



# INSTRUCTIONAL PACKAGE

EET 113

Electrical Circuits I

Effective Term  
Fall 2019

# INSTRUCTIONAL PACKAGE

## Part I: Course Information

Effective Term: 2019.10

COURSE PREFIX: EET 113

COURSE TITLE: Electrical Circuits I

CONTACT HOURS: 6

CREDIT HOURS: 4

### **RATIONALE FOR THE COURSE:**

This course serves as a fundamental course in the EET curriculum. The student will learn basic theories and practices that will be used throughout the study of electronics engineering technology and beyond into the workplace. This course is the first part of a two-course sequence: EET 113 Electrical Circuits I and EET 114 Electrical Circuits II. This course focuses primarily on DC circuits. The second part of this sequence, EET 114, focuses primarily on AC circuits.

### **COURSE DESCRIPTION:**

This course is a study of direct and alternating currents, covering resistance and impedance in series, parallel, and series-parallel circuits using Ohm's Law, Kirchhoff's Laws, and basic circuit theorems. Circuits are analyzed using mathematics and verified using electrical instruments.

### **PREREQUISITES/CO-REQUISITES:**

(Credit level MAT 101 Minimum Grade of C or Credit level MAT 101 Minimum Grade of TC or Credit level MAT 102 Minimum Grade of C or Credit level MAT 102 Minimum Grade of TC or Credit level MAT 110 Minimum Grade of C or Credit level MAT 110 Minimum Grade of TC) or COMPASS Algebra 46 or ACCUPLACER Elementary Algebra 075 or New ACCUPLACER Adv Algebra 230 or COMPANION Elementary Algebra 075 or SAT Mathematics 460 or New SAT Mathematics 500 or ACT Math 19 or (Multiple Measures Math 1)

### **REQUIRED MATERIALS:**

Please visit the Bookstore online site for most current textbook information. Use the direct link below to find textbooks.

[BOOKSTORE](#).

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

### **ADDITIONAL REQUIREMENTS:**

Scientific calculator, USB flash drive.

### **TECHNICAL REQUIREMENTS:**

Access to Desire2Learn (D2L), HGTC's student portal for course materials.  
WaveNet and D2L email access.

### **STUDENT IDENTIFICATION VERIFICATION**

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

### **CLASSROOM ETIQUETTE:**

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

**NETIQUETTE:** is the term commonly used to refer to conventions adopted by Internet users on the web, mailing lists, public forums, and in live chat focused on online communications etiquette. For more information regarding Netiquette expectations for distance learning courses, please visit [Online Netiquette](#).

## **Part II: Student Learning Outcomes**

### **COURSE LEARNING OUTCOMES and ASSESSMENTS\*:**

1. SYSTEMS, QUANTITIES, AND UNITS
  - 1.1. Use scientific notation to represent quantities
  - 1.2. Work with electrical units and metric prefixes
  - 1.3. Recognize electrical hazards and practice proper safety procedures
2. VOLTAGE, CURRENT, AND RESISTANCE
  - 2.1. Explain the concept of electrical charge
  - 2.2. Define voltage and discuss its characteristics
  - 2.3. Define current and discuss its characteristics
  - 2.4. Define resistance and discuss its characteristics
  - 2.5. Make basic circuit measurements
3. OHM'S LAW, ENERGY, AND POWER
  - 3.1. Use Ohm's law to determine voltage, current, or resistance
  - 3.2. Define energy and power
  - 3.3. Calculate power in a circuit
  - 3.4. Describe a basic approach to troubleshooting
4. SERIES CIRCUITS
  - 4.1. Identify a series resistive circuit
  - 4.2. Determine total series resistance
  - 4.3. Apply Ohm's law in series circuits

- 4.4. Apply Kirchhoff's voltage law
- 4.5. Use a series circuit as a voltage divider
- 5. PARALLEL CIRCUITS
  - 5.1. Identify a parallel resistive circuit
  - 5.2. Determine total parallel resistance
  - 5.3. Apply Ohm's law in a parallel circuit
  - 5.4. Apply Kirchhoff's current law
  - 5.5. Use a parallel circuit as a current divider
- 6. SERIES-PARALLEL CIRCUITS
  - 6.1. Identify series-parallel relationships
  - 6.2. Analyze and apply a Wheatstone bridge
  - 6.3. Apply Thevenin's theorem to simplify a circuit for analysis
  - 6.4. Apply the maximum power transfer theorem
  - 6.5. Apply the superposition theorem to circuit analysis

***\*Students – please refer to the Instructor's Course Information sheet for specific information on assessments and due dates.***

### **Part III: Grading and Assessment**

#### **EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS\***

Students' performance will be assessed and the weight associated with the various measures/artifacts are listed below.

