

**MASTER SYLLABUS**

**ELET-103 Circuit Analysis**

**Course Lecture-Lab-Credit and/ Contact Hours**: 3-0-3 / 3

**Course Maximum Enrollment:** 16

**Lab Fee**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Special Facility or Equipment Needs/Safety Rules and Issues**:

**Lab Fee:** None

**Course Title:** Circuit Analysis

**Course Prefix and Number:** ELET-103

**Course Description**:

Investigation of DC circuits with emphasis on problem solving practical electric circuits. A written report is required. Emphasis on computer analysis using BASIC programming language.

**Pre- and/or Co-requisites**:

Co-requisite: ELET 101, Math 097 recommended

**Course Goal**:

Students will be able to analyze DC Circuits using a mathematical approach.

**Student Learning Outcomes**: A student who successfully completes this course will be able to:

1. Analyze and solve problems involving systems of units and units of measurement.
2. Analyze and solve problems involving the concepts of voltage, current, resistance, capacitance and inductance.
3. Analyze and solve problems involving series and parallel circuits.
4. Analyze and solve problems involving transient periods in DC circuits.
5. Analyze and solve problems using Mesh & Nodal Analysis
6. Analyze and solve problems using Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power Transfer Theorem.
7. Write a technical paper.

**Course Content**:

1. Systems of units and units of measurement.
2. Current and Voltage
3. Resistance. Ohm's Law.
4. Power and Energy.
5. Series Circuits
6. Parallel Circuits.
7. Series Parallel Networks.
8. Mesh analysis, Nodal analysis, Bridge networks, Y-Delta Conversions. Computer methods with BASIC programming and MULTISIM.
9. Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power Transfer Theorem.
10. Capacitors and the electric field. Transients in RC Networks.
11. Magnetic circuits and Faraday's Law. Inductors & Transients in RLC Networks.

**Texts and Readings**:

Required: Introductory Circuit Analysis & Experiments in Circuit Analysis by Boylestad (latest edition, 10th) and corresponding lab book or similar textbook/lab manual

 **Assessment**:

1. Quizzes
2. Midterm
3. Lab Reports
4. Final Exam
5. Class participation

**ELET Student Outcomes Realized:**

1. Apply the knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline.
2. Function effectively as a member of a technical team. **(Teamwork)**
3. Explain the need for and engage in self-directed continuing professional development. **(Professional Development)**

This course contributes 3 (of 42) technical content credit hours.

**DISABILITY STATEMENT:** It is the general policy of Delgado Community College to provide an equal opportunity for academic success to all students. Reasonable accommodations for a student with a disability will be made provided the student has self-identified with the Office of Disability Services and has provided the required documentation. Instructors will appropriately modify their methods of instruction, course and examination requirements and general procedures to accommodate the special needs of the student provided the academic integrity of the course or examination is not violated and the accommodation does not jeopardize the health and welfare of all students. Accommodations will not be made without the letter of accommodation from the Office of Disability Services. {[Contact Information](http://www.dcc.edu/student-services/advising/disability-services/faculty-staff-resources/syllabi-statement.aspx) is included on Course Syllabus and is not listed on the Master Syllabus. The Master Syllabus statement ends prior to bracketed sentence.}

**Academic Honesty Statement:** Delgado Community College requires that students adhere to the highest standards of academic integrity. Students are entrusted to be honest in every phase of their academic life and to present as their own work only that which is genuinely theirs. Cheating, plagiarism, violation of test conditions, complicity in dishonest behavior, or other falsification of academic work is a serious breach of College standards.

Plagiarism is defined as any attempt to represent the work of another as one's own original work. More specifically, plagiarism is the direct appropriation of the language, thoughts, or ideas of another--either literally or in paraphrase--without appropriate notation on the source and in such fashion as to imply that the work is one's own original work.

Depending upon the nature of the case, a student guilty of academic dishonesty may receive penalties ranging from a grade of "F" for the work submitted to expulsion from the College. Such penalties may be of both an academic and disciplinary nature.  Please see the *College Catalog* for additional information.

**Title IX Statement:** Delgado Community College is committed to creating and maintaining an environment in which sexual violence against men and women is not tolerated. Intervening in such instances helps to foster a safe environment for all, while sending a message that this kind of behavior will not be tolerated and is unacceptable in our community. As part of its commitment to providing an educational environment free from discrimination, Delgado Community College complies with Title IX of the Education Amendments, which prohibits discrimination and harassment based upon sex in an institution’s education programs and activities. Title IX prohibits sexual harassment, including sexual violence, of students at Delgado Community College sponsored activities and programs whether occurring on-campus or off-campus. {[Contact Information](http://www.dcc.edu/title-ix/default.aspx) included on Course Syllabus and is not listed on the Master Syllabus. The Master Syllabus statement ends prior to bracketed sentence.}

 *AA-1503.1A Master Syllabus Format Approved:*

*Curriculum Committee 9/29/17, Vice Chancellor for Academic Affairs 11/20/17*