COMPUTER AIDED DESIGN AND DRAFTING TECHNOLOGY (CADD)

CADD
CADD 101
2 hours of lab
Combination of off-campus field trips to a variety of businesses and on-campus test-drives of several core CADD software applications seen on the field trips. Focus on exposure and orientation to core CADD software applications, and development of an educational plan. [GE]

CADD Orientation
CADD 101
1 Credit/Unit
2 hours of lab
Prerequisite: CADD 101 (grade of "C" or higher)
Combination of off-campus field trips to a variety of businesses and on-campus test-drives of several core CADD software applications seen on the field trips. Focus on exposure and orientation to core CADD software applications beyond CADD 101 and development of a career plan. [GE]

CADD Careers
CADD 102
1 Credit/Unit
2 hours of lab
Prerequisite: CADD 101 (grade of "C" or higher)
Combination of off-campus field trips to a variety of businesses and on-campus test-drives of several core CADD software applications seen on the field trips. Focus on exposure and orientation to core CADD software applications beyond CADD 101 and development of a career plan. [GE]

Basic SketchUp
CADD 110
4 Credits/Units
2 hours of lecture / 5 hours of lab
Basic operations of the current version of SketchUp. Topics include screen features, drawing and editing 3D objects, using and applying material to surfaces, opening and saving files, and using AutoCAD drawing file data. Recommended for anyone comfortable using a PC. [GE]

Basic Rhinoceros
CADD 120
4 Credits/Units
2 hours of lecture / 5 hours of lab
Basic operation of Rhinoceros, a 3D surface modeling software of interest to students in engineering, industrial design, and graphic design. Creating and editing of curves, surfaces, solids, and textures and lighting effects. Includes the use of plug-ins for rendering. Recommended for anyone comfortable using a PC. [GE]

Basic Microstation
CADD 130
4 Credits/Units
2 hours of lecture / 5 hours of lab
Basic operations of the current version of MicroStation. Covers screen features, command terminology, drawing and editing objects, working with 2D and 3D, using reference files, opening and saving drawing files, and printing. Recommended for anyone comfortable using a PC. [GE]

Basic AutoCAD
CADD 140
4 Credits/Units
2 hours of lecture / 5 hours of lab
Basic operations of the current version of AutoCAD. Screen features, drawing and editing objects, working with 2D, using both model space and layouts, dimensioning and dimension styles, using blocks, attributes, and xrefs, opening and saving files, and using templates. Recommended for anyone comfortable using a PC. [GE]

Architectural Drafting
CADD 141
4 Credits/Units
2 hours of lecture / 5 hours of lab
Prerequisite: (CADD 140 or ENGR 140) and ENGR 113 (grades of "C" or higher)
Beginning foundations of architectural drafting using AutoCAD Architecture. Topics include terminology, architectural symbols and standards, line weights and layer management. A standard multi-sheet drawing set for a residence will be developed and will include a site plan, foundation plan, floor plan, and elevations, and related basic residential construction processes. [GE]

Civil Drafting
CADD 143
4 Credits/Units
2 hours of lecture / 5 hours of lab
Prerequisite: (CADD 140 or ENGR 140) and ENGR 113 (grades of "C" or higher)
Beginning foundations of civil drafting concepts and practices. Introduction to terminology, symbols, multiple use blocks and details, origins and uses of survey data, contours, alignments, and profiles to describe/define project objects. Topics will include basic site considerations, basic types and construction of roads, site drainage, sewer systems, potable water, walks, driveways, and fire access. Class projects will use various applications to achieve data tables and calculations; drafting is not platform dependent but is biased towards use of AutoCAD. [GE]

Basic Solidworks
CADD 150
4 Credits/Units
2 hours of lecture / 5 hours of lab
Parametric solids modeling with SolidWorks, covering the breadth of the software at a basic level. Create part, assembly, and drawing files, including design tables and multiple configurations. Recommended for anyone comfortable using a PC. [GE]

Mechanical Drafting
CADD 154
4 Credits/Units
2 hours of lecture / 5 hours of lab
Prerequisite: ENGR 113 and (CADD 150 or ENGR 150) (grades of "C" or higher)
Mechanical drafting using SolidWorks. Focus on detailed control in annotating and producing drawings of parts and assemblies. Includes components in mechanical print reading. [GE]

Intermediate Solidworks - Top Down Design
CADD 155
4 Credits/Units
2 hours of lecture / 5 hours of lab
Prerequisite: CADD 150 or ENGR 150 (grade of "C" or higher)
System design using SolidWorks in the context of an assembly. Focus on complex modeling of parts and assemblies. [GE]

Introduction To CAM
CADD 160
2 Credits/Units
1 hours of lecture / 2 hours of lab
Introduction to CAM software for CNC machine operation. Recommended for anyone comfortable using a PC. [GE]
Solidworks For The Trades
CADD 161 3 Credits/Units
1 hours of lecture / 4 hours of lab

Prerequisite: Concurrent enrollment in, or completion of WELD 110 or MACH 241 (grades of "C" or higher)
Intended for machinists, welders, and others involved directly in manufacturing. Provides a core foundation of the use of the SolidWorks CADD application. Focuses on part modeling with an emphasis on evaluation of part models for geometric and other properties. Also includes sheet metal part modeling and file export for subsequent CNC manufacturing.

