

**UNIVERSITY OF SOUTHERN MAINE**  
**Department of Engineering**

**EGN 301/402/403 Design Project Guidelines**

This document describes the design experience for engineering students starting with the 2011/2012 catalog year. Students who are following previous catalog years may substitute an additional engineering elective for *EGN 403* without further changes. All design project courses count for 3 credits.

**EGN 301 Junior Design Project and the Engineering Profession**

Engineering students must enroll in *EGN 301* with permission from their advisor, based on a reasonable expectation that they will graduate in the next 3 semesters. Students learn about the fundamental practice of engineers, which is design. While students are exposed to multiple aspects of the engineering profession, such as ethics, project management, and teamwork, they engage in group projects, incorporating appropriate engineering standards and multiple realistic constraints. An outcome of the course is the selection of a project for *EGN 402*, based on student interests and instructor availability. *EGN 301* meets twice a week and is offered every spring.

**EGN 402 Senior Design Project**

*EGN 301* is a prerequisite for *EGN 402*. Students must register for a specific section of *EGN 402* after having obtained permission from the respective instructor. Fall is the typical semester, but sections may also be available in the spring and summer. Students design and implement a device or system to perform a useful function. The project may be carried out individually or in small groups, but the contribution is assessed on an individual basis. Simultaneous enrollment in *EGN 301* and *EGN 402* is not permitted. The instructor meets regularly during the semester with the students to offer advice and to monitor progress toward stated objectives. The project begins with submission and approval of a proposal, outlining the core objectives of the project. The proposal must contain multiple realistic constraints, such as budget, timeline and scope, and applicable engineering standards that will be investigated. Project outcomes include an oral presentation, a demonstration of the device or system, and a final report. The final report must contain a description of the engineering standards that were investigated and/or applied and how the realistic constraints were satisfied. Additional outcomes are at the discretion of the instructor, and often include a poster submission to the annual *Thinking Matters Student Conference*.

**EGN 403 Advanced Design Project**

*EGN 403* is an opportunity for students to pursue a more extensive design experience or an engineering research project, under the guidance of an instructor. Prerequisites are a grade of B or better in *EGN 402*, and instructor permission. Students may take it to replace an electrical or mechanical engineering elective.

Revised and approved on January 18, 2011.