

CIVE 305 – Intermediate AutoCAD

Spring 2018

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Office Hours: Tues, 9:00 – 11:00 am, 2:00 – 4:00 pm

Thurs, 9:00 – 11:00 am

or, by appointment

Course Description

CIVE 305 is divided into three segments: AutoCAD, AutoCAD Civil 3D, and Revit. The first segment covers development of intermediate AutoCAD skills. Exercises begin with review of basic AutoCAD skills, and development of a Site Plan. Topics include, Orthographic Views, Section Views, and 3D Solid Modeling.

The second segment, AutoCAD Civil 3D, covers CAD skills specific to Civil and Environmental Engineering practice. Topics include processing Land Survey data and working with GIS and State Plane coordinate systems, point cloud data, and Lidar Data. This is followed by a brief presentation of Drone data processing using *AutoDesk ReCap (Reality Capture)* technology to create terrain surfaces. Data from these sources is used to develop Civil and Environmental Engineering projects that include Road Alignments and Profiles, Road Corridors, Grading, and Quantity Take-Off Sections, Piping Networks and Water Resources projects.

The final segment covers Revit, a very sophisticated CAD application used by Civil and Environmental Engineers and Architects. Revit is a project-based CAD application. It uses BIM (Building Information Modeling) technology to integrate systems and sub-systems within a project.

Revit assignments illustrate the creation of Foundations, Walls, Windows, and Roofs using an Architectural drawing template. These topics introduce the student to state-of-the-art viewing and object selection controls. Viewing controls include setting-up view planes and 3-D work planes.

Section Views, Schedules, and plot layout functionality topics are covered to illustrate the creation of design sheet sets. These design documents are dynamically updated as engineering projects evolve, and as design alternatives are developed. 3-D Walkthroughs are covered which enable dynamic 3D viewing of complex infrastructure projects.

Site plan modeling is covered to create a terrain model. Terrain models are used to graphically display the spatial relationship between buildings, roads, and utilities to the terrain of a complex project site. This is followed by an illustration of how Structural and MEP (Mechanical, Electrical, and Plumbing) system models are integrated into an Architectural Model using the BIM design paradigm.

Note: CAD Topics and Assignments are subject to change.

Class Policies

It is imperative that you attend classes (although class attendance is not required). There will be demonstrations of techniques and instructions for assignments as well as explaining hand out materials and other materials provided on-line. If you do not attend class, you are still responsible for seeking material and assignments that were missed. Homework and Lab Assignments not submitted will be given a grade of **ZERO**. Late work will be accepted however there will be a letter grade reduction of each day that it is late.

If you MUST miss class, please e-mail or call prior to the scheduled class.

There will be times when student activities may conflict with class time. Examples are ASCE activities and the Engineering Fundamentals exam review. In these cases, the syllabus schedule will be modified so that you have an opportunity to turn your work in late without a penalty. Class will still be held for those that do not attend these meetings.

Cell Phones

Please turn-off your cell phone during the Lecture period or set your cell phone ring-tone to 'vibrate' or 'soft' and take the call outside. Please be considerate to other students by not disrupting the class.

Cheating

University Goals:

- **To create professional development activities that will increase understanding of issues related to academic integrity.**
- **To disseminate educational and informational strategies focused on preventing academic misconduct.**
- **To assist student understanding of procedures when suspected incidents occur.**
- **To encourage and facilitate visible manifestations of the university's culture of academic integrity, including the development and implementation of a student honor pledge.**

Consequences for cheating will result in automatic FAILURE of course and formal notification to the Department of Civil and Environmental Engineering.

You will be asked to sign an Honor Pledge for each of the 3 Midterm exams.

Exams

There are three midterm exams, one for each class segment: AutoCAD, AutoCAD Civil 3D, and Revit. The dates for each midterm exam are given in the class syllabus. **Missed exams (except those excused beforehand) will result in a zero and cannot be re-taken.** Make-up exams and the final exam will be given per Colorado State University policy for excused absences such as a Doctor's excuse due to illness.

Midterm exams for online students must be received prior to the submission deadline. **Zero credit will be given for exams submitted after the deadline.**

Grading

Final Grades are based upon Homework Assignments, 3 Midterm Exams, and Class Participation:

	Point Value
Homework Assignments:	
Bio about your background and experience:	10 pts.
AutoCAD: 17 assignments @ 10 pts. each	170 pts.
AutoCAD Civil 3D: 17 assignments @ 10 pts. each	170 pts.
REVIT: 17 assignments @ 10 pts. each	170 pts.
Homework Sub-Total:	520 pts.
Midterm Exams:	
ACAD Exam:	300 pts.
ACAD Civil 3D Exam:	300 pts.
REVIT Exam:	300 pts.
Midterm Exam Sub-Total:	900 pts.
Total Points:	1420 pts.

Note:

The syllabus is subject to change. Changes to the syllabus may result in a change to the total number of points for this class.

Letter grades are evaluated on the 1420 point scale as follows:

A+	93 %
A, A+	90 %
B+	86.7 %
B	83.3 %
B-	80 %
C+	75%
C	70 %
D	60 %
F	Below 60 %

Optional Textbook

AutoCAD 2016 Tutorial-First Level: 2D Fundamentals, by Randy H. Shih; SDC Publications
www.SDCpublications.com ISBN-13 978.1.58503.959-3