ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Workforce Development

COURSE: DFT 1203; Machine Blueprint Reading

Date: Fall 2013

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 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:
Machine Blueprint Reading is a course designed to progress logically from an introduction to blueprint reading through a study of the fundamental skills and concepts involved in reading, sketching, and interpreting drawings.

GENERAL EDUCATION GOALS ADDRESSED

[See the last page of this form for more information.]

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

[Choose those goals that apply to this course.]

☒ To apply analytical and problem solving skills to personal, social and professional issues and situations.
☒ To communicate orally and in writing, socially and interpersonally.
☐ To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
☒ To understand and use contemporary technology effectively and to understand its impact on the individual and society.
☒ To work and study effectively both individually and in collaboration with others.
☐ To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
☐ To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
☒ To appreciate the ongoing values of learning, self-improvement, and career planning.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals.]

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

1. To develop skills in visualizing and interpreting prints used in machining, welding, sheet metal, piping, and electrical applications.
2. To develop skills in sketching prints used in machining, welding, sheet metal, piping, and electrical applications.
3. Have an understanding of multi-view and isometric projection and techniques of sketching the student will:
    a. sketch the front, top, and side views when given an isometric view
    b. sketch the isometric and complete the views of various objects
    c. sketch in the missing lines and views of various multi-view problems
4. Given problems involving basic mathematics, the student will perform the mathematical operations involving whole numbers, fractions, and decimals.
5. Students will have an understanding of the various concepts used in the making of an engineering drawing as:
    a. conventional line practices
    b. orthographic projection
    c. dimensioning
    d. auxiliary views
    e. detail and assembly drawings
    f. tolerancing
    g. sectional views
    h. pictorial drawings
    i. geometric tolerances
6. Students will be able to read and interpret title blocks, material lists, notes and drawing changes.
7. Students will be able to read and interpret machining specifications as:
    a. thread, representation, and specifications

b. specification and callouts for machine processes
c. tolerances of position and form
d. gears, splines, and serrations

8. Given CNC and weldment drawing, the student will interpret relative to the construction of the part.
9. Given advanced machine drawings or industrial prints, the student will demonstrate his understanding of the part represented by answering questions relative to the construction of the part.

COURSE CONTENT:

I. Fundamentals of Drafting Symbols
II. Fundamentals of Orthographic Projection
III. Sectional and Auxiliary Views
IV. Sketching
V. Dimensioning
VI. Use of Notes and Symbols
VII. Assembly Drawings

INSTRUCTIONAL METHODS:

1. Lecture on board
2. Demonstration
3. One-on-one attention individualized
4. Overhead projector

INSTRUCTIONAL MATERIALS:TEXT: Blueprint Reading Basics
Hammer
ISBN 0-83-11-3125-X

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

1. Problem solving
2. Skill proficiency
3. Technical knowledge
4. Interest in the area of drafting and blueprint reading
5. Desire to achieve a skill in the area of sketching for work or personal use.

OTHER REFERENCES

Course Competency/Assessment Methods Matrix

DFT 1203; Machine Blueprint Reading	**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
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.	**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. To develop skills in visualizing and interpreting prints used in machining, welding, sheet metal, piping, and electrical applications.					X				X						X												X				X
2. To develop skills in sketching prints used in machining, welding, sheet metal, piping, and electrical applications.					X				X						X												X				X
3. Have an understanding of multi-view and isometric projection and techniques of sketching the student will:					X				X						X												X				X
4. Given problems involving basic mathematics, the student will perform the mathematical operations involving whole numbers, fractions, and decimals.					X				X						X												X				X
5. Students will have an understanding of the various concepts used in the making of an engineering drawing as:					X				X						X												X				X
6. Students will be able to read and interpret title blocks, material lists, notes and drawing changes.					X				X						X												X				X

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Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.	**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						
7. Students will be able to read and interpret machining specifications as:					X				X						X																	X
8. Given CNC and weldment drawing, the student will interpret relative to the construction of the part.					X				X						X													X				X
9. Given advanced machine drawings or industrial prints, the student will demonstrate his understanding of the part represented by answering questions relative to the construction of the part.					X				X						X													X				X