

## **EMC1: Macro and micro view of engineering:**

**Catalog description:** A course designed to be exciting and stimulate a student's further interest in engineering. This course will involve macro views of engineering history and micro views of electrical measurements. It would also provide the participants with an understanding of what engineering is and what engineers do.

MWF 9.10-10.00, Fall 2015. **Credit hours:** 3

### **Syllabus:**

Engineering achievements of the ancients

Fundamental laws of electrical science

Electrical materials, components, devices and integrated circuits

Electrical measurement techniques

Experiments in electrical measurements

Instrumentation systems

Acquisition of data by computer

Manipulation of data

Display of information

**Textbook/required materials:** a) Electrical Engineering, Theory and Examples, Revised 4th Edition, K.H. Norian, HRC Publishers (2009). ISBN 978-0-9772484-3-8

**Course activities:** Each student will write a term paper on an invention. The written report should include a history of the invention, a description of how the invention works, how it can be improved, on how it has affected society and civilization. Students will learn how to search the literature to find material relevant to their project. They will also hear lectures to help them understand some of the basic concepts and principles, parameters and units that underlie the tools that the engineer uses in designing and inventing products useful to society.

**Assessment:** Each student does a term paper on a project topic. Students are assessed on progress they make on the project during the semester, in their depth of understanding of the subject in a final oral presentation and on the written report on the project, and on open book tests and assignments.

**Grade determination:** Written project=30%, oral presentation of project=20%, assignments and tests =50%. Project titles due Wednesday, Sept.14. Written project reports due Monday, Oct 31. Students should notify the instructor of any absences ahead of time; otherwise they will not be given credit for missed tests/assignments. Students who stay away from class for long periods without a good excuse will fail the course. Students with special needs need to let the instructor know of these during the first week of classes. Test dates to be announced. Assignment dates depend on course progress and cannot be predicted. Project presentation dates to be announced.

K.H. Norian Aug. 23, 2016