SPRING 2015 (CRN 17873)

CE 210 – INTRODUCTORY COMPUTER AIDED DESIGN AND DRAFTING FOR CIVIL ENGINEERS
Department of Civil and Environmental Engineering
West Virginia University

Lecture Schedule : 1:00 pm – 2:50 pm, Monday and Wednesday
Meeting Location : MRB-E243

Instructor : Dr. Raj K. Gondle
Office: Engineering Sciences Building, ESB-641B
Phone: (304) 293-9954 or (304) 293-3024
Email: Raj.Gondle@mail.wvu.edu

Office Hours : 10:00 am – 11:00 am, Monday
11:00 am – 12:00 pm, Thursday
Also, after class hours or by appointment

Prerequisites : CE 201 or Instructor(s) Consent

Credits : 2 Credit Hours

Course Format : Lectures/demonstrations/hands-on CADD work.

Textbook : No textbook required.

Reference : Students may download a FREE student version of Autodesk AutoCAD 2013 or later version for use during the semester.

Students are also encouraged to check the Autodesk AutoCAD website (http://knowledge.autodesk.com/support/autocad/) for more learning information.

Course Overview:

The objective of this course is to teach civil engineering students the basic skills of civil engineering drawing and drafting by using a computer-aided design and drawing software. Autodesk product AutoCAD will be used throughout the course. The AutoCAD software is one of the most widely used design and drafting tools in the world. Students will be able to gain proficiency in AutoCAD software by creating/modifying plans, drawings, or design files used for a variety of civil and environmental engineering projects. Course topics may also include works of real field examples.

Expected Learning Outcomes:
After completing this course, students will be able to:

Course Outcome Description	ABET Program Outcomes*
1. Create a design file and make appropriate configuration settings for a variety of civil and environmental engineering projects	(C)
2. Accurately place and modify geometric elements - lines, arcs, circles, polygons, and blocks- representing the components of civil and environmental engineering projects	(C), (G)
3. Create, dimension, and sketch a plot/plan for representation/expression of civil/infrastructure engineering designs	(C), (G)
4. Draft design/construction drawings including architectural drawings and structural drawings for civil engineering projects	(C), (K)
5. Create 3D geometric components of building and infrastructure elements	(C), (K)
6. Gain proficiency in AutoCAD software	(C), (K)

*ABET Program Outcomes:
(C) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
(G) Communicate effectively in oral, written, and electronic formats
(K) An ability to use the techniques, skills, and modern engineering tools necessary for civil engineering practice

Tentative Schedule:
Attachment 1 contains tentative lecture schedule and a brief outline of course topics.

Attendance:
A sign-in sheet will be circulated at the beginning of every class. Students are expected to attend all lectures on time. Those who fail to attend classes regularly are inviting scholastic difficulty. NO make-up exercises.

Course Grading:
Grading will be based upon exams, homework's, in-class performance, quiz(s), and attendance. The relative percentage is given as following:

Class participation/attendance	…………	5%
Quiz(s)/In-class Exercises	…………	15%
Assignments	…………	30%
Mid-term Exam	…………	20%
Final Exam	…………	30%
		_____
		100%

Grading Scale:
The letter grades will be given based on the following grading scale:

Percentage		*Grade*
100-90	…………	A
89-80	…………	B
79-70	…………	C
69-60	…………	D
59-0	…………	F

Reading Assignments:
Reference material will be provided in classroom or electronically when needed. If you are interested in learning more about a particular topic, please come see me during my office hours.

Homework:
Homework assignments will be given after each topic or whenever a major portion of the subject is covered in the classroom. A hard copy and an electronic copy of every assignment should be submitted to instructor in a timely manner. A due date will be specified with every assignment. Late homework will not be accepted unless a valid excuse is presented and a written requested with explanations. Student homework with incomplete work will not receive any credit.

Exams:
All exams will be held in the classroom. Exams will be based on the course material covered in the classroom. Instructor will collect hard copies and electronic files to carefully evaluate student performance.

Social Justice Statement:
West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with Disability Services (304-293-6700).

Academic Conduct:
West Virginia University Academic Integrity: The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course.

Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.

Final Comments:
Food is disruptive and is not permitted during class or during laboratory sessions. No talking in the classroom or in the laboratory sections. Questions are encouraged during class. Never hesitate to ask questions. Any comments on how to improve the course are particularly welcome.

Good luck with the course!

Attachment # 1: Course Topics and Tentative Class Schedule

Week	Lecture	Date	Topics
1	1	01/12/2015	Introduction
	2	01/14/2015	Software User Interface
2	-	01/19/2015	Martin Luther King's Birthday Recess
	3	01/21/2015	Coordinates, Units, and Limits
3	4	01/26/2015	Scale, Board & Title, and Plotting
	5	01/28/2015	Placing and Editing Geometric Elements
4	6	02/02/2015	Placing and Editing Geometric Elements
	7	02/04/2015	Placing and Editing Tables and Text
5	8	02/09/2015	Layer and Line Settings
	9	02/11/2015	Hatching
6	10	02/16/2015	Dimensioning
	11	02/18/2015	Dimensioning
7	12	02/23/2015	Blocks
	13	02/25/2015	Polylines
8	14	03/02/2015	Review & Discussion
	15	03/04/2015	Midterm Exam
9	16	03/09/2015	Fundamentals of Engineering Drawing
	17	03/11/2015	Fundamentals of Engineering Drawing
10	18	03/16/2015	Architectural Drawing
	19	03/18/2015	Architectural Drawing
11	-	03/23/2015	Spring Recess
	-	03/25/2015	Spring Recess
12	20	03/30/2015	Structural Drawing
	21	04/01/2015	Structural Drawing
13	22	04/06/2015	Earthwork and Geotechnical Drawings
	23	04/08/2015	Introduction to 3D Modeling
14	24	04/13/2015	3D Modeling for Civil Projects
	25	04/15/2015	Final Exam
15	26	04/20/2015	Final Exam Review & Discussion
	27	04/22/2015	3D Modeling for Civil Projects
16	28	04/27/2015	Other topics
	29	04/29/2015	Review & Discussion

Note:

- Topics and dates are not binding and modifications are expected. Speed of coverage is subject to class feedback.