



CAD 111: Mechanical Design with Solidworks

This course utilizes the latest PC-based associative, parametric solid modeling software (SolidWorks) to produce three-dimensional models of mechanical objects and assemblies. Topics include sketching a part feature, providing dimensions and constraints to tie the features together, converting a sketch into a solid object, and creating and editing full assemblies. Working drawings are created from the part design, including a variety of views and dimension styles. The course continually emphasizes mechanical design principles using the CAD system. In addition, students learn the ASME Drawing Standards, Geometric Design & Tolerancing and 3-D printing. Prerequisite: CAD 101 is recommended. Two lecture hours and three laboratory hours per week. Instructional Support Fee applies. NOTE: Utilizes Windows based software only.

Course Student Learning Outcomes

1. Demonstrate common fully defined parametric modeling functions and assembly mating features. 2. Utilize third angle projection. 3. Follow current ASME (American Society of Mechanical Engineers) engineering standards. 4. Create accurate detail drawings. 5. Construct student drawing templates. 6. Research online mechanical and manufacturing processes, terminology, standards, and products. 7. Utilize digital software, databases, and tools vital to the mechanical and manufacturing engineering trade. 8. Assess online resources for individual and/or team projects.

Credits: 3

Program: Computer Aided Drafting