EE226-Electric Circuits Lab (Required Course)

Code and Name: EE226 Electric Circuits Lab
Credit Hours: 1 (Practical:2)

Textbook:

- Lab manual Given by University.

Other References:

- Engineering Circuit Analysis, W. H. Hayt, Jr., J. E. Kemmerly, and S.M. Durbin, Seventh Edition, McGraw-Hill, 2007.
- R. C. Dorf and J. A. Svoboda, Introduction to Electric Circuits, Seventh Edition, Wiley, 2006.
- C. K. Alexander and M. N. O. Sadiku, Fundamentals of Electric Circuits, Third Edition, McGraw-Hill, 2006.
- R. E. Thomas and A. J. Rosa, The Analysis and Design of Linear Circuits, 5th Edition, Wiley, 2006.
- J. David Irwin, Basic Engineering Circuit Analysis, Seventh Edition, Wiley, 2001.

Course Description:
In this lab course the student will get hands-on experience to design, construct and analyze different Electrical circuits. Student will learn Ohm's law, Kirchoff current & voltage laws, Resistors in Series & Parallel, Thevenins & Nortons, theorem Superposition theorem & Maximum power transfer theorem verification RC circuit transient analysis & AC sinusoidal analysis. During this course the student will learn hand on experience on simulation software "Pspice", Bread board, oscilloscope & Functional generators.

Pre-requisites: EE221
Co-requisites: None

Course Learning Outcomes:
With relation to ABET Student Outcomes (SOs: 1-7)

1. Apply Basic Electic circuit principles and verify theorems. (1)
2. Solve Basic Electric circuit problems by using linear algebra and simple calculus. (1)
3. Combine different elements to form circuits. (6)
4. Using Pspice and Com3 lab. (6)
5. Simulation tools. (6)
6. Solve practical problem logically using correct theoretical concepts. (1)
7. Lab procedure. (6)

Topics to be covered:

- Ex.1 Introduction to Pspice Circuit analysis
- Ex.2. Introduction to Bread Board & Resistance color coding.
- Ex. 3 Series, parallel Circuits & Bridge connected Circuit
- Ex4 Kirchoff's Current law & Kirchoff's voltage law.
- Ex.5 Superposition Theorem
- Ex.6. Thevenin's & Norton's theorem
- Ex. 7 Maximum power transfer theorem
- Ex.8. Oscilloscope & function generator
- Ex.9. Transient of first order RC circuit
- Ex.10. AC Response on R, RL, RC and RLC Circuits
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Grading Policy: check
The grading for the course are 60% coursework and 40% Final Exam. The coursework consists of one Midterm Exam, where the midterm exam is worth 20%. It also includes quizzes and lab reports for the remaining 40% that is modified by the course instructor.