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

Please dial (661) 722-6300, then the 4 digit extension.

Division:

Dr. Maria Clinton, Dean	x.6327
Mari-Ali Baiza, Administrative Assistant	x.6327
Leyla Recinos, Clerical Assistant III	x.6327
Joe Owens, Department Chair	x.6508

Adjunct Faculty:

Samer Al Salek	2004
Amanda De La Torre	2006

Career Options

Mechanical Drafter	Machinist (apprentice)
Industrial Engineering Technician	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 certificate program includes coursework to help prepare students for CAM use in industry. Students who complete this program will have the necessary skills to be employed by industry and in a variety of positions. Current engineers will find the program helpful for developing design intent. Technicians will use this program to become a proficient CAM technician to couple with CNC machines.

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

Computer Aided Drafting in Solidworks

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

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

Computer Aided Drafting in CATIA/3DExperience

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

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

Computer Aided Drafting and Manufacturing

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

Required Courses (18 units):	**units**
AM 100, Geometric Dimensioning & Tolerancing (GD&T)	3
AM 105, Introduction to 2D CAD	3
AM 135A, Solid Modeling I using CATIA/3DExperience ***or*** 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 ***or*** AM 235B, 3D Solid Modeling II using Solidworks	3
AM 245, Introduction to CAM II	3
	Total 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 lecture, 4.5 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 lecture, 4.5 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 lecture, 4.5 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 lecture, 4.5 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 lecture, 4.5 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 lecture, 4.5 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 lecture, 4.5 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)