



Course Name: ELT-102 Circuit Measurements and Fundamentals

Date Updated: 2/2022

Credit Hours/week: Lab 1 hr./wk.- 1 cr.

BEGINNING: SPRING 2022

Catalog Description: An introductory course in electrical circuit analysis and measurement. This course will cover topics in DC and AC circuits, as well as the instruments needed to properly characterize the behavior of these types of circuits. This course is required by the majors in the Electronics Engineering Technology and the Biomedical Equipment Options and will serve as a supplement to material covered in the Circuit Analysis course.

Prerequisite: MAT-110 College Algebra, ELT 132 Introduction to Experimentation and Design

Corequisite: ELT-100 Circuit Analysis DC/AC

Text: None

Supplementary Material: Laboratory course that needs to run in SH-159 or SH-161

Specialized equipment, supplies, facilities, for classes limited by enrollment or restricted by accreditation and/or equipment limitations: (Information will be used to determine differential funding category.)

Syllabus:

Topics
DC Circuits
Ohm's law
Kirchhoff's Law
Other Techniques for Circuit Analysis such as Thevenin Norton and Substitution
AC Signals and Waveforms
Reactance and Resonance
Circuit Measurements
Voltage Divider Rule
Maximum Power Theorem

Format for Offering this Course: Traditional

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

- Define Voltage Current and Resistance
- Apply Ohm's Law to solve problems involving voltage, current and resistance
- Apply Thevenin or Norton theorems to find the equivalent circuit
- Demonstrate the proper use of a multi-meter to measure voltage, current and resistance
- Demonstrate the proper use of an oscilloscope to measure amplitude and frequency

Statement of Relation to Curriculum(s):

This course is required in the Electronics Engineering Technology (P3600) and Biomedical Equipment Option (3601) programs.