

**MASTER SYLLABUS**

**ELET-101 Electrical Circuits I**

**Course Lecture-Lab-Credit and/ Contact Hours**: 3-3-4 / 6

**Course Maximum Enrollment:** 16

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

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

This course requires a lab environment. (Lab equipment, Calculator and ELET Safety Rules)

**Course Title:** Electrical Circuits 1

**Course Prefix and Number:** ELET-101

**Course Description**:

This course introduces the student to the basic principles and components used in the electrical/electronics industry as well as an introduction to computer programming using BASIC. The course will provide a practical introduction to the key concepts of the discipline. An overview of various electrical-electronics engineering technology specializations and job opportunities within the fields will be given.  Students will gain an appreciation for the required program curriculum and will be introduced to campus library resources and the Internet to write papers and give presentations.

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

ELET 103, Math 097 recommended

**Course Goal**:

The Students will be able to demonstrate knowledge of resistance, capacitance, inductance current and voltage presented first individually by analogous systems, then in electrical systems. Students will be introduced to BASIC programming with several examples of circuit analysis used in BASIC programming. Students learn to make lab reports and oral presentations. Lab and industry safety-related issues and practices will be explained and discussed.

|  |  |  |
| --- | --- | --- |
|  |  |  |

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

1. Demonstrate knowledge of the courses required to complete the Electrical-Electronics Engineering

Technology program.

1. Learn to use college-wide resources.
2. Apply basic programming skills.
3. Explain the concepts of voltage, current, resistance, capacitance and inductance.
4. Demonstrate proficiency in the use of electrical meters.
5. Use lab equipment to analyze and troubleshoot circuits.
6. Demonstrate proficiency in the identifying circuit components on a schematic drawing and in a lab

setting.

1. Analyze and solve series and parallel circuits.
2. Analyze series parallel circuits using BASIC program.
3. Analyze transient periods in DC circuits.

**Course Content**:

1. Systems of units and units of measurement.
2. Current and Voltage
3. Resistance.  Ohm's Law.
4. Power and Energy. Basic program.
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) or similar textbook

**Assessment**:

1. Quizzes and home tests 20%
2. Midterm 20%
3. Lab Reports 30%
4. Final Exam & class participation 30%

**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. Apply written, oral, and graphical communication in well-defined technical and non-technical environments; identify and use appropriate technical literature.
3. Conduct standard tests, measurements, and conduct, analyze and interpret experiment results.  
   Function effectively as a member of a technical team. **(Teamwork)**
4. Explain the need for and engage in self-directed continuing professional development. **(Professional Development)**
5. Address professional and ethical responsibilities, including a respect for diversity. **(Ethics & Respect for Diversity)**

This course contributes 4 (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*