1. Course number and name
   **EEL 3003 Introduction to Electrical Engineering**

2. Credits and contact hours
   3 cr, 2.5 contact hours (2.5 hrs. lecture)

3. Instructor’s or course coordinator’s name
   Instructor: TBA

4. Text book, title, author, and year
   Principle and Application of Electrical Engineering, Rizzoni, G., 2007

5. Specific course information
   a. *brief description of the content of the course (catalog description)*
      This course is an introduction to electrical engineering concepts for non-electrical engineering majors. Covers a broad range of topics including basic circuit theory, semiconductor devices, instrumentation, amplifiers, and machines.
   b. *prerequisites or co-requisites*
      Corequisites: MAC2312, PHY2049C
   c. *indicate whether a required, elective, or selected elective course in the program*
      Required.

6. Specific goals for the course
   a. *Course Outcomes.*
      1. Calculate power absorbed by element with passive sign convention.
      2. Identify relationship between charge versus current, voltage versus energy, and energy versus power.
      3. Identify voltage sources versus current sources, independent sources versus dependent sources.
      4. Identify the voltage-current characteristics of resistors, capacitors and inductors.
      5. Construct equivalent circuits of resistive circuits using series or parallel.
      6. Solve a resistive circuit through nodal analysis.
      7. Solve a resistive circuit through loop analysis.
      8. Identify an Operational Amplifier and its ideal characteristics.
      9. Identify a sinusoid with a phasor.
      10. Calculate the impedances of circuit elements and RLC circuits.
      11. Apply network theorems such as linearity, superposition, Thevenin’s theorem and Norton’s theorem to analyze resistive networks.
      12. Solve an AC circuit using nodal analysis, loop analysis and/or other circuit theorems.
   b. *Course Objectives and Relation to Student Outcomes.*
      No student outcomes are assessed in this course

7. Brief list of topics to be covered
   • Same as course outcomes