

Central Ohio Technical College
Course Description Listing – Drafting and Design Technology Courses
2009-2010 Academic Year

DDT-3257 Statics and Strength of Materials I

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: MTH-1226 (or a score of at least 46 on the COMPASS Trigonometry test) and PHY-1721. Course is graded A-E.

Includes the study of static forces and equilibrium and the resultant stress, strain, deformation, failure and strength requirements in straight-line tension structures, compression and bearing members, shear elements, torsion elements, and angled structures.

DDT-3258 Statics and Strength of Materials II

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: DDT-3257. Course is graded A-E.

Includes the study of static forces and equilibrium and the resultant stress, strain, shear and bending considerations in the design and selection of trusses, rectangular beams, built up beams, and standard structural members.

DDT-3704 Auto CAD Civil 3D

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: DDT-3706 or permission of the instructor. Course is graded A-E.

This introductory level course covers the fundamentals of AutoCAD Civil 3D and gives the student comprehensive experience with the three-dimensional, interactive, dynamic design features of AutoCAD Civil 3D.

DDT-3705 Revit Architecture

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: DDT-3706 or equivalent and DDT-3758. Course is graded A-E.

This course introduces Revit, an object-based “building information modeling” (BIM) computer program used by Architects and building designers. In this lab-based course the student will explore Revit and gain experience in its concepts and capabilities. Through a series of hands-on lessons the student will create a detailed computer model of a building. The student will then use the program to develop a set of construction drawings generated from the building model.

DDT-3706 Introduction to CAD

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: None. Course is graded A-E.

This is the first course in a series of Computer Aided Drafting courses. The students will gain familiarity with the system hardware, peripherals and software. They will learn to construct a basic dimensioned orthographic drawing with the CAD system.

DDT-3707 Intermediate CAD

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: DDT-3706. Course is graded A-E.

This is the second in a series of CAD courses building on a foundation of Introduction to CAD. Advanced concepts in CAD will be explored including symbol libraries, isometric constructions, using the block commands, and creation of bill of materials.

DDT-3708 Advanced CAD

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: DDT-3707 within the last year. Course is graded A-E.

This course, the third in a series, builds on the concepts established in the first two CAD courses. The student will learn to customize the CAD working environment. The concepts of 3-D drawing and viewing are also taught including wire-frames, surfaced models, solid models, and rendering.

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DDT-3717 Materials for Engineering Technicians

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: None. Course is graded A-E.

This course provides an overview of the fundamental characteristics of the materials used in heavy construction. Classification, testing procedures, and proper use of materials, as well as, construction methods are investigated.

DDT-3718 Architecture History Survey

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course provides a survey of architectural traditions from early civilization to the modern architecture of the 20th Century, including buildings, landscape and planning.

DDT-3719-Advanced AEC CAD

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: DDT-3708 or permission of the instructor. Course is graded A-E.

This advanced computer-aided drafting course is the fourth in the COTC CAD sequence, structured for students in the Drafting and Design Technology program. The student will use specialized CAD software for architecture and civil engineering applications. These applications include, but are not limited to, the following: 2D and 3D plans, details, schedules, roof forms, elevation drawings, equipment layouts, subdivision layouts, highway layouts, contours, profiles, and earthwork.

DDT-3728 Drafting II

3 credit hours, 6 contact hours (0 hours lecture and 6 hours lab). Prerequisite: DDT-3758. Course is graded A-E.

Developing the techniques learned in 3758 Engineering Sketching, the student continues the study of drafting with the main emphasis on orthographic projection, sectioning, isometric drawings, perspectives, geometric constructions, auxiliary views, and lettering. Correct use of drafting instruments in the production of these types of drawings is stressed.

DDT-3731 Introduction to Civil Drafting/Design

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: MTH-1210 (or concurrent enrollment in MTH-1210), DDT-3706 and DDT-3758. Course is graded A-E.

This course is an introduction to the methods and practices of civil drafting. Includes surveying fundamentals, mapping, plot plans, contours, profiles, and highway layouts.

DDT-3733 Civil Drafting/Design II

4 credit hours, 7 contact hours (2 hours lecture and 5 hours lab). Prerequisite: DDT-3731. Course is graded A-E.

This course, the second in a series of three civil drafting and design courses, focuses on site grading/earthwork and storm stormwater management and earthwork.

DDT-3736 Civil Drafting/Design III

4 credit hours, 7 contact hours (2 hours lecture and 5 hours lab). Prerequisite: DDT-3733. Course is graded A-E.

This course, the third in a series of three civil drafting and design courses, focuses on land development. Topics covered include roadways and design and layout of development projects.

DDT-3737 Building Mechanical Systems

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: DDT-3733 or DDT-3766 or permission of the instructor. Course is graded A-E.

Mechanical systems for residential buildings are the focus for this course. Topics include plumbing, supply and drain, waste, vent design, heat loss calculations, climate control, and electric distribution. The student is also introduced to standard drafting practices related to plumbing, climate control, and electrical plan documents.

**Course Description Listing – Drafting and Design Technology Courses
2009-2010 Academic Year****DDT-3739 Drafting III**

3 credit hours, 6 contact hours (0 hours lecture and 6 hours lab). Prerequisite: DDT-3706 and DDT-3728 (or concurrent enrollment in DDT-3728). Course is graded A-E.

This is the third in a series of drafting courses using both manual and CAD drafting methods. This course develops concepts in geometric dimensioning and tolerancing, threaded fastener designation and use. Also covered is welding symbols and joint design, structural steel detailing and piping layout.

