Electric Circuits－Syllabus

(09720 EE 221000. M5M6R5; http://mx.nthu.edu.tw/~cbhuang ➔ Courses)

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Course Description:

From this course, you will learn the basic concepts of electric circuits and the skills in analyzing these circuits.

Text book: "Electric Circuits", 8th ed., by J. W. Nilsson and S. A. Riedel, Pearson.

Teaching Method: Lectures in English.

Course Outline:

1. Circuit variables and elements.
2. Kirchhoff's Voltage Law and Kirchhoff's Current Law.
3. Basic analytical technique, the node analysis and the mesh analysis techniques.
4. Linear circuit theorems, superposition, Thevenin's and Norton's equivalent.
5. Operational amplifiers and Two-port circuits
6. Capacitance, Inductance, and Mutual Inductance
7. First-Order and Second-Order Circuit Analysis
8. State Equation in Circuit Analysis
9. Sinusoidal Steady-State Analysis
10. Sinusoidal Steady-State Power Calculations
11. Balanced Three-Phase Circuits
12. The Laplace Transform and its application in circuit analysis.
13. Fourier Series and its application in circuit analysis.

Grading:

Assignments and quizzes (30%), 2 midterm exams (40%), and final exam (30%).
Midterm exam 1: 3/30
Midterm exam 2: 5/11

Ethics policy:

As a student of NTHU, you should always bear honor and confidence in your mind. You should be responsible for your own grade and in a longer term, your future. You can start by finishing your own class assignments. Plagiarism in any form is unacceptable. The plagiarist will receive a (-100)% for that assignment. I do, however, encourage discussions among classmates. Misconducts during examinations will result in failure of this course.