

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



MASTER SYLLABUS

**COURSE NUMBER – COURSE NAME
ENGS 264 – Eletrical Circuits laboratory**

Created by: Rashid Aidun, Ph.D.

Updated by: Rashid Aidun, Ph.D.

Canino School of Engineering Technology

Department: Electrical and Engineering Science

Semester/Year: Fall 2018

A. **TITLE:** Electrical Circuits Laboratory

B. **COURSE NUMBER:** ENGS 264

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 No

E. **GER CATEGORY:** None: Yes: GER
If course satisfies more than one: GER

F. **SEMESTER(S) OFFERED:** Fall Spring Fall & Spring

G. **COURSE DESCRIPTION:**

Two hours per week. Basic concepts and principles of direct current and DC voltage are stressed in this introductory laboratory. Students will analyze resistive, capacitive and inductive circuits through practical laboratory application. Students will also study circuits using circuit analysis software

H. **PRE-REQUISITES:** None Yes If yes, list below:

CO-REQUISITES: None Yes If yes, list below:

ENGS 263, Electric Circuits

I. STUDENT LEARNING OUTCOMES: (see key below)

By the end of this course, the student will be able to:

<u>Course Student Learning Outcome</u> <i>[SLO]</i>	<u>Program Student Learning Outcome</u> <i>[PSLO]</i>	<u>GER</u> <i>[If Applicable]</i>	<u>ISLO & SUBSETS</u>	
Recognize and select electrical components to construct electrical circuits	Prepare students to utilize modern computational tools for engineering programming, analysis, and design		5-Ind, Prof, Disc, Know Skills 4-Soc Respons ISLO	Subsets T Subsets Subsets
Apply the knowledge, techniques, skills, and modern tools to test and troubleshoot electrical circuits	Prepare students to utilize modern computational tools for engineering programming, analysis, and design		5-Ind, Prof, Disc, Know Skills 4-Soc Respons ISLO	Subsets T Subsets Subsets
Conduct standard tests and measurements; analyze, and interpret experiments; and to apply experimental results to improve processes	Prepare students to utilize modern computational tools for engineering programming, analysis, and design		2-Crit Think 5-Ind, Prof, Disc, Know Skills 4-Soc Respons	CA Subsets T Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets

KEY	<u>Institutional Student Learning Outcomes [ISLO 1 – 5]</u>
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA], Inquiry & Analysis [IA], Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
5	Industry, Professional, Discipline Specific Knowledge and Skills

*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes No

If YES, select one or more of the following categories:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Classroom/Lab | <input type="checkbox"/> Civic Engagement |
| <input type="checkbox"/> Internship | <input type="checkbox"/> Creative Works/Senior Project |
| <input type="checkbox"/> Clinical Placement | <input type="checkbox"/> Research |
| <input type="checkbox"/> Practicum | <input type="checkbox"/> Entrepreneurship |
| <input type="checkbox"/> Service Learning | (program, class, project) |
| <input type="checkbox"/> Community Service | |

K. **TEXTS:**

Instructions provided by instructor

L. **REFERENCES:**

M. **EQUIPMENT:** None Needed: All equipment and parts are provided in the laboratory

N. **GRADING METHOD:** A - F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

Lab reports	40%
Lab practical	40%
Participation & Team Work	20%

P. **DETAILED COURSE OUTLINE:**

None

Q. **LABORATORY OUTLINE:** None Yes

Ohm's Law and Kirchhoff's Laws

Series dc Circuits

Parallel dc Circuits

Rheostats and Potentiometer

Series-Parallel dc Circuits

Wheatstone Bridge

Superposition Theorem (dc)

Thevenin's Theorem

Maximum Power Transfer

Norton's Theorem and Current Sources

Operational Amplifier circuits I

Operational Amplifier circuits II

RL Circuits

RC Circuits

and R-L-C Circuits