EGR 150 Intro to Engineering

COURSE DESCRIPTION:

Prerequisites: Take DRE-097 **OR** ENG-002
AND
Take DMA-010, DMA-020, DMA-030, DMA-040 and DMA-050, **OR** MAT-003 Tier 2)
Corequisites: None
Offered: Fall and Spring

This course is an overview of the engineering profession. Topics include goal setting and career assessment, ethics, public safety, system of units and dimensions, engineering principles, the engineering method and design process, written and oral communication, interpersonal skills and team building, and computer applications.
Course Hours per Week: Class, 3. Semester Hours Credit, 2.

This course has been approved for transfer under the Uniform Articulation Agreement (UAA - Associate in Engineering - A10500) and Independent Comprehensive Articulation Agreement (ICAA).

LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Describe the roles that Engineers perform in society
2. Describe the different Engineering disciplines
3. System of units and dimensions
4. Examine basic Engineering Principles
5. Interpret Code of Ethics for Engineers
6. Apply the Engineering Design Process to develop an Engineering Project
7. Examine career opportunities in Engineering
8. Develop a plan to become an Engineer
9. Work together in teams – Teamwork

OUTLINE OF INSTRUCTION:

I. Introduction, Attributes of an Engineer, and Engineering Paper
II. Engineering Disciplines, Engineer roles and career - PE, Engineering Ethics, and Engineering vs Engineering Technology
III. Significant figures and rounding, Scientific and Engineering Notation, and Prefixes and Units.
IV. Dimensional Analysis and Unit Conversion, and Estimation
V. Introduction to Excel
VI. Conservation of Energy and Bernoulli's Principle
VII. Electrical Circuit Simulation - Ohm's and Kirchhoff's Law
VIII. Career Exploration, Advising Form, and Feats Topic Assignment

IX. Project Planning and Gantt chart in Excel
X. Engineering Design Process and Feats Assignment Presentation
XI. Egg Drop Term Project
XII. SparkFun Project (Extra Credit Optional)

REQUIRED TEXTBOOK AND MATERIAL:

1. Preparing for a Career in Engineering - 1st Edition Create Space - ISBN: 9781717477071.
2. Engineering Paper, Scientific Calculator, good eraser, ruler and mechanical pencil.