

Minnesota State College Southeast

BIKE 1070: Solidworks

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course covers the fundamentals of parametric drawing and design. The student will use Solidworks to create 3D parametric models as well as use these models to create engineering drawings and documentation. (Prerequisite: none) (3 credits: 2 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 02/27/2018 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Analyze Solidworks 3D parametric design software and its functions
2. Manipulate 3D parametric models
3. Create working 3D parametric models
4. Create 3D parametric assemblies
5. Create detail drawings from 3D parametric models and assemblies
6. Explore sheet metal functions/drawings
7. Explore mold design
8. Explore CAD visualization and animation tools
9. Analyze aesthetic designs for bicycle components vs utilitarian designs

D. LEARNING OUTCOMES (General)

1. Understand the principles and advantages of 3D modeling
2. Demonstrate basic modeling and editing skills for development and alteration of 3D parts
3. Demonstrate basic skills for development and manipulation of 3D assemblies
4. Ability to interference check 3D assemblies
5. Generate, dimensioned, and annotated 2D drawings from 3D part models and assemblies
6. Demonstrate basic knowledge of 3D sheet metal and mold design tools and modeling methods
7. Demonstrate ability to animate a mechanical assembly
8. Demonstrate ability to visually illustrate a model or assembly using rendering tools
9. Demonstrate ability to conduct a draft analysis on a molded part
10. Demonstrate ability to evaluate mass properties of part and assembly

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted