COMPUTER ASSISTED DESIGN (CAD)

CAD 1075 | Special Topics
Provides students with a vehicle to pursue in depth exploration of special topics of interest.

Prerequisite: Chair approval

Note: Special topics courses range from 0-12 credits and vary in learning type. Please see your program chair for more information about your options.

CAD 1101 | Computer Aided Drafting I
Lecture/Lab Credit: 3

Focuses on basic computer aided drafting skills using the latest release of the AutoCAD software. Includes file management, Cartesian coordinate system & dynamic input, drawing templates, drawing aids, linetype and lineweights, layer usage, drawing & editing geometric objects, polylines & splines, array, text applications, creating tables, basic dimensioning, and Help access.

CAD 1102 | Computer Aided Drafting II
Lecture/Lab Credit: 3

Focuses on intermediate to advanced computer aided drafting skills using the latest release of the AutoCAD software. Includes blocks, wblocks & dynamic blocks, hatching, isometric drawings, advanced dimensioning and dimension variables, layouts, paper space and viewports, templates, external references, attributes, raster images, sheet sets and printing/plotting.

Corequisite: CAD 1101

CAD 1110 | Sketchup
Lecture/Lab Credit: 3

Focuses on the understanding of basic concepts of the software program SketchUp. Students will learn how to draw and extrude building shapes, stairs, roofs, and interiors utilizing advanced modeling techniques.

CAD 1115 | Rhino
Lecture/Lab Credit: 3

Introduces the Rhino modeling platform, systems and plug-ins and creation and modification of 3-D objects and scenes. Focuses on NURBS systems, Rhino plug-ins, and Rhino workflow processes. Examines how Rhino is used in various industries. Prepares students to create physical models and renderings using Rhino.

CAD 2080 | Internship
Internship Credit: 6

Provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

Prerequisite: Chair approval

CAD 2089 | Capstone
Lecture/Lab Credit: 6

A demonstrated culmination of learning within a given program of study.

Prerequisite: Chair approval

CAD 2204 | AutoCAD Architecture
Lecture/Lab Credit: 3

Provides students with the software application training in Architectural construction drawings using industry standard software. Includes creating floorplans, sections, elevations and details necessary to produce 2D and 3D Architectural construction drawings.

CAD 2220 | Revit Architecture
Lecture/Lab Credit: 3

Introduces students to the AutoDesk Revit Architecture software. Examines the Building Information Modeling approach to 2D and 3D architectural construction documents. Covers the creation of floorplans, elevations, sections, 3D models, perspective Renderings and Walkthroughs with this software application.

CAD 2221 | Advanced Revit Architecture
Lecture/Lab Credit: 3

Focuses on the advanced applications of the AutoDesk Revit Architecture software. Includes Family Editing, Topographic Site Plans, Worksharing, Phases, Advanced Scheduling, Custom Annotation, and Presentation Techniques.

Prerequisite: CAD 2220 with a grade of C or better

CAD 2330 | AUTODESK Navisworks
Lecture/Lab Credit: 3

Introduces students to the BIM management software Autodesk Navisworks. Multiple BIM models will be combined for the purposes of scheduling and clash detection.

Prerequisite: CAD 2220 with a grade of C or better

CAD 2455 | SolidWorks/Mechanical
Lecture/Lab Credit: 3

Introduces parametric feature-based solid modeling 3D concepts to build confidence in 3D thinking and progresses to three-dimensional parameters. The student learns to construct, modify, and manage complex parts in 3D space as well as to produce 2D drawings from the 3D models.

CAD 2456 | Advanced Solidworks
Lecture/Lab Credit: 3

Introduces advanced applications of the 3D parametric software SolidWorks. Focuses include management of design data, advanced assembly, analysis of model creations, documentation of bill of materials and parts lists, rendering, animation, and dynamic simulation and testing a model assembly.

Prerequisite: CAD 2455 with a grade of C or better

CAD 2458 | Introduction to Pro Engineer/Basics
Lecture/Lab Credit: 3

Introduces basic Pro/Engineer software and its operations such as part creation, assembly creation, and drawing creation. Pro/Engineer is a 3D Parametric Solid Modeling program.

CAD 2460 | Inventor I/Autodesk
Lecture/Lab Credit: 3

Introduces basic Inventor applications of non-parametric modeling, three-dimensional parametric modeling and visualization & animation of 3D modeling. The student learns to construct, modify, and manage complex models in 3D space. Produces 2D drawing assemblies from 3D models.

CAD 2461 | Advanced Inventor
Lecture/Lab Credit: 3

This course focuses on the advanced applications of the parametric software Inventor. Includes management of design data, advanced assembly and analysis of model creations and constraints, documentation of bill of materials and parts lists, rendering and animation and testing a model assembly.

Prerequisite: CAD 2460 with a grade of C or better, or department chair permission

CAD 2464 | Fusion/AutoDesk
Lecture/Lab Credit: 3

Introduces students to the AutoDesk Revit Architecture software. Examines the Building Information Modeling approach to 2D and 3D architectural construction documents. Students will create floorplans, elevations, sections, 3D models, perspective renderings and animations with this software application.

Corequisite: AEC 1200 or CAD 1100 or CAD 1101 or MAC 1002 or WEL 1006

Note: CCD does not offer AEC 1200 or CAD 1100. Please see your advisor for more information.

CAD 2540 | 3DS Max
Lecture/Lab Credit: 3

Introduces 3D model creation and editing, rendering and animation using the AutoDesk 3DS Max software. Focuses on 3D geometry, texture mapping, lighting, camera placement, shading, photo-realistic rendering, animation techniques, and walk through animations.

CAD 2660 | 3D Printing/Additive Manufacturing
Lecture/Lab Credit: 3

Provides the student with the ability to blend the virtual and real design worlds together through the use of 3D Scanning, 3D CAD Modeling, and 3D Printing.

Prerequisite: CAD 2460 with a grade of C or better

CAD 2694 | 3D Scanning and Modeling
Lecture/Lab Credit: 4

Exposes students to 3D scanning and modeling. Students will manipulate various types of 3D scanning technology and create CAD models using scanning software and other CAD programs.

Prerequisite: CAD 2400 or CAD 2460 or CAD 2455 or CAD 2464 with a grade of C or better

Note: CCD does not offer CAD 2400. Please see your advisor for more information.