

COMPUTER AIDED DESIGN - MECHANICAL - ASSOCIATE IN SCIENCE

Plan Code: 2913

Students learn entry-level job skills in mechanical drafting and design. The Associate Degree will prepare students for a mechanical design-related career, and appropriate course selection will facilitate transfer to a professional degree program at a CSU/UC or private institution.

Program Student Learning Outcomes

- Demonstrate the ability to attain the Institutional Student Learning Outcomes (ISLOs).
- Establish mastery of basic knowledge and skills and apply advanced technologies relevant to entering the mechanical drafting and design field at an entry or advanced level.
- Develop career awareness, planning, employability skills, work habits, and the foundational knowledge necessary for success in the workplace.
- Possess the necessary technical knowledge and communication skills to identify, articulate and solve problems pertaining to the industrial manufacturing environment and perform tasks required within the mechanical design drafting professions.

Program Requirements

This degree requires the completion of General Education coursework plus the following:

Code Number	Course Title	Units
REQUIRED COURSES		
CAD 50	Mechanical Drafting, Introduction	2
CAD 51	Mechanical Drafting, Intermediate	2
CAD 52	CAD/CAM	2
CAD 60	Geometric Dimensioning and Tolerancing	3
CAD 202	AutoCAD Fundamentals	2
CAD 203	AutoCAD II, Advanced Concepts	2
CAD 220	Introduction to CATIA	2
CAD 221	Intermediate CATIA	2
ETEC 10	Introduction to Engineering Technology	1
Required Subtotal		18
Complete one of the following: ¹		19-39
LBCC General Education (Plan A) (https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-a/)		
CSU GE Breadth (Plan B) (https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-b/)		
IGETC Pattern (Plan C) (https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-c/)		
Electives (as needed to reach 60 degree-applicable units) ²		
Minimum Degree Total		60

¹ Units for the major may be double-counted for LBCC GE, CSU GE, or IGETC; see counselor for limitations.

² Elective units from course(s) numbered 1-599, if needed, to reach 60 degree-applicable units.

COMPUTER AIDED DESIGN – MECHANICAL, CORE SKILLS - CERTIFICATE OF ACHIEVEMENT

Plan Code: 3907

The Core Skills Certificate will prepare students for an entry-level position as a mechanical drafter trainee in a variety of design professional settings and will serve as a foundation for specialization.

Program Student Learning Outcomes

- Construct engineering detail and working drawings incorporating tolerances and fits for manufacturing.

Program Requirements

Code Number	Course Title	Units
REQUIRED COURSES		
CAD 50	Mechanical Drafting, Introduction	2
CAD 51	Mechanical Drafting, Intermediate	2
CAD 52	CAD/CAM	2
CAD 60	Geometric Dimensioning and Tolerancing	3
CAD 202	AutoCAD Fundamentals	2
CAD 203	AutoCAD II, Advanced Concepts	2
CAD 220	Introduction to CATIA	2
CAD 221	Intermediate CATIA	2
ETEC 10	Introduction to Engineering Technology	1
Total Units		18

AUTOCAD I, FUNDAMENTALS - CERTIFICATE OF ACCOMPLISHMENT

Plan Code: 4015

The Certificate of Accomplishment in AutoCAD I, Fundamentals (108 Hours) is the first in a series of 3 certificated classes leading to a cumulative certificate-CAD Professional (324 Hours). This entry-level AutoCAD drafting course is aimed at individuals with a drafting background employed in engineering, architecture, interior design and other related fields who wish to upgrade their skills in the area of Computer Aided Drafting (CAD).

Program Student Learning Outcomes

- Construct architectural and mechanical drawings using fundamental drafting principles.

Program Requirements

Code Number	Course Title	Units
REQUIRED COURSES		
CAD 202	AutoCAD Fundamentals	2
Total Units		2

AUTOCAD II, ADVANCED - CERTIFICATE OF ACCOMPLISHMENT

Plan Code: 4016

The Certificate of Accomplishment in AutoCAD II, Advanced Certificate (108 Hours) is the second in a series of 3 certificated classes leading to a cumulative certificate - CAD Professional (324 Hours). This intermediate level AutoCAD drafting course covering 3D modeling is aimed at individuals with a drafting background employed in engineering, architecture, interior design and other related fields who wish to upgrade their skills in the area of Computer Aided Drafting (CAD).

Program Student Learning Outcomes

- Construct architectural and mechanical drawings using fundamental drafting principles.

Program Requirements

Code Number	Course Title	Units
REQUIRED COURSES		
CAD 203	AutoCAD II, Advanced Concepts	2
Total Units		2

AUTOCAD III, VISUALIZATION, RENDERING, ANIMATION - CERTIFICATE OF ACCOMPLISHMENT

Plan Code: 4017

The Certificates of Accomplishment in AutoCAD III, Visualization, Rendering, Animation (108 Hours) is the third in a series of 3 certificated classes leading to a cumulative certificate - CAD Professional (324 Hours). Advanced 3D modeling, rendering and animation concepts are explored utilize AutoCAD and one or more of the following – Sketchup, REVIT Architecture, 3D Studio MAX Software and/or other similar software.

Program Student Learning Outcomes

- Create digital 3D models of objects.

Program Requirements

Code Number	Course Title	Units
REQUIRED COURSES		
CAD 204	3D Visualization/Animation	2
Total Units		2

CAD PROFESSIONAL - CERTIFICATE OF ACCOMPLISHMENT

Plan Code: 4018

Successful completion of a series of 4 certificated classes allows students to apply for and be awarded the Certificate of Accomplishment in CAD Professional.

Program Student Learning Outcomes

- Construct architectural and mechanical drawings and 3D models.

Program Requirements

Code Number	Course Title	Units
REQUIRED COURSES		
CAD 50	Mechanical Drafting, Introduction	2
CAD 51	Mechanical Drafting, Intermediate	2
CAD 202	AutoCAD Fundamentals	2
CAD 203	AutoCAD II, Advanced Concepts	2
Total Units		8