

North Hennepin Community College

ENGR 2501: Circuit Analysis I

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites:

This course requires any of these five prerequisite categories

1. MATH 1222 - Calculus II (Minimum grade: 1.67 GPA Equivalent)

Or

2. MATH 2010 - Probability and Statistics

Or

3. MATH 2220 - Calculus III (Minimum grade: 1.67 GPA Equivalent)

Or

4. MATH 2300 - Linear Algebra (Minimum grade: 1.67 GPA Equivalent)

Or

5. Both of these

MATH 2400 - Differential Equations (Minimum grade: 1.67 GPA Equivalent)

PHYS 1602 - General Physics II

Corequisites: None

MnTC Goals: None

This course is designed for people interested in electrical, civil and mechanical engineering, computer science and the Bachelor of Information Networking degree. The topics to be covered include: Kirchhoff's Laws, mesh analysis, nodal analysis, source transformations, superposition, Thevenin's and Norton's Theorems, operational amplifiers, first order response of RL and RC circuits, natural and step response of RLC circuits, sinusoidal steady-state analysis and power calculations and balanced three phase circuits. This is the first course in a two course sequence. (4 hours lecture) Prerequisite: Physics 1601 and Math 1222

B. COURSE EFFECTIVE DATES: 08/27/1997 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Academic Content: circuit variables, circuit elements, simple resistive circuits, techniques of circuit analysis, operational amplifiers, inductance, capacitance, mutual inductance, response of first-order RC and RL circuits, natural and step response of RLC circuits, sinusoidal steady-state analysis, sinusoidal steady state power calculations, balanced three-phase circuits.

D. LEARNING OUTCOMES (General)

1. Course Outcomes: An understanding of the basic circuit principles and an ability to solve problems involving these principles

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted