EEL 3111 Circuits 1

1. **Credits:** 3

2. **Text book, title, author, and year:** *Basic Engineering Circuit Analysis*, 10th edition, by J. D. Irwin and R. M. Nelms, John Wiley & Sons.
   a. **Supplemental materials:** Handouts

3. **Specific course information**
   a. **brief description of the content of the course:** Introductory to electric circuit analysis: passive and active sign conventions; Ohm's and Kirchhoff's laws; network analysis, theorems as applied to dc and ac circuits; basic op-amp circuits; single time constant transient analysis; prerequisites: MAC 2312 and PHY 2049 **Co-requisites:** MA
   c. **Required, elective, or selected elective:** Required

4. **Specific goals for the course**
   Specific outcomes of instruction: The student will underst
   voltage, current, power and energy. The student will be ab
   apply Ohm's law and Kirchhoff's voltage and current laws.
   to analyze linear circuits with resistors, capacitors, inducto
   sources. The student will learn the concept of DC and AC a
   The student will be able to effectively communicate in writ
   questions on tests.

5. **Brief list of topics to be covered**
   Chapter 1   Basic Concepts
       System of Units (SI)
       Basic Quantities
       Circuit Elements
   Chapter 2   Resistive Circuits
       Ohm's Law
       Kirchhoff's Laws
       Voltage and current division
       Dependent Sources
   Chapter 3   Nodal and Loop Analysis
       Circuits with independent sources
           Independent current sources
           Independent voltage sources
       Sources with dependent sources
           Dependent current sources
           Dependent voltage sources