

**DRAF 213 Schematic Drafting**

Credit Hours: 3

**Scheduled hours per week**

Lecture: 3

Lab: 0

Other: 0

**Catalog Course Description:** Schematic interpretation of electronic, hydraulic and pipe drawings. Electronic drawings include logic and integrated circuit schematics; hydraulic drawings include multiple position and pictorial schematics; and pipe drawings include isometric and oblique schematics.

**Pre-requisites:** DRAF 102 or DRAF 111 or DRAF 314

**Co-requisites:** None

**Course Learning Outcomes:**

To assure anyone wishing to create technical schematic drawings, the means of and the knowledge of the language of visual communication, and the skills to produce them. Traditional drawing instruments and AutoCAD software are utilized in producing the drawings

- To be able to develop the working skills to execute schematic drawings used to depict piping, hydraulic and electrical circuitry.
- To understand computer terminology in relation to CAD.
- To identify the types of plotters, storage devices and input devices available.
- To identify the graphic applications using in schematic drafting.
- To be able to draw orthographic views on the system.
- To be able to draw pictorial views.
- To be able to draw multi-color views using AutoCAD software.
- Use accuracy and neatness, and speed in producing all required drawings.

**Topics to be studied:**

- |                          |                              |
|--------------------------|------------------------------|
| • Electrical symbols     | • Architectural symbols      |
| • Logic diagrams         | • Pipe single line diagrams  |
| • Wire diagrams          | • Pipe double line diagrams  |
| • Printed circuit boards | • Pipe schematic isometric   |
| • Electrical schematics  | • Hydraulic schematics       |
| • Block diagrams         | • Hydraulic working drawings |
| • Control circuits       |                              |

<b>Relationship of Course to Program Learning Outcomes:</b>	
Create two and three-dimensional drawings using AuotCAD, Microstation, Inventor, Revit, and 3D Studio Max.	X
Create three-dimensional animations and walkthroughs using AutoCAD, Revit, Inventor and 3D Studio Max.	
Apply arithmetic, algebraic, and trigonometric calculations in solving basic design problems.	X
Apply physics to solve mechanical design problems.	
Understand by verbal and visual means the design of drawings and models.	X
Understand in writing to fellow coworkers and customer of any comments and concerns	X

<b>Relationship of Course to General Education Learning Outcomes:</b>	
<b>Composition and Rhetoric</b> Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	X
<b>Science &amp; Technology</b> Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	
<b>Mathematics &amp; Quantitative Skills</b> Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
<b>Society, Diversity, &amp; Connections</b> Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
<b>Human Inquiry &amp; the Past</b> Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	X
<b>The Arts &amp; Creativity</b> Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
<b>5/3/2016</b>	

**Special requirements of the course:**

**Additional information:**

**Prepared by:** Callix Miller 10/20/17

**Date:** 10/20/17