DDT-3748 Materials of Construction

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: MTH-1210 (or a score of at least 76 on the COMPASS Elementary Algebra test) and DDT-3757. Course is graded A-E.

An overview of the fundamental characteristics of the most frequently used materials in modern construction is presented. Proper use of materials, construction methods, and detailing practices are investigated.

DDT-3757 Architectural Design I

4 credit hours, 7 contact hours (1 hour lecture and 6 hours lab). Prerequisite: DDT-3728. Course is graded A-E.

This course, the first in the Architectural Design series, presents the theories and practices used in architectural drafting and design. Emphasis is placed on developing skills required in architectural drafting and design. Design theories, drafting, surveying, basic structural design, and cost estimating are introduced.

DDT-3758 Engineering Sketching

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: None. Course is graded A-E.

This is a beginning course to learn techniques to develop and document ideas through freehand sketching. Emphasis is on the development of sketching techniques, multi-view and isometric drawings, dimensioning, and blueprint reading.

DDT-3759 3D Design with SketchUp

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: CMP-1601 or permission of the instructor. Course is graded A-E.

This course covers techniques for conceptualizing, creating and presenting three-dimensional ideas quickly and easily using SketchUp software. The student will gain a sound foundation and working knowledge of SketchUp with the primary focus being on the creation of objects, buildings, and landscapes through 3D computer modeling.

DDT-3766 Architectural Design II

4 credit hours, 7 contact hours (1 hour lecture and 6 hours lab). Prerequisite: DDT-3706 and DDT-3757. Course is graded A-E.

In this course, the second in the Architectural Design series, the student is given a sequence of drafting and design projects involved in residential construction. Both manual and CAD drafting are used to produce a set of working drawings for a residence. Concepts introduced in other courses are further explored along with an introduction to design techniques and model building.

DDT-3771 Structural Steel and Concrete

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: DDT-3706 and DDT-3758. Course is graded A-E.

This course covers the fundamentals of structural steel and reinforced concrete designing and drafting. Topics covered include practices and methods used in the graphical representation of structural steel and reinforced concrete structures. Basic stress calculations and design concepts are studied for use in simplified design and detailing.

**COTC Course Description Listing – Drafting and Design Technology Courses
2009-2010 Academic Year****DDT-3776 Architectural Design III**

4 credit hours, 7 contact hours (1 hour lecture and 6 hours lab). Prerequisite: DDT-3707 and DDT-3766. Course is graded A-E.

The focus of this course, the third in the Architectural Design sequence, is on commercial construction. CAD drafting is employed to produce a series of working drawings representative of types drawn for a commercial building. Topics in design, building type study and code review are also included as they relate to the specific project.

DDT-3786 Drafting and Design Capstone Course

5 credit hours, 8 contact hours (2 hours lecture and 6 hours lab). Prerequisite: DDT-3736 or DDT-3776. Course is graded A-E.

This is a capstone course structured to give the student experience in real world drafting, designing and engineering problems. The student should apply skills and theories learned in previous course work to complete team projects. This class is structured to simulate a real world office.

DDT-3910 Cooperative Work Experience/Architectural

5 credit hours, 20 contact hours (0 hours lecture and 0 hours lab, 20 hours co-op directed practice). Prerequisite: DDT-3702 (or DDT-3013 and DDT-3706), DDT-3728, DDT-3757 (DDT-3756 or DDT-3755 or concurrent enrollment in DDT-3757), a grade point average of 2.75 or greater, and permission of faculty advisor. Course is graded A-E.

This course, to be taken toward the end of the two-year Drafting and Design Technology, Architectural Major curriculum, is designed to give the student a real-world, office, work experience which uses the skills acquired earlier in the program.

The course acts as a capstone, tying the concepts of the technology together and giving the student valuable job experience before graduation.

DDT-3997 Field Experience - Engineering

1 credit hour, 12 contact hours (1 credit hour per 12 hours per week work experience). Along with Field Experience – Engineering II and III, repeatable up to 12 credit hours. Prerequisite: COM-1525, 45 credit hours completed, and permission of Academic Dean. Course is graded S/U.

This flexible course offering is composed of a paid work experience coordinated by the student's advisor. The work experience must be related to the student's academic program. Elective credit is awarded on a satisfactory/unsatisfactory basis.

DDT-3998 Field Experience - Engineering

2 credit hours, 24 contact hours (1 credit hour per 12 hours per week work experience). Along with Field Experience – Engineering I and III, repeatable up to 12 credit hours. Prerequisite: COM-1525, 45 credit hours completed, and permission of Academic Dean. Course is graded S/U.

This flexible course offering is composed of a paid work experience coordinated by the student's advisor. The work experience must be related to the student's academic program. Elective credit is awarded on a satisfactory/unsatisfactory basis.

DDT-3999 Field Experience – Engineering III

3 credit hours, 36 contact hours (1 credit hour per 12 hours per week work experience). Along with Field Experience – Engineering I and II, repeatable up to 12 credit hours. Prerequisite: COM-1525, 45 credit hours completed, and permission of Academic Dean. Course is graded S/U.

This flexible course offering is composed of a paid work experience coordinated by the student's advisor. The work experience must be related to the student's academic program. Elective credit is awarded on a satisfactory/unsatisfactory basis.

**COTC Course Description Listing – Drafting and Design Technology Courses
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DDT 39XX Special Topics in Engineering

1-5 credit hours. Prerequisite: Permission of instructor and Academic Dean. Course is graded A-E.

Special topic study is designed to provide a student with the opportunity to work on special topics within the field of engineering under the directive of the Engineering faculty. This course may be substituted for an engineering technical elective course if it is applicable. The course may be repeated.