Definition

The certificate program in Advanced Manufacturing includes coursework to help prepare students for CAD and CAM use in industry. Students who complete this program will have the necessary skill set to be employed by industry and in a variety of positions. Current engineers/engineering students will find the program helpful for advanced skill building. Technicians will use this program to strengthen their skill set and technical communications skills.

Staff

To access faculty and staff, dial (661) 722-6300, then the 4-digit extension.

Dean:
Dr. Maria Clinton   ext. 6327
Administrative Assistant:
Mari-Ali Baiza   ext. 6327
Clerical Assistant III:
Leyla Recinos   ext. 6327
Department Chair:
Joe Owens   ext. 6508
Adjunct Faculty:
Joyce Ly   ext. 2496

Program Description

The administration of justice courses provide the student with a broad base of knowledge and proficiency in the general area.

Students must receive a minimum grade of "C" or better in all required core courses and the specific courses listed as program electives in order to qualify for the degree or certificate.

Career Options

Mechanical Drafter
Industrial Engineering Technicians
Machinist (apprentice)
Tool Setter
Sheet Metal Worker

Program Learning Outcomes

Computer Aided Manufacturing
1. Develop machine code for technical solid models to be used with various forms of CNC equipment.

Computer Aided Drafting in Solidworks
1. Design parts, drawings, and assemblies for the intent of manufacturing and assembly.

Computer Aided Drafting in CATIA/3DExpierience
1. Design parts, drawings, and assemblies for the intent of manufacturing and assembly.

Computer Aided Drafting and Manufacturing
1. Develop a solid model from concept to physical object through the use of CAD and CAM tools.

Locally Approved Certificate

Computer Aided Manufacturing

The following courses (6 units) are required for the certificate.

Required Courses:	units
AM 145, Introduction to CAM I	3
AM 245, Introduction to CAM II	3
	Total units 6

Computer Aided Drafting in Solidworks

The following courses (6 units) are required for the certificate.

Required Courses:	units
AM 135B - 3D, Solid Modeling I using Solidworks	3
AM 235B - 3D, Solid Modeling II using Solidworks	3
	Total units 6

Computer Aided Drafting in CATIA/3DExperience

The following courses (6 units) are required for the certificate.

Required Courses:	units
AM 135A -3D, Solid Modeling I	3
AM 235A -3D, Solid Modeling II using CATIA/3DExperience	3
	Total units 6

Computer Aided Drafting and Manufacturing

The following courses (6 units) are required for the certificate.

Required Courses:	units
AM 100, Geometric Dimensioning and Tolerancing (GD&T)	3
AM 105, Introduction to 2D CAD	3
AM 135A, Solid Modeling I using CATIA/3DExperience	3
AM 135B, 3D Solid Modeling I using Solidworks	3
AM 145, Introduction to CAM I	3
AM 235A, 3D Solid Modeling II using CATIA/3DExperience	3
AM 235B, 3D Solid Modeling II using Solidworks	3
AM 245, Introduction to CAM II	3
	Total units 18

Advanced Manufacturing Courses

AM 100 GEOMETRIC DIMENSIONING AND TOLERANCING (GD&T)

3 units
3 hours weekly

This course covers the application and interpretation of Geometric Dimensioning and Tolerancing (GD&T) as prescribed by the American Society of Mechanical Engineers, ASME Y14.5 2009 standard. GD&T is a technical language used for mechanical engineering drawings composed of symbols that are used to communicate geometry requirements for associated features on components and assemblies.(AVC)

AM 105 INTRODUCTION TO 2D CAD

3 units
6 hours weekly
(1.5 hours lecture, 4.5 hours lab)
This course explores the use of a 2D CAD environment. 2D CAD is the fundamental basis for advanced CAD programs. Students will learn how to use sketching tools, dimensioning, and drawing layouts in preparation for 3D CAD programs. (CSU, UC, AVC)

AM 135A 3D SOLID MODELING I USING CATIA/3D EXPERIENCE

3 units
6 hours weekly
(1.5 hours lecture, 4.5 hours lab)
The course explores the use of a 3D CAD environment. Students will learn how to design solid models. Topics include the development of visualization skills; orthographic projections; mechanical dimensioning and tolerancing practices; and design process. (CSU, UC, AVC)

AM 135B 3D SOLID MODELING I USING SOLIDWORKS

3 units
6 hours weekly
(1.5 hours lecture, 4.5 hours lab)
The course explores the use of a 3D CAD environment. Students will learn how to design solid models. Topics include the development of visualization skills; orthographic projections; mechanical dimensioning and tolerancing practices; and design process. (CSU, UC, AVC)

AM 145 3D INTRODUCTION TO CAM I

3 units
6 hours weekly
(1.5 hours lecture, 4.5 hours lab)
This course explores the basic use of a CAM environment. Students will learn how to setup basic toolpaths for solid models. Topics include basic tool choices, toolpath choices, G-code. (AVC)

AM 235A 3D SOLID MODELING II USING CATIA /3D EXPERIENCE

3 units
6 hours weekly
(1.5 hours lecture, 4.5 hours lab)
This is a secondary course that explores the intermediate use of 3D CAD software. Topics such as parametric modeling, surfaces, and designing with intent will be covered. (CSU, UC, AVC)

AM 235B 3D SOLID MODELING II USING SOLIDWORKS

3 units
6 hours weekly
(1.5 hours lecture, 4.5 hours lab)
This is a secondary course that explores the intermediate use of 3D CAD software. Topics such as parametric modeling, surfaces, and designing with intent will be covered. (CSU, UC, AVC)

AM 245 INTRODUCTION TO CAM II

3 units
6 hours weekly
(1.5 hours lecture, 4.5 hours lab)
This course explores a more in depth use of a CAM environment. Students will learn how to setup 3D toolpaths for solid models. Topics include advanced tool choices, toolpath choices, G-code. (AVC)