

COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

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Status: Permanent
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A. Identification:

1. Subject Area: Engineering (EGR)
2. Course Number: 186
3. Course Title: Introduction to Engineering
4. Credit Hours: 3
5. Catalog Description: Introduction to the engineering design process. Participation in hands-on team based design projects. Development of problem solving techniques, oral and written communications skills. Create education and career plans. Pre/Co-requisite: MAT 187. Two lecture. Three lab.

B. Course Goals:

To introduce students to the academic and professional life of engineers; to explore the design process through team projects and enhance communication skills. Provide foundational structure for future engineering design coursework.

C. Course Outcomes: Upon successful completion of the course, student will:

1. demonstrate an ability to frame, solve, and evaluate the solutions of engineering problems;
2. express understanding of an engineer's professional and ethical responsibilities;
3. use EXCEL for graphing, mathematics, and basic statistics;
4. show effective communication through written reports and oral presentations;
5. design a solution to an engineering problem to meet desired needs and identify constraints;
6. work effectively on a multidisciplinary team in designated positions;
7. and list possible solutions to engineering problems and use the matrix method to weigh options.

D. Course Outcome Assessment will include:

1. written reports;
2. powerpoint presentations;
3. group projects;
4. and in-class final exam.

E. Course Content will include:

1. an introduction to the academic and professional lives of engineers;
2. ethics within the field of engineering and the general workplace;
3. the engineering design process:
 - a. problem identification;
 - b. solution methods;
 - c. evaluation of results;
 - d. cycling;
4. role and impact of engineering in contemporary economic, societal, and environmental contexts;
5. strategies for effective teamwork and communication;
6. writing technical reports and summarizing data;
7. and identification of stakeholders, cost, and material constraints.