STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

MASTER SYLLABUS

ELEC 129 – ELECTRIC CIRCUITS (II) LAB

Prepared By: Stephen E. Frempong

SCHOOL OF ENGINEERING TECHNOLOGY
ELECTRICAL ENGINEERING TECHNOLOGY & ENGINEERING
SCIENCE DEPARTMENT
FALL 2018

A. TITLE : ELECTRIC CIRCUITS (II) LABORATORY

B. COURSE NUMBER: ELEC 129

C. CREDIT HOURS: (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 1 %
Lecture Hours: per week
Lab Hours: 2 per week
Other: per week

Course Length: 15 Weeks

D. WRITING INTENSIVE COURSE: YES

E. GER CATEGORY: NONE

F. SEMESTER OFFERED: SPRING/FALL

G. COURSE DESCRIPTION: A continuation of Electric Circuits (I) Laboratory, stressing the understanding of AC analysis that involves resistive, capacitive, and inductive circuits. Also, impedance, resonance, filters and transformers are covered. Students will perform ac circuit experiments using laboratory test equipment. Two hours laboratory per week.

H. PRE-REQUISITES: Electric Circuits (I) ELEC 101 and ELEC 109, or permission of instructor.

CO-REQUISITES: NONE

I. STUDENT LEARNING OUTCOMES

Institutional Student Learning Outcome (ISLO's)
(1) Communication Skills (2) Critical Thinking (3) Foundational Skills (4) Social Responsibility (5) Industry, Professional, Discipline-Specific Knowledge and Skills.

Accreditation Board for Engineering and Technology ABET- Student Outcomes (a-k)

Course Objectives	**ABET- Student Outcomes (a-k)**	**ISLO's**
(1) The ability to use Oscilloscope to measure voltage and frequency.	(a) An ability to select and apply the knowledge, techniques, skills, and modern	(5) Industry, Professional, Discipline-Specific Knowledge and Skills.

	tools of the discipline to broadly-defined engineering technology activities.	
(2) Build, test, and perform calculations for Resistive, Inductive, and Capacitive Circuits.	(c) An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes. (b) An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies.	(2) Critical Thinking (5) Industry, Professional, Discipline-Specific Knowledge and Skills.

J. APPLIED LEARNING COMPONENTS: LAB

K. TEXTS: Laboratory Manual to Accompany Introductory Circuit Analysis
13/e, By – Boylestad and Kousourou ISBN: 0132196158
Publisher: Prentice Hall

L. REFERENCES: Electric Circuits Fundamentals
By – Floyd ISBN: 0130163945
Publisher: Prentice Hall

M. EQUIPMENT: Students need to purchase laboratory components (kit) from the bookstore. All other equipment needed will be made available in the lab.

N. GRADING METHOD: Grade is based on Midterm, Lab Projects, and Final Exam.

O. SUGGESTED MEASUREMENT CRITERIA/METHODS: Group or individual Project, and Test.

P. ETAILED TOPICAL OUTLINE: NONE

Q. LABORATORY OUTLINE: YES

AC Experiments:

1. The Oscilloscope
2. R-L-C Components
3. Frequency Response of R, L, and C Components
4. Frequency Response of the Series R-L Network
5. Frequency Response of the Series R-C Network
6. The Oscilloscope and Phase Measurements
7. Series Sinusoidal Circuits
8. Parallel Sinusoidal Circuits
9. Series-Parallel Sinusoidal Circuits
10. Thevenin's Theorem and Maximum Power Transfer
11. Series Resonant Circuits
12. Parallel Resonant Circuits
13. Passive Filters
14. The Transformer