course Name	Credits	Prerequisites
MATH143	Calculus 1	4	MATH116

AREA 2: PHYSICAL AND BIOLOGICAL SCIENCES

Course Number	Course Name	Credits	Prerequisites
SCI145	College Physics 1	4	MATH143
SCI245	College Physics 2	4	SCI145
SCI345	College Physics 3	3	SCI245

UPPER-DIVISION GENERAL EDUCATION – 1 Course from each area

AREA 1: 300-LEVEL GE COURSE

Course Number	Course Name	Credits	Prerequisites
ENG300	Essentials of Written Communication	3	Junior Status
ENG310	Classics of Western Drama	3	Junior Status
HUM329	COG 2: Advanced Literary Studies	3	ENG100
HUM361	Contemporary Ethical Issues	3	Junior Status
SSC332	Global Political Economics	3	Junior Status

AREA 2: SENIOR-LEVEL RESEARCH AND WRITING

Course Number	Course Name	Credits	Prerequisites
HUM400	Research and Writing Capstone Project	3	Senior Status

COURSE DESCRIPTIONS

The following Course Descriptions listed on pages 69-117 have been revised:

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
ART105	Color Theory	3	15	60	75

This course is an introduction to color theory. Color properties and color relationships are studied through formal exercises and creative thinking. Additive and subtractive color principles are addressed using a variety of media. Students build a vocabulary for analyzing and identifying color phenomena. Color use in a variety of fields are examined to understand the application of color theory.

Prerequisite: None

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
BUS299	Special Topic - Introduction to Business Analytics	3	45	0	45

Data analytics is defined as the extensive use of data to drive business decisions and strategies. In addition to exploring various analytical methodologies and techniques, students learn about the process of transforming data into actions through analysis and insights in the context of organizational decision making and problem solving. Data analytics include a range of activities, including getting familiar and applying quantitative and qualitative methods, including statistical analysis, forecasting and predictive modeling. This course highlights the value of data and the role these play in making effective business decisions.

Prerequisite: MATH115 or MATH116 or MATH143

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
CS299	Special Topic - Programming on Raspberry Pi	3	30	30	60

This course will introduce you to programming on Single Board Computers. In the course of time you will be familiar with Hardware (H/W), Software (S/W), Architecture, and Operating System (OS) concepts in the context of Raspberry Pi i3 (RPi3) and in general Single Computer

Prerequisite: Any programming course (CS100, CS110, CS212, CS285 or CS221)

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAA106	Digital Imaging Concepts	3	15	60	75

This course explores advanced image processing using image editing software and graphics tablets. Coursework addresses image creation and manipulation, color and contrast adjustment, compositing, image matching, and non-destructive editing techniques. An emphasis is placed on creating photorealistic illusions.

Prerequisite: None

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAA240	Introduction to 3D Modeling	3	15	60	75

Creation of 3D organic and industrial models using one or more software modeling packages. Topics include modeling construction using polygon and/or spline-based techniques, texture mapping, lighting, shading, and rendering. Students apply these techniques to the creation of 3D models.

Prerequisite: DAA106

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAA267	Character Rigging	3	15	60	75

Introduction to animation software modules with emphasis on character rigging techniques: joints, surface binding, articulation, forward and inverse kinematics (FK and IK), and hierarchical node structures. Students apply these techniques to develop 3D characters. Includes a summary of the animation software module, graph editor, setting key frames, and tangents for basic animation.

Prerequisite: DAA244

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAA270	Illustration 1	3	15	60	75

This course is designed to present the student with the fundamentals of illustration for professional application. Primarily, vector media are used. The course will cover illustration theory but will emphasize studio practice and skill development.

Prerequisite: ART105

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAA470	Illustration 2	3	15	60	75

Students explore personal style in illustration. Course focuses on development of a cohesive body of work. Symbolic and narrative concept development is central. Various digital applications will be used.

Prerequisite: DAA270

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAT203	Songwriting	3	15	60	75

Exercising creativity through songwriting in a project-based format. Discussion of musical techniques, sound choices, and growth models. All aspects of song writing are considered, from the initial creative spark to musical development and presentation, collaboration, making demos, and publishing. This course can be used to fulfill the requirement of dAT202 Music Theory 3.

