



COURSE OUTLINE

DIVISION: Workforce Development

COURSE: CAD 1201 Computer Aided Drafting II

Date: Fall 2017

Credit Hours: 3

Prerequisite(s): CAD 1200 or consent of Instructor

Delivery Method:

<input checked="" type="checkbox"/> Lecture	2 Contact Hours (1 contact = 1 credit hour)
<input type="checkbox"/> Seminar	0 Contact Hours (1 contact = 1 credit hour)
<input checked="" type="checkbox"/> Lab	2 Contact Hours (2-3 contact = 1 credit hour)
<input type="checkbox"/> Clinical	0 Contact Hours (3 contact = 1 credit hour)
<input type="checkbox"/> Online	
<input type="checkbox"/> Blended	

Offered: Fall Spring Summer

IAI Equivalent –**Only for Transfer Courses**–go to <http://www.itransfer.org>:

CATALOG DESCRIPTION:

This course is designed to build on the skills acquired in the Computer Aided Drafting I course. This course builds on the fundamentals of drafting. Students familiar with basic drafting terminology will produce detail drawings and assemblies to produce production drawings using 2D CAD (AutoCAD). Advanced principles of dimensioning will be used to produce industry standard drawings. Students will use real world projects to compile drawings, check drawings and plot the working drawing package. Additional fundamentals of CAD such as blocks, attributes, external references and an introduction to parametric drawings will be explored. Students will learn how to use AutoCAD to draw and edit polylines, set layers, line types and colors; dimension drawings; create section lines and graphic patterns, design symbols and attributes for multiple use. Upon completion a student will know how to draft, read and interpret engineering drawings.

GENERAL EDUCATION GOALS ADDRESSED

[See last page for Course Competency/Assessment Methods Matrix.]

Upon completion of the course, the student will be able:

[Choose up to three goals that will be formally assessed in this course.]

- To apply analytical and problem solving skills to personal, social, and professional issues and situations.
- To communicate successfully, both orally and in writing, to a variety of audiences.
- To construct a critical awareness of and appreciate diversity.
- To understand and use technology effectively and to understand its impact on the individual and society.
- To develop interpersonal capacity.
- To recognize what it means to act ethically and responsibly as an individual and as a member of society.
- To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.
- To connect learning to life.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals. See last page for more information.]

Upon completion of the course, the student will be able to:

1. Produce 2D technical drawings with drafting standards
 - a. Properly dimension drawing and use AutoCAD's dimension variables.
 - b. Draw sectional views and graphic designs using AutoCAD hatch pattern and solids.
 - c. Construct blocks with attributes and use them in a drawing.
 - d. Use external references and create Multiview layouts.
 - e. Insert fasteners by creating blocks or use existing blocks to finish assembly drawings
2. Communicate designs concepts using engineering graphics principles
 - a. Create a bill of materials and develop a numbering system for working drawings.
 - b. Make parametric drawings.
 - c. Use model and paper space environments.
 - d. Be able to create detail drawings with standard dimensions
 - e. Be able to apply tolerances to drawings using GDT (Geometric Dimensioning and Tolerancing methods)
 - f. Add local and general notes to complete productions drawing.
3. Interpret design concepts and apply them to "real world" design problems
 - a. Be able to determine design intent
 - b. Use the design process to make production drawings
 - c. Complete and print a working drawing package

MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS

[For each of the goals selected above, indicate which outcomes align with the goal.]

Goals	Outcomes
First Goal	
To communicate successfully, both orally and in writing, to a variety of audiences.	Communicate designs concepts using engineering graphics principles
Second Goal	
To understand and use technology effectively and to understand its impact on the individual and society.	Produce 2D technical drawings with drafting standards
Third Goal	
To connect learning to life.	Interpret design concepts and apply them to “real world” design problems

COURSE TOPICS AND CONTENT REQUIREMENTS:

1. Dimensioning practices and standards, use dimension commands, dimension variables, units, decimal places, text size and style, symbols, dimension layers, creating and using dimension styles.
2. Edit associative dimensions and make changes to existing dimensions.
3. Define and use dimensioning tolerancing and terminology, prepare drawings with tolerance dimensions.
4. Geometric dimensioning and tolerancing (GD&T), use the Symbol and Geometric Tolerancing dialog boxes to create GD&T drawings.
5. Drawing sectional views and graphic patterns, introduction to sectioning practices, hatch commands dialog box, editing hatch patterns.
6. Creating and editing symbols for multiple uses, creating a symbols library. External referencing and multiview layout.
7. Assigning attributes and generating bills of material, editing attributes, collecting attribute information, redefining attributes.
8. Isometric drawing, isometric snap, isometric text, isometric dimensions.
9. Create working drawings
10. Use model space and paper space and annotative entities
11. Create and use title blocks and bills of materials
12. Use parametric constraints to construct objects
13. Students will be given a real world design project to produce a set of production drawings.
14. Classmates will check finished drawings for

- a. proper details
- b. dimension standards
- c. appropriate tolerances
- d. local notes and general notes
- e. proper numbering systems
- f. complete bill of materials
- g. proper line standards

Mistakes will be red lined and given back to originator to edit drawings.

15. After alterations drawings will be replotted and fastened

INSTRUCTIONAL METHODS:

1. Lectures
2. Class demonstrations
3. Individual demonstration
4. Use of audio-visual aids
5. Assignments (drawing) both in class and out
6. Guest speakers
7. Field trips

INSTRUCTIONAL MATERIALS:

TEXT – AutoCAD and It's Applications - Shumaker

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

1. Good work and completion of all problems assigned.
2. Satisfactory test scores

A= 90-100

B= 80-89

C= 70-79

D= 60-69

F= 0-59

OTHER REFERENCES

Solid Professor

Course Competency/Assessment Methods Matrix

(Dept/# Course Name)	Assessment Options																																								
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment									
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D															
1. Produce 2D technical drawings with drafting standards				X	X	X		X	X		X							X																							
2. Communicate designs concepts using engineering graphics principles				X	X	X		X	X		X							X																							
3. Communicate designs concepts using engineering graphics principles				X	X	X		X	X		X							X																							