

Recommendation for New Programs 2018-2019

Animation for Film and Broadcast Advanced Certificate – 20 Credit Hours Business and Computer Technologies Division Digital Media Arts

Description: This program will help prepare students to pursue a career in film, advertising, commercial and other pre-rendered animation fields. Students will learn to model, animate, texture and render in a fashion appropriate for the industries. They will also learn basic compositing and visual effects.

Need/Job Demand:

Careers in film and broadcast animation are referenced under “Multimedia Artists and Animators” in the Occupational Outlook Handbook. The 2016 median wage was \$65,300/year. The industry is expected to grow faster than average with a 10% increase in jobs predicted between 2016 and 2026.

Student Learning Outcomes:

1. Create custom assets for the pre-rendered animation fields such as film, advertising and commercials.
2. Create appropriately lit and textured renders for use in film, advertising or other commercial fields or pre-rendered animation fields.

Curriculum Review:

Reviewed by the Curriculum and Assessment Committees 11/16/17

Wage Data:

The 2016 median wage for Multimedia Artists and Animators was \$65,300/year. ¹

Program Requirements:

<u>Course</u>		<u>Credits</u>
ART 127	Life Drawing I	4
ANI 250	3D Animation II	4
ANI 235	Introduction to Compositing and Visual Effect	4
VID 276	Video Graphics I	4
ANI 260	3D Animation III	4
	Total Credits	20

¹ Occupational Outlook Handbook Bureau of Labor Statistics

Recommendation for New Programs 2018-2019

Animation for Game Art Advanced Certificate – 19 Credit Hours Business and Computer Technologies Division Digital Media Arts

Description: This program focuses on the growing electronic game industry. Students will build on their 3D animation skills and learn how to create game levels and custom game assets. Students will create basic artificial intelligence entities and triggers as well as in-game cinematics. Students will learn how to package a game for distribution.

Need/Job Demand:

Careers in game art animation are referenced under “Multimedia Artists and Animators” in the Occupational Outlook Handbook. The industry is expected to grow faster than average with a 10% increase in jobs predicted between 2016 and 2026.

Student Learning Outcomes:

1. Using 3-D animation, apply game design techniques, skills and strategies to create custom game levels.
2. Using 3-D animation, apply game design techniques, skills and strategies to create custom game assets.

Curriculum Review:

Reviewed by the Curriculum and Assessment Committees 11/16/17

Wage Data:

The 2016 median wage for Multimedia Artists and Animators was \$65,300/year. ²

Program Requirements:

<u>Course</u>		<u>Credits</u>
ANI 180	Introduction to Game Level Design	4
ANI 190	History of Game Design	3
ANI 240	Advanced Game Level Design	4
ANI 250	3D Animation II	4
ANI 260	3D Animation III	4
	Total Credit Hours	19

² Occupational Outlook Handbook Bureau of Labor Statistics

Recommendation for New Programs 2018-2019

**Pre-Engineering Science Transfer (ASPET)
Associate in Science (AS) – 61 Credit Hours
Arts and Sciences Division
Physical Sciences**

Description: This program addresses the increasing need for students pursuing STEM fields – specifically engineering. Students in this program will have their coursework pre-planned with specific coursework laying the groundwork for successful transfer to a four-year engineering program.

Need/Job Demand:

This program is designed for students to transfer to a four-year college.

Student Learning Outcomes:

1. Transfer successfully to a four-year engineering program.
2. Apply scientific principles and mathematical calculations to solve problems and draw reasonable conclusions.

Curriculum Review:

Reviewed by the Curriculum and Assessment Committees 10/26/17

Wage Data:

This program is designed for students to transfer to a four-year college.

