

Mechanical Engineering Program: ABET Course Outcomes

Course: EN174 – Computer Aided Design

Instructor: B. Burke

Revision Date: Spring 2006

Course Description: Application of computers to design methods in engineering. Hands-on experience in the use of CAD software packages for geometric modeling, visualization, and drafting. Emphasis is placed on applications to solids and structural problems. Independent design projects are carried out. Course counts as ABET upper-level design course for mechanical and civil engineering concentrators.

Prerequisite: EN31.

Other Remarks: Enrollment limited to 48. Written permission Required.

Outcomes:

On completion of EN174, students shall demonstrate

1. An understanding of the theory of orthographic projection and the conventions associated with mechanical engineering drawings, and to apply this understanding to interpret and to create mechanical engineering drawings of components and assemblies;

Addresses ABET outcomes (a), (g), (k)

Assessment: Assignments, Examination, student survey.

2. Proficiency in the use of a modern computer-aided design program (Pro/Engineer), including (a) creation of parametric solid models of components and assemblies; (b) creation of mechanical engineering drawings; (c) creation of photorealistic renderings; (d) structural and kinematic simulations.

Addresses ABET outcome (k)

Assessment: Assignments, Examination, student survey.

3. The ability to apply computer-aided design techniques to complete all phases of a top-down mechanical engineering design process, and to use computer-aided visualization techniques to prepare and deliver written and oral presentation of design specifications.

Addresses ABET outcomes (a), (c), (e), (g), (k)

Assessment: Design project, student survey