REVISED: Fall 2014

SYLLABUS

DIVISION: Business and Engineering Technology

CURRICULA IN WHICH COURSE IS TAUGHT: Drafting and Design

COURSE NUMBER AND TITLE: CAD 233 Computer Aided Drafting and Design III

CREDIT HOURS: 3 **HOURS/WEEK LECTURE:** 2 **HOURS/WEEK LAB:** 2

I. CATALOG DESCRIPTION: This course exposes student to 3-D and modeling while focusing on proficiency in production drawing using a CAD system.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES IN WHICH IT IS TAUGHT:
Acquire an understanding of microcomputers. Gain a working knowledge of representative commercial software packages, including operating systems, Internet and e-mail, word processing, spreadsheets, databases, and presentations. CAD 233 will address the following program outcomes:

- Students will develop, design, create a drawing package, and fabricate a 3 dimensional working model of a functioning mechanical system.
- Students will design, draw, and fabricate a prototype of two design projects using a CAD program.

III. REQUIRED BACKGROUND:
Students must have basic computer skills and either industrial drafting experience or have previously enrolled in a basic drafting class. Students may enroll if they take DRF 114 concurrently.

IV. COURSE CONTENT:

- Basic functions
- Developing parametric models
- Creating working drawings
- Adding dimensions
- Inserting an isometric view onto the drawing template
- Printing
- Creating and assembling multiple parts
- Using design tables to create variations of parts
- Using features to create more complex parts
- Creating section views
- Creating realistic images
- Design projects
- Produce designs on rapid prototypers

The syllabus and course outline are subject to change at the discretion of the instructor.

V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE

___**x**___Communications ___**x**___Critical Thinking

_____Cultural & Social Understanding ___**x**___Information Literacy

_____Personal Development ___**x**___Quantitative Reasoning

_____Scientific Reasoning

VI. LEARNER OUTCOMES

VII. EVALUATION

Learner outcome • Recognize the functions of the Solidworks workstation and understand their uses.	**Evaluation method** Creation of solid models and working drawings Blackboard Quizzes Online exam
Learner outcome • Demonstrate the ability to develop solid models and add features such as holes, pockets, bosses, etc.	**Evaluation method** Creation of solid models
Learner outcome • Develop orthographic projections from the parametric model.	**Evaluation method** Creation of working drawings
Learner outcome • Assemble parts to create a mechanical system.	**Evaluation method** Creation of assemblies
Learner outcome • Develop section and auxiliary view drawings from the parametric model.	**Evaluation method** Creation of working drawings
Learner outcome • Properly dimension orthographic projections and adjust dimension locations.	**Evaluation method** Creation of solid models and working drawings
Learner outcome • Properly save drawings in different formats	**Evaluation method** Creation of solid models and working drawings
Learner outcome • Design and graphically represent solutions to design problems. • Understand the importance of tolerances in the design process. • Create physical models on the rapid prototyper from parametric models. • Demonstrate skills in presentation methods such as printing, animations, and the creation of web pages	**Evaluation method** Creation of solid models and working drawings of design projects

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