Prerequisite: DAT107

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAT209	Music Composition	3	15	60	75

Music Composition will provide the technical and creative means to compose short-format musical pieces or sections of longer musical works. The emphasis will be on musical texture, form and tonal design. The analysis of existing compositional models will be a regular exercise and students will be exposed to diverse musical styles and idioms. Completed projects will be presented utilizing either digital or live performance. This course can be used to fultill the requirement of dAT207 Music Theory 4.

Prerequisite: DAT107

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAT212	Introduction to Game Audio	3	15	60	75

Application of tools and methods of audio asset production to interactive media. Creating and using an audio design document. Audio compression formats, audio middleware tools and game audio production practices. Adaptive audio techniques and design. This course is previously known as DAT212 Interactive Audio Production.

Prerequisite: DAT115

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAT285	Second-Year Portfolio	3	15	60	75

Introduction to audio and music industry career-related topics. Second Year Portfolio guides students through a series of exercises and reflections designed to educe a personal career narrative, silence inner negativity, encourage completion of projects and initiatives and identify one's entrepreneurial capacity. The course addresses career-related soft skills such as building a professional network, learning how to research positions and employers, writing an effective resume, performing well in interviews and client meetings, and negotiating rates, salaries and raises. The course culminates in the construction and presentation of a web-based professional portfolio that features the best of the student's audio and music production work to date. This course can be used to fulfill the requirements of DAT282 Professional Practies Seminar.

Prerequisite: Permission of the Department Director

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
DAT331	Programming for Audio Production	3	15	60	75

Introduction to the application of programming methods to audio production. This course introduces a limited set of programming language elements that can be immediately applied to audio production techniques. Representative audio programming techniques include simple and complex waveform generation, reversing a sample sequence, applying gain, changing mono to stereo, controlled clipping, bit crush, and others, as well as importing and exporting audio data from files. The course will also introduce basic MIDI messaging techniques. The course culminates in a final audio production programming project. This course can be used to fulfill the requirements of DAT150 Beginning Audio Programming.

Prerequisite: DAT210

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
ENT 525	LEGAL STRUCTURES, CONTRACTS AND RISK MANAGEMENT	3	45	0	**45**

This course is designed for students to understand the legal considerations involved with starting new business ventures or bringing an idea to market. In this course, students learn about business structures, key contract components, liability and risk management, non-disclosure agreements, intellectual property such as patents, copyrights, trademarks, trade secrets, etc., as well as federal and state employment and labor law. The course also provides an overview of taxation and other key regulations as they pertain to start-ups.

Prerequisite: None, Co-requisite: None

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
ENT 540	NEGOTIATION, SOURCES AND USES OF POWER	3	45	0	**45**

Negotiation is a process that involves building trust and relationships. This is also the starting point for influencing and shaping mutually beneficial agreements. Learn how to develop strategies to plan and execute successful negotiations while maintaining positive relationships with stakeholders. Coursework based on real-life workplace dynamics will help you assess your own skills and inclinations to increase your power and confidence in challenging situations. Strategies learned in this course may immediately be applied to your job and daily life.

Prerequisite: None, Co-requisite: None

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
ENT 570	PROJECT PORTFOLIO MANAGEMENT	3	45	0	**45**

This course examines the concepts and applied techniques for effective management of both long-term programs and projects. Project management principles and methodology based on the Project Management Book of Knowledge – PMBOK are provided with special focus on hands-on practical skills in planning, controlling, and coordinating individual and group efforts. Topics include an overview of project management, organization strategy, selecting and defining projects, developing project plans, resource management, project risk analysis, work breakdown structures, and project networks.

