COURSE SYLLABUS (2 Page)

Course Number:	ENGR 1202 (CEE)
Course Name:	Introduction to Engineering Practices and Principles II

Credits and Contact Hours: 2

Instructor: William Saunders

Textbook: *Title:*   Microsoft Excel Bible
                        Authors: John Walkenbach
                        Year: 2016

Other Supplemental Materials: Microsoft Excel VBA Programming for Dummies, John Walkenbach, 2015

Catalog Description: Applications in the disciplines of Civil, Electrical, Mechanical, and Systems Engineering using tools and techniques specific to the major. Emphasis on analytical and problem solving skills and understanding of the profession/curriculum.
Most Recently Offered (Day): Spring 2016, Fall 2015, Summer 2015
Most Recently Offered (Evening): Spring 2015, Spring 2014, Spring 2013

Pre-Requisites/Co-Requisites: ENGR 1201 (Pre- or Co-requisite with permission of department) and MATH 1241 with grades of C or above.

Course is: Required (R)

Goals: Become proficient in the use of Excel and Excel Macros to the extent that these tools can be used to solve quantitative problems in future classes; be able to convert between physical properties expressed in the English or SI unit systems; be able to apply the concept of dimensional consistency in engineering equations; be able to explain what Civil Engineers do; be able to explain the sub-disciplines within Civil Engineering; be able to design, build, and test a balsa wood bridge; and be able to prepare and present oral presentations on a balsa wood bridge project.

Student Outcomes Addressed:
In this course, students will develop the following Student Outcomes:
- A. an ability to apply knowledge of mathematics, science, and engineering
- C. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- E. an ability to identify, formulate, and solve engineering problems
- K. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Course Topics:
Professional organizations; professional licensing; different unit systems; unit conversions; dimensional consistency; significant digits; rounding; the four different Civil disciplines; EXCEL formulas, graphing, absolute and relative referencing, and solver function; VBA programming logic using flow charts, IF Statements, computations, FOR Statements, DO Loops, sub programs and variable dimensioning; truss design and balsawood bridge construction.