ETD 1320 – INTRODUCTION to AutoCAD
Fall 2016 – 3 Credits
Thursdays (starts 8/25) 5:30 to 7:00 PM Chastain Campus C-202
Fridays (starts 9/9) 12:45 to 3:00 PM Pruitt Campus S-125

Instructor: Gary Koser, P. E.

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Office Hours: see schedule on office door or at **gkoser-irsc.weebly.com**

Course Objective: This course will provide basic instruction in the various commands, methods, and techniques of Computer Aided Drafting (CAD) systems using AutoCAD Release 2017. Start up procedures, menu/icon software operations and the basic draw, modify, dimension and plot commands will be emphasized. Students will complete a series of review exercises and drawings.

Program Learning Outcome: Use technology to organize, acquire, and convey information on drawings and reports.

Assessed Degree Program Learning Outcome: Numerical Grade (0-100) will be based on AutoCAD drawings produced Unit 9.

Course Learning Outcomes:

- Demonstrate a working knowledge within the AutoCAD environment to set-up and produce drawings.
- Illustrate knowledge using basic Draw and Modify commands to create AutoCAD drawings.
- Show the proper use of Display and Inquiry commands.
- Create annotations through the proper use of the Dimensioning and Text commands.
- Produce output drawing files as scaled plotted hard copies.
- Develop and enhance basic personal computing skills.
- Use technology to organize, acquire, convey, and present information in a technical drawing for various disciplines.
- Communicate with clarity and precision regarding basic drafting concepts.

Assessment of Learning Outcomes: Assessments are determined by measuring the ability of each student to retain the learning objectives of the course. Performance-based methods, such as completion of assigned projects, general knowledge tests, group discussions, observation of mastery of critical skills, and analysis of the completion of projects and drawings will determine the final grade on this course.

Prerequisites: MAT 1033 - Algebra *(A basic understanding of Windows 8 and use of the mouse is recommended.)*

Required Text: "AutoCAD 2017 and AutoCAD LT 2017 Essentials" by Scott Onstott, published by Sybex, ISBN: 978-1-119-24333-5

Equipment Provided: The various classrooms have computers with Windows 8 and AutoCAD. Each station is equipped with USB ports and access to the AutoCAD 360 Cloud or other resources are provided for use as a backup to store completed drawings. **Completed drawings are to be e-mailed for grading to your instructor. It is strongly suggested that you have multiple methods for saving your work.**

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Session Agenda: Class will start promptly at the time listed above. Each session will include presentation, discussion, and lab time.

Additional Lab Time: Lab times are listed on the door for open labs in Ft. Pierce in the Kight Center in Room V216. Lab time can also be arranged with your professor. Typically, no lab time is available at the Chastain, Mueller, and Pruitt sites.

Since you can download the **AutoCAD 2017 software** from Autodesk for **FREE as a student**, it is also possible to work on your own computer to complete assignments.

Additional Tutorials: There are numerous tutorials on the AutoCAD commands and our drawing projects in our **Blackboard** site for this course. These are free and available on demand. There are free tutorials and support information available at www.autodesk.com in the Education Community.

If you desire additional information and tutorials, it is suggested to enroll at the *Lynda.com* site and review the following sessions: *AutoCAD Essentials Presentations* plus *AutoCAD New Features.* The cost is approximately $25 per month for this access.

Suggestions for study: Students should follow the schedule for assignments and due dates, read ahead on topics to be covered in class, do the textbook exercises first, ask questions to clarify the topics that are not completely clear, and work with your instructor during lab times in class.

Attendance & Class Policies: It is imperative that you attend every class session to receive the most benefit for this course. Attendance is required except for designated lab sessions as scheduled by the instructor. An absence may be excused with appropriate written evidence.

Grading Procedures: **10% - Class participation & attendance**
                                         70% - Exercises & Drawing Projects completed
                                         20% - Exams and Quizzes

A - Excellent	**90 – 100**	**D - Below average**	**60 - 69**
B - Above average	**80 – 89**	**F - Failure**	**0 – 59**
C - Average	**70 - 79**		

Work is due two sessions after assignment or as per schedule and shall be e-mailed to the instructor at gkoser@irsc.edu.   **Work that is late will lose points.**

Grades are recorded in the **Blackboard Course Management System** at http://blackboard.irsc.edu. Drawings will be graded on a 20 point scale. Book exercises are graded on a 10 point scale.

No disruptions, disrespectful behavior, or violation of the student code will be tolerated. IRSC and your instructor are committed to maintaining standards of academic honesty and integrity is a shared responsibility. All are expected to know and comply with IRSC Academic Integrity Policy which prohibits dishonesty in any form, including, but not limited to cheating, plagiarism, fabrication, and other forms of misconduct.

The instructor reserves the right to modify this syllabus and schedule for the benefit of the class as he may evaluate. Any changes will be communicated to the class in advance of the change to give every student a chance to comment and make adjustments and via student IRSC e-mail.

