



# ILLINOIS VALLEY COMMUNITY COLLEGE

## COURSE OUTLINE

**DIVISION: Workforce Development**

**COURSE: DFT 1200 Basic Drafting**

Date: Fall 2017

Credit Hours: 3

Prerequisite(s): None

Delivery Method:  **Lecture**                    **2 Contact Hours** (1 contact = 1 credit hour)  
 **Seminar**                    **0 Contact Hours** (1 contact = 1 credit hour)  
 **Lab**                                **2 Contact Hours** (2-3 contact = 1 credit hour)  
 **Clinical**                    **0 Contact Hours** (3 contact = 1 credit hour)  
 **Online**  
 **Blended**

Offered:  **Fall**     **Spring**     **Summer**

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

### CATALOG DESCRIPTION:

This course is designed to be used as an introduction to engineering graphics and will give the student a basic understanding of how to create and read engineering drawings. It covers the main topics of drafting theory including terms common to an engineering drawing, basic drawing and technical sketching, an in-depth study of multi view projection, sectional and auxiliary views, dimensioning (customary and metric system) and multi view projection in the production of a complete set of detail and assembly drawings. The course will also include an introduction to tolerancing and fasteners.

## 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. Discuss basic engineering design processes using industry terminology.
  - a. Define in writing or verbally each term commonly used terms of machine drawings
  - b. Give the abbreviation commonly used terms
  - c. Explain the role of engineering drawings in the design process
2. Students will learn standards that govern and guide the successful compilation of production drawings.
  - a. Use a variety of methods to implement standards in their drawing
  - b. Dimension detailed drawing according to industry standards
3. Communicate engineering designs through sketching, technical drawing and computer aided drawing.
  - a. Identify the different types of pictorial drawings used in engineering graphics and produce them in actual applications
  - b. Practice and apply the basic theory behind orthographic production to actual drawings
  - c. Produce sectional detailed views of production parts
  - d. Apply basic tolerancing techniques to detailed drawings
  - e. Identify and draw representations of threads and fasteners used in mechanical engineering
  - f. Produce assembly drawings and recognize their role in production drawings.

## 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.	Discuss basic engineering design processes using industry terminology.  Communicate engineering designs through sketching, technical drawing and computer aided drawing.
Second Goal	
To understand and use technology effectively and to understand its impact on the individual and society.	Communicate engineering designs through sketching, technical drawing and computer aided drawing.

### COURSE TOPICS AND CONTENT REQUIREMENTS:

1. Design concepts and how to communicate a design
  - a. Sketching
  - b. Technical drawing
  - c. Computer aided drawing
2. Industry Standards
3. History of technical drawing
4. Engineering drawing format
5. Orthographic projection introduction
6. Glass box theory
6. Alphabet of lines
7. Introduction to pictorial drawing
  - a. Axonometric projections
  - b. Oblique projections
  - c. Perspective projections
8. Detailed drawings
9. Dimensioning detailed drawings
  - a. Types of dimensions
  - b. Local and general notes
  - c. Placement, spacing and readability
10. Sectional views
  - a. Rules of sectioning
  - b. Types of sections
11. Advanced view techniques

- a. Removed, revolved and partial views
  - b. Auxiliary views
  - c. Cast and molded parts
  - d. Welded parts
12. Introduction to Tolerancing
  13. Threads and fasteners
  14. Assembly drawings

**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:**

*Engineering Graphics Essentials* 5<sup>th</sup> Edition Plantenberg

**STUDENT REQUIREMENTS AND METHODS OF EVALUATION:**

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

Grading Scale

A=90-100

B=80-89

C=70-79

D=60-69

F=0-59

**OTHER REFERENCES**

# 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						
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.																																
1. Discuss basic engineering design processes using industry terminology.				X	X	X	X	X	X				X	X	X			X										X				X
2. Students will learn standards that govern and guide the successful compilation of production drawings.				X	X	X	X	X	X				X	X	X			X										X				X
3. Communicate engineering designs through sketching, technical drawing and computer aided drawing.				X	X	X	X	X	X				X	X	X			X									X				X	