Course Name: ENR-235 Engineering Circuit Analysis I

Date Updated: 2/2022

Credit Hours/week: 3 hrs./wk. – 3 cr.

BEGINNING: SPRING 2022

Catalog Description: This first course in engineering circuit analysis covers DC circuit analysis including source transformations, mesh, nodal, superposition, Thevenin and Norton theorems, and the maximum power transfer theorem. Dependent as well as independent sources are included. Transient response of RC, RL and RLC circuits is introduced. Steady-state analysis of single and three phase AC systems is studied using phasor diagrams and the network theorems mentioned above. Real, reactive, apparent power and power factors are included. Use of the computer as a problem-solving tool is included in the course.

Prerequisite: MAT-132

Text: Alexander & Sadiku, Fundamentals of Electric Circuits, McGraw Hill

Supplementary Material: Specialized equipment, supplies, facilities, for classes limited by enrollment or restricted by accreditation and/or equipment limitations:

Syllabus:

Topics
Basic Circuit Elements and Concepts
DC Series and Parallel Circuits
Techniques of Circuit Analysis
Inductance and Capacitance
Natural and Step Response of RL and RC Circuits
Natural and Step Response of RLC Circuits
AC Circuit Analysis Techniques
AC Power Calculations
Balance Three-Phase Circuits

Format for Offering this Course: None Listed

Students are expected to adhere to the policies of the County College of Morris. These can be accessed at: (insert link here)

Statement of Expected Course LEARNING OUTCOMES

- None Listed

Statement of Relation to Curriculum(s):

Technical elective in the Engineering Science curriculum intended for students majoring in Electrical Engineering.