Program:

Semester 1		Credits
CEM 111	General Chemistry I	4
ENG 111	Composition I	4
MTH 191	Calculus I *	5
Elective	Social Science Elective	3
	Total	16
Semester 2		
CEM 122	General Chemistry II	4
ENG 226	Composition II	3
MTH 192	Calculus II	4
Elective	Arts and Humanities Elective	3
	Total	14

Recommendation for New Programs 2018-2019

Semester 3		
Elective	Social Science Elective	3
Restricted Elective	Math Restricted Elective	4
CPS 171	Introduction to Programming with C++	4
PHY 211	Analytical Physics I **	5
	Total	16
Semester 4		
COM 101	Fundamentals of Speaking	3
Restricted Elective	Math Restricted Elective	4
Elective	Arts and Humanities Elective	3
PHY 222	Analytical Physics II	5
	Total	15
	Total Program Credits	61

* Students below Math Level 7 will need to take prerequisite courses

**Students who haven't completed a year of High School Physics will need to complete PHY 111 and PHY 122

*** Restricted Math Electives: MTH 197, MTH 293 or MTH 295

Recommendation for New Programs 2018-2019

**Engineering Technologist – Manufacturing
Associate in Applied Science (AAS) – 64 Credit Hours
Advanced Technologies and Public Service Careers Division
and
Arts and Sciences Division
Advanced Manufacturing Technology**

Description:

Students in this program will demonstrate proficiency in the operation of various types of automated design/machine tool equipment. Competencies in design, programming, and materials and machine processing will be developed. In addition, students will hone skills in the manufacturing and troubleshooting of mechanical parts and the setup and operation of advanced manufacturing systems. Students will apply problem-solving skills learned in the program to create innovative solutions for real-world manufacturing challenges in preparation for entry-level Engineering Technologist or Technician positions.

Need/Job Demand:

Employers in multiple manufacturing sectors are experiencing a severe gap between the supply of skilled workers and the demand for workers on the Engineering Technologist/Technician level in organizations. Indeed.com currently lists over 18,000 job postings/openings around the United States in this field, and over 1,500 in Michigan. The Bureau of Labor Statistics anticipates an average projected growth (5 - 9%) between 2016 and 2026 for Manufacturing Engineering Technologists.³ Michigan employment data predicts an 11% increase in jobs annually.

Student Learning Outcomes:

1. Use multiple processes, materials and types of equipment in the creation of a capstone project.
2. Develop systems to design, machine, assemble and create a capstone project.

Curriculum Review:

Reviewed by the Curriculum and Assessment Committees 1/4/18

Wage Data:

The Bureau of Labor Statistics reported the median salary for a Manufacturing Engineering Technologist in 2016 was \$29.96 hourly or \$62,330 annually.³

³ Occupational Outlook Handbook Bureau of Labor Statistics

Recommendation for New Programs 2018-2019

Program:

Semester 1		
NCT 110	Introduction to Computerized Machining (CNC) - II	2
ROB 101	Robotics I - I	2
MTT 102	Machining for the Technologies	2
MEC 100	Materials and Processes	3
MEC 101	3D Modeling and Blueprint Reading	2
Total		13
Semester 2		
MTH 178	General Trigonometry *	3
COM 101	Fundamentals of Speaking	3
MTT 111	Machine Shop Theory and Practice	4
NCT 120	Introduction to 2D CAD CAM Programming and Applications	2
NCT 121	Manual Programming and NC Tool Operation	4
Total		16
Semester 3		
PHY 111	General Physics I	4
ART 150	Monuments and Cultures	3
NCT 123	2D CAD CAM CNC Programming for Mills and Lathes	2
NCT 221	Advanced Manual Programming and NC Tool Operation	4
Total		13
Semester 4		
ECO 110	Introduction to Economics	3
NCT 255	Probes, Macros and Conversational Programming for CNC	4
NCT 259	MasterCam 2D and 3D CAM CNC Programming for Mills	4
Total		11
Semester 5		
ENG 107	Technical Writing I	3
MEC 120	3D-Printing: Machine, Process and Innovation	4
NCT 269	4 and 5 Axis Machining for the CNC Vertical Mills	4
Total		11
Minimum Credits Required for the Program		64
* MTH 178 requires academic math level 5 or MTH 176 minimum grade "C"; may enroll concurrently		