Basic Revit: Residential
CADD 170 4 Credits/Units
2 hours of lecture / 5 hours of lab
Basic operations of the current version of Revit, as used in residential architectural design and drafting. Topics include screen features, drawing and editing 3D objects, using sheets and views, file management, and using pre-existing AutoCAD drawing file data. Recommended for anyone comfortable using a PC. [GE]

Revit: Commercial
CADD 171 4 Credits/Units
2 hours of lecture / 5 hours of lab

Prerequisite: CADD 170 (grade of "C" or higher)
Revit Commercial will continue to build on the basic tools covered in the Basic Revit Residential course. This is a project-based course and will focus on building a commercial office building using the basic tools, but also focusing on more advanced tools required to complete a commercial project. Topics include: grids, reflected ceiling plans, interior and exterior elevations sections, interior design, schedules, site rendering, view templates, construction documents setup and work-sharing. [GE]

Advanced Revit
CADD 172 4 Credits/Units
2 hours of lecture / 5 hours of lab

Prerequisite: CADD 171 (grade of "C" or higher)
Continuation of Revit training beyond CADD 170 and CADD 171. Focuses on the following aspects of Revit: family creation, templates, advanced visibility, filters, schematics, and parameters and constraints.

Cooperative Work Experience
CADD 199 1-6 Credits/Units
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. [GE]

Presentation Graphics
CADD 207 4 Credits/Units
2 hours of lecture / 5 hours of lab

Prerequisite: CADD 141, CADD 143 or CADD 154 (grade of "C" or higher)
Concepts of design and graphic principles for developing a variety of visual presentations by applying different graphic forms used for advertising, and showcasing graphic skills by producing portfolio quality work. [GE]

Architectural Drafting
CADD 210 3 Credits/Units
1 hours of lecture / 4 hours of lab

Prerequisite: CADD 141 (grade of "C" or higher)
Continuation of architectural drafting from CADD 141, with a focus on refinement and using industry standards. Create a drawing set for a residential structure, with review by local professionals. [GE]

Autocad Customization
CADD 214 3 Credits/Units
1 hours of lecture / 4 hours of lab

Prerequisite: CADD 142 (grade of "C" or higher)
Customizing buttons and toolbars, using AutoLISP to create new AutoCad commands. Introduction to custom dialog boxes. [GE]

Technical Statics & Strengths
CADD 215 3 Credits/Units
2 hours of lecture / 2 hours of lab

Prerequisite: College Trigonometry (MATH 102 or MATH 103) grade of "C" or higher, and concurrent enrollment in CADD 215 and CADD 216
Introduction to technical statics and strength of materials. Topics introduced include 2D force and moment systems, static equilibrium, mechanical properties, stress and strain, beams and trusses, buckling, and moment of inertia. [GE]

Integrated Computational Design
CADD 216 3 Credits/Units
1 hours of lecture / 4 hours of lab

Prerequisite: College Trigonometry (MATH 102 or MATH 103) and (CADD 150 or ENGR 150) (grade of "C" or higher)
Use of computational SolidWorks Simulation CADD applications in the design and analysis of engineering problems. Also, use of integrated surface/solid modeling techniques, motion analysis, and use of CADD in documentation of designs and analyses. [GE]

Civil Drafting
CADD 230 3 Credits/Units
1 hours of lecture / 4 hours of lab

Prerequisite: CADD 143 (grade of "C" or higher)
Continuance of civil drafting from CADD 143, with a focus on refinement and using industry standards. Create a drawing set for a residential subdivision, with review by local professionals. [GE]

Mechanical Drafting
CADD 240 3 Credits/Units
1 hours of lecture / 4 hours of lab

Prerequisite: CADD 154 (grade of "C" or higher)
Continuance of mechanical drafting from CADD 144 and/or CADD 154, with a focus on refinement and using industry standards. Create a drawing set for a residential subdivision, with review by local professionals. [GE]

Selected Topics
CADD 280 1-5 Credits/Units
5 hours of lecture
Course focuses on selected topics in EMET. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [GE]

Special Projects
CADD 290 1-6 Credits/Units
Opportunity to plan, organize and complete special projects approved by the department. [GE]

Capstone Practicum
CADD 299 5 Credits/Units
1 hours of lecture / 8 hours of lab
Capstone project to expand knowledge by studying selected CADD topics in selected major area of study (architectural, civil, mechanical, or other) and producing a comprehensive portfolio-documented project. Projects must be pre-approved by the instructor. [GE]