Prerequisite: None, Co-requisite: None

Course Number	Course Name	Credits	Lecture Hours	Practicum Hours	Total Contact Hours
ENT 591	ENTERPRENEURSHIP AND INNOVATION PRACTICUM 1	1.5	0	68	**68**

Part 1 of the capstone course. This capstone course provides opportunities to apply skills and knowledge learned in the program. This course enables students to gain real-life, practical experience in an entrepreneurial or innovative organization. Students, under the guidance of the practicum faculty team, will identify and work with a business, public or non-profit organization to address an identified business challenge, research a new opportunity, or achieve a defined organizational objective. Students may also work on their own innovative ideas or new business ventures.

Prerequisite: ENT520 and ENT530 and ENT535, Co- requisite: None

Course Number	Course Name	Credits	Lecture Hours	Practicum Hours	Total Contact Hours
ENT 592	ENTERPRENEURSHIP AND INNOVATION PRACTICUM 2	1.5	0	68	**68**

Part 2 of the capstone course. This capstone course provides opportunities to apply skills and knowledge learned in the program. This course enables students to gain real-life, practical experience in an entrepreneurial or innovative organization. Students, under the guidance of the practicum faculty team, will identify and work with a business, public or non-profit organization to address an identified business challenge, research a new opportunity, or achieve a defined organizational objective. Students may also work on their own innovative ideas or new business ventures.

Prerequisite: ENT591, Co- requisite: None

Course Number	Course Name	Credits	Lecture Hours	Practicum Hours	Total Contact Hours
ENT 596	ENTERPRENEURSHIP AND INNOVATION PRACTICUM 3	1.5	0	68	**68**

Part 3 of the capstone course. This capstone course provides opportunities to apply skills and knowledge learned in the program. This course enables students to gain real-life, practical experience in an entrepreneurial or innovative organization. Students, under the guidance of the practicum faculty team, will identify and work with a business, public or non-profit organization to address an identified business challenge, research a new opportunity, or achieve a defined organizational objective. Students may also work on their own innovative ideas or new business ventures.

Prerequisite: ENT592 and ENT525 and ENT570, Co- requisite: None

Course Number	Course Name	Credits	Lecture Hours	Practicum Hours	Total Contact Hours
ENT 597	ENTERPRENEURSHIP AND INNOVATION PRACTICUM 4	1.5	0	68	**68**

Part 4 of the capstone course. This capstone course provides opportunities to apply skills and knowledge learned in the program. This course enables students to gain real-life, practical experience in an entrepreneurial or innovative organization. Students, under the guidance of the practicum faculty team, will identify and work with a business, public or non-profit organization to address an identified business challenge, research a new opportunity, or achieve a defined organizational objective. Students may also work on their own innovative ideas or new business ventures.

Prerequisite: ENT596, Co- requisite: None

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
MATH050	Basic Algebra	3	45	0	45

Topics include: operation on integers, rational numbers, polynomials and exponents; algebraic expressions, one variable linear equations, straight line, graphs of linear equations, linear inequalities, and solving systems of linear equations in two variables; factoring linear and quadratic equations. (***Preparatory Course – Does not carry degree credit.***)

Prerequisite: None

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
MATH060	Success in College Algebra	2	30	0	30

This course serves as a preparation for MATH 112. In this course, students have the opportunity to develop skills needed to succeed in MATH 112, College Algebra, through group discussion and extra practice handouts. ***(Preparatory Course – Does not carry degree credit.)***

Prerequisite: None

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
MATH346	Applied Differential Equations	3	45	0	45

Mathematical solutions to ordinary linear differential equations through various techniques. Emphasis on scientific and engineering applications: mechanical, electrical, chemical, structural, thermal, and other systems. Damping and resonance, general and particular solutions, solutions of simultaneous equations, solutions by Laplace transforms and the use of series.

Prerequisite: MATH245 or Calculus 3

Course Number	Course Name	Credits	Lecture Hours	Laboratory Hours	Total Contact Hours
SSC332	Global Political Economics	3	45	0	45

Based on political, economic, and geopolitical study of contemporary processes of globalization. Comparative analysis of various economic and political systems. New realities of the transitional economic systems. Current economic and social development of West Europe, Russia and Eurasia, China, the Middle East, Latin America, and Africa in context of global economic, cultural, military, and political relations with the United States.

Prerequisite: ENG100