EGR 105
Introduction to Problem-Solving in Technology

COURSE OUTLINE

Prerequisites: None

Course Description:

Teaches engineering problem solving, using hand held calculator. Applies computers to solving problems. Laboratory 3 hours per week.

Semester Credits: 3 **Lecture Hours:** Select Hours **Lab/Recitation Hours: 3**

<u>Course Outcomes</u>

At the completion of this course, the student should be able to:

- **Use a calculator to solve engineering problems**
- **Use Excel to solve engineering problems**
- **Use software tools to solve engineering problems**

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Required Materials:

Textbook:

NONE, Materials/Notes to be provided in class

Other Required Materials:

Calculator
Access to Excel (or other spreadsheet software)

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Topical Description:

Week	Topic
1	Engineering Problem-Solving Using a Calculator – Fractions
2	Engineering Problem-Solving Using a Calculator – Equations, Graphs
3	Engineering Problem-Solving Using a Calculator – Vectors/Matrices
4	Engineering Problem-Solving Using a Calculator – Symbols
5	Engineering Problem-Solving Using Excel – Graphing
6	Engineering Problem-Solving Using Excel – Cell Calculations
7	Engineering Problem-Solving Using Excel – Built-In Functions
8	Engineering Problem-Solving Using Excel – Advanced Features I
9	Engineering Problem-Solving Using Excel – Advanced Features II
10	Engineering Problem-Solving Using Other Software Tools – MATLAB
11	Engineering Problem-Solving Using Other Software Tools – MATLAB
12	Engineering Problem-Solving Using Other Software Tools – LabVIEW
13	Engineering Problem-Solving Using Other Software Tools – LabVIEW
14	Engineering Problem-Solving Using Other Software Tools – Online Tools
15	Engineering Problem-Solving Using Other Software Tools – Online Tools
16	Final Exam

Notes to Instructors

1. Course content within this course may be covered at the instructor's discretion but with all topics being understood.

2. This course and its grades will be structured around a minimum of a midterm exam, final exam, and homework.

3. At the end of the semester, all instructors will give the outcome assessment as it relates to the final exam to the program head at the same time they prepare their student final grades.