COURSE OUTLINE

DIVISION: Workforce Development

COURSE: CAD 1203 Electronic Drafting

Date: Spring 2015

Credit Hours: 2

Prerequisite(s): CAD 1200

Delivery Method:
- Lectures: 1 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:
A course in techniques and general drafting with major emphasis on pictorial drawing, device symbols, production drawings, flow and schematic diagrams, printed circuits, miniaturization, industrial controls, and graphic representation.
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:

Using basic technical drawing principles employed in industry, the student will:

1. Learn the basics in lettering, sketching, and the alphabet of lines used in drafting.
2. Learn electronic symbols used in drafting and how to apply them to different electronic drafting diagrams, including schematics, single line wiring diagrams and logic diagrams.
3. Learn the principles behind printed circuit board design and the routing of pcb component location and circuitry.
4. Learn to create printed circuit board layout, drill and trim, and assembly drawings from engineering specifications.
5. Learn computer graphic principles as they apply to the latest release of AutoCAD.

COURSE TOPICS AND CONTENT REQUIREMENTS:

1. Creating Diagrams; Block, Single Line, Flowcharts
2. Electrical Schematics
   a. Electronic Symbols
   b. Standards
   c. Modifications
   d. Logic Diagrams
3. Wiring Diagrams
   a. Point to point wiring diagrams
b. Highway wiring diagrams
c. Baseline wiring diagrams
d. Harness assemblies

4. Printed Circuit Boards
   a. Manufacturing process and design
   b. Component location
   c. Routing considerations
   d. Creating the required drawings

INSTRUCTIONAL METHODS:
Lecture
Lab
Group Projects

INSTRUCTIONAL MATERIALS:
Electronics Drafting, John Frostad,

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:
Completion of assigned problems, required reading of text.
Periodic tests.
Group Projects
Problem Based Learning

OTHER REFERENCES
## Course Competency/Assessment Methods Matrix

### CAD 1203 Electronic Drafting

For each competency/outcome place an “X” below the method of assessment to be used.

<table>
<thead>
<tr>
<th>Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.</th>
<th>Direct/Indirect</th>
<th>Assessment of Student Learning</th>
<th>Assessment Options</th>
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</thead>
<tbody>
<tr>
<td>1. Learn the basics in lettering, sketching, and the alphabet of lines used in drafting.</td>
<td>D</td>
<td>Article Review</td>
<td>Case Studies</td>
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<tr>
<td>2. Learn electronic symbols used in drafting and how to apply them to different electronic drafting diagrams, including schematics, single line wiring diagrams and logic diagrams.</td>
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