

Electric Circuits—Syllabus

(09920 EE 221000; M3M4W2; EECS 105; <http://moodle.nthu.edu.tw/>)

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Course Description:

You will learn the basic concepts of electric circuits and the skills in analyzing these circuits. You must work HARD to build a solid foundation in order to pass.

Text book: “Electric Circuits”, 9th 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. Capacitance, Inductance, and Mutual Inductance
6. {First-order} and {Second-order} Circuit Analyses
7. Sinusoidal Steady-State Analysis
8. Sinusoidal Steady-State Power Calculations
9. Balanced Three-Phase Circuits
10. The Laplace Transform and its application in circuit analysis.
11. Fourier Series and its application in circuit analysis.

Grading policy:

Assignments and quizzes (40%): no normalization.

Midterm exam 1 (20%): 3/21 in class (tentative)

Midterm exam 2 (20%): 5/02 in class (tentative)

Final exam (20%)

Bonus: you can earn bonus point by asking or answering good questions!

Textbook Edition:

We will be using the 9th edition. So make sure you have the problems right before you work on the homework problems!

Ethics policy:

As a student of NTHU, you are here to learn.

1. 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.
2. Plagiarism in any form is unacceptable. The plagiarist will receive a (-100)% for that assignment. I do, however, encourage discussions among classmates.
3. Misconducts during examinations will result in failure of this course.
4. Overly active club participation makes no excuse for late homeworks and/or missing exams.