If you are experiencing any difficulties in your course, please work directly with your instructor to resolve the issues. If you are unable to settle your concerns with the assistance of your instructor, you can contact the Department Chair, Shaun Wightman at 462-7180 (swightma@irsc.edu) who will assist you or advise you about contacting the Academic Dean or Vice President.

No food or open drinks are permitted in the classroom.
No cell phone use is allowed in the classroom and should be turned off during lectures and presentations.

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Schedule and Assignments

Read Chapter 1: Getting Started

Exploring the AutoCAD User interface	Drawing lines	Autodesk 360 Cloud Op.
Canceling, erasing, and undoing	Mouse Operations	Save, Save As

Complete Quick-Start Drawings 1 and 2 from Handouts

Templates

Units	Drawing limits	Layers	Linetypes

Complete Templates 4-2 and 4-3 as per Handout

Read Chapter 6: Object Viewing

Zoom	Pan	Layer Visibility

Complete Textbook Exercises 6-1, 6.2, 6.4, and 6.7

Read Chapter 2: Basic Drawing and Chapter 3: Using Drawing Aids

Absolute, Relative, and Polar Input	Direct Distance	Dynamic Entry
Ortho and Polar tracking	Object Snaps	Rectangles
Polygons		

Complete Handout Drawings: Practice Exercise 5-1 to 5-6, 5-11, and 5-12
Complete Textbook Exercises: 2.1, 2.3, 2.4, 2.7, 2.9, 2.10, and 2.11.
Complete Textbook Exercises: 3.1, 3.3, 3.5, and 3.6

Read Chapter 5: Shaping Curves

Circles	Arcs	Ellipse	Donut
Polylines	Splines		

Complete Textbook Exercises 5.1 and 5.2

Read Chapter 4: Editing Entities and Using Grips

Erase	Move/Copy	Rotate	Scale
Mirror	Array	Offset	Trim/Extend
Stretch	Break/Join	Fillet/Chamfer	Grip Edits
Object Grips	Grips: Cold versus Hot versus Information	Use of the Space Bar for Grips	

Complete Handout Drawings: Practice Exercise 5-13 to 5-18 (Extra credit drawings per handout)
Complete Assignment: Tutorial 11-2, Tutorial 11-3, and Practice Exercise 11-5
Complete Textbook Exercises 4.1, 4.2, 4.3, 4.4, 4.7, and 4.8

Read Chapter 10: Creating and Editing Text

Text Styles	Multi-line Text	Tables	Fields

Complete Textbook Exercises 10.1, 10.2, and 10.6

Read Chapter 11: Dimensions and Leaders

Linear	Aligned	Baseline/Continued	Radial/Diameter
Angular	Ordinate	Multileader Styles	Quick Dimensions
Tolerances	Dimension Edit		

Required Assignment: Completely dimension any 8 of the above Practice Exercise 5-1 to 5-16 drawings.
Complete Textbook Exercises 11.1, 11.3, and 11.4

Read Chapter 14: Printing and Plotting

Plotting layouts in paper space	Annotation	Plotting in model space

Required Assignment: Plot all 8 drawings that were dimensioned as per Chapter 11 above.
Complete Textbook Exercises 14.8 and 14.9

Read Chapter 8:Hatching and Gradients

Boundaries	Hatch	Gradients

Required Assignment: Draw and Dimension Practice Exercises 9-1 to 9-6 and 9-9 (Plotting not required)
Complete Textbook Exercises 8.1, 8.5, and 8.6

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Read Chapter 7: Organizing Objects and Chapter 9: Working with Blocks and Xrefs

Create and Edit	Storing	INSERT	Design Center
Attach/Overlay	Editing/ Clipping	Managing XREFs	Underlays

Required Assignment: Tutorials 10-1, 10-2, and 10-3 plus Practice Exercise 10-4
Complete Textbook Exercises 7.1, 7.3, 7.4, and 7.9
Complete Textbook Exercises 9.1 and 9.2

Read Chapter 15: Working with Data (p. 293 to 299)

Defining attributes and blocks	Inserting attributed blocks

Complete Textbook Exercises 15.3 and 15.4

Read Chapter 12: Control with Constraints

Working with geometric constraints	Applying dimensional constraints and creating user parameters
Constraining objects simultaneously with geometry and dimensions	
Making parametric changes to constrained objects	

Required Assignment: Complete Handout Exercise 12-2 and 12-3
Complete Textbook Exercises 12.1 and 12.2

Read Chapter 15: Tables and Fields (p. 300 to 315)

Table Styles	Insert Tables	Modify Tables
Fields	Insert Fields	Update Fields

Required Assignment: Complete Handout Exercise 13-1 and 13-2
Complete Textbook Exercises 15.5 and 15.6 (Extra Credit for 15.7)

Intro to 3D Concepts

Thickness, Elevation	3D Coordinate Systems	Wireframes
3D Surfaces	Solids	

Extra Credit Assignment: Complete Handout Drawing 19

AutoCAD Toolbars, Palettes, and more

Multiple Ways to Start Commands	Toolbar Organization	Tool Palettes
More Alias and Keyboard Shortcuts	AutoCAD Ribbon	Action Recorder

FINAL EXAM -- at last class