NVCC COLLEGE-WIDE COURSE CONTENT SUMMARY

ETR 113 - DC FUNDAMENTALS (4 CR.)

COURSE DESCRIPTION

Study of DC circuits, capacitors, magnetism and inductors. The concepts of equivalent circuits and network theorems as applied to DC circuit analysis. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GENERAL COURSE PURPOSE

ETR 113 is designed as a one semester, lecture and laboratory course covering circuit fundamentals.

ENTRY LEVEL COMPETENCIES

Prerequisite or corequisite is MTH 166 – “Precalculus with Trigonometry”.

COURSE OBJECTIVES

As a result of the learning experiences provided in this course, the student should be able to:

A. know the basic principles associated with DC circuits and circuit elements
B. know the circuit properties of capacitance and inductance
C. know the techniques and theorems of network analysis as applied to direct current circuits

MAJOR TOPICS TO BE INCLUDED

LECTURE

A. Current & voltage
B. Resistance
C. Work & power
D. Series & parallel resistances
E. Network theorems and equivalent circuits
F. Capacitance - magnetism - inductance

LABORATORY

A. Laboratory equipment familiarization
B. Resistor color code/ohmmeter
C. OHM’s law
D. Series circuits
E. Parallel circuits
F. Series/Parallel circuits
G. Voltmeter loading
H. Superposition theorem
I. Thevenin’s theorem
J. Wheat stone Bridge
K. Voltage rise in a capacitor
L. Soldering Techniques