EE222 – Electric Circuit Analysis II (Required Course)

Code and Name: EE222 Electric Circuit Analysis II
Credit Hours: 3 (Lecture: 3, Tutorial: 1)

Textbook:
- Electric Circuits, James Nilsson and Susan Riedel, tenth Edition, Pearson, 2014.

Other References:
- Fundamentals of Electric Circuits, Alexander & Sadiku, sixth Edition, McGraw-Hill Education, 2016.

Course Description:
Three phase analysis – RLC circuits – Mutual inductance – Ideal transformer – Two-port networks – Laplace transform – Circuit analysis in the S-domain – Frequency analysis – Frequency selective circuits.

Pre-requisites: EE 221
Co-requisites: None.

Course Learning Outcomes:
With relation to ABET Student Outcomes (SOs: 1-7)
1. Analyze Balanced Three-phase Circuits. (1)
2. Formulate the transient voltage and current RLC circuits. (1)
3. Calculate the effect of mutual inductance. (1)
4. Simplify electrical networks using the two-port technique. (1)
5. Solve problems in the S-domain. (1)
6. Demonstrate a good ability to prove mathematical results. (1, 6)

Topics to be covered:
- Balanced three phases analysis.
- Natural and step response of RLC circuits.
- Mutual inductance.
- Two-port analysis.
- The Laplace transform in circuit analysis.
- Introduction to frequency selective analysis.

Grading Policy:
The grading for the course are 60% coursework and 40% Final Exam. The coursework consist of two Midterm Exams, where each midterm exam is worth 20%. It also includes quizzes, homework, and projects for the remaining 20% that is modified by the course instructor.