#### **EVALUATION\***

Exams .....	30%
Labs .....	30%
Homework Assignments.....	20%
Class Participation .....	5%
Final Exam.....	<u>15%</u>
	100%

***\*Students, for the specific number and type of evaluations, please refer to the Instructor's Course Information Sheet.***

#### **GRADING SYSTEM:**

HGTC has a standardized, recommended grading scale for academic courses. The grading scale requires that grades within the indicated range be defined as follows:

A: 90-100      B: 80-89      C: 70-79      D: 60-69      F: Below 60

The following grades are used:

A - EXCELLENT: used in GPA calculations; carries a value of 4 quality points and earns credit hours.  
B - ABOVE AVERAGE: used in GPA calculations; carries a value of 3 quality points and earns credit hours.

C - AVERAGE: used in GPA calculations; carries a value of 2 quality points and earns credit hours.

D - BELOW AVERAGE: used in GPA calculations; carries a value of 1 quality point and earns credit hours.

F - FAILURE: used in GPA calculations; carries a value of 0 quality points and earns 0 credit hours. (Hours attempted are used in GPA calculations.)

I - INCOMPLETE: does not affect GPA calculations; defaults to "F" automatically after one term if the incomplete work has not been completed and generates 0 quality points and 0 credit hours. (See special note below.)

WF - WITHDRAWN FAILURE: used in GPA calculations; carries a value of 0 quality points and earns 0 credit hours. (Hours attempted are used in GPA calculations.)

W - WITHDRAW: not used in GPA calculations; carries a value of 0 quality points and earns 0 credit hours. May be utilized when extenuating circumstances warrant.

Note: Regarding a grade of "I" (Incomplete): A grade of Incomplete ("I") is assigned when the student does not complete work or take the final exam due to illness or for other reasons over which the student has no control. This grade is given only with the approval of the professor involved. An incomplete must be completed by the end of the following term. Otherwise, the grade becomes an automatic failure ("F").

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the academic calendar for deadlines for add/drop ([ACADEMIC CALENDAR](#)). You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

## Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

**For online and hybrid courses**, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, if you use a testing center other than those provided by HGTC, the center may charge a fee for its

services.

## Part V: Student Resources

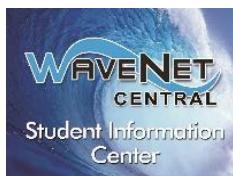


### The Student Success and Tutoring Center (SSTC)

The SSTC offers to all students the following **free** resources:

1. **Academic coaches** for most subject areas, **Writing Center Support**, and **college success skills**.
2. **On-line student success and academic support resources**.

Visit the SSTC website: [Student Success & Tutoring Center](#) and visit the student services tab in your WaveNet account to schedule appointments using TutorTrac. For more information, call: SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455 or go to the [Online Resource Center](#) to access on-demand resources any time.



### Student Information Center: WaveNet Central (WNC)

WNC offers to all students the following **free** resources:

1. **Getting around HGTC**: General information and guidance for enrollment!
2. Use the [Online Resource Center \(ORC\)](#) for COMPASS support, technology education, and online tools.
3. **Drop-in technology support or scheduled training** in the Center or in class.
4. **In-person workshops, online tutorials and more services** are available.

Visit the WNC website: [Wavenet Central](#). Live Chat and Center locations are posted on the website. Or please call one of the following locations: WNC Conway, 349-5182; WNC Grand Strand, 477-2076; and WNC Georgetown, 520-1473.

## Disability Services:

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to Beth Havens, Director of Student Development on the Conway Campus Jaime Davis, Counselor/Advisor on the Georgetown Campus or Kristin Griffin, Counselor on the Grand Strand Campus. These individuals will review documentation of the student's disability and, in a confidential

setting with the student, develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided.

## **Statement of Equal Opportunity/Non-Discrimination Statement**

Horry-Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation in educational programs and/or activities.

Inquiries regarding the non-discrimination policies: Students and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs, Dr. Melissa Batten, VP Student Affairs, Title IX Coordinator, Building 1100, Room 107A, Conway Campus, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, [Melissa.Batten@hgtc.edu](mailto:Melissa.Batten@hgtc.edu). Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources, Jacquelyne Snyder, VP Human Resources, Section 504, Title II, and Title IX Coordinator, Building 200, Room 212A, Conway Campus, PO Box 261966, Conway, SC 29528-6066, 843-349-5212, [Jacquelyne.Snyder@hgtc.edu](mailto:Jacquelyne.Snyder@hgtc.edu).

### **Title IX Requirements**

All students (as well as other persons) at Horry-Georgetown Technical College are protected by Title IX—regardless of their sex, sexual orientation, gender identity, part- or full-time status, disability, race, or national origin—in all aspects of educational programs and activities. Any student, or other member of the college community, who believes that he/she is or has been a victim of sexual harassment or sexual violence may file a report with the college's Chief Student Services Officer, campus law enforcement, or with the college's Title IX Coordinator, or designee.

\*Faculty and Staff are required to report incidents to the Title IX Coordinators when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

<b>Inquiries regarding the non-discrimination policies:</b>	
Student and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs.	Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources.

<p><b>Inquiries regarding the non-discrimination policies:</b></p>	
<p><b>Dr. Melissa Batten, VP Student Affairs</b>  <i>Title IX Coordinator</i></p> <p>Building 1100, Room 107A, Conway  Campus  PO Box 261966, Conway, SC 29528-6066  843-349-5228  <a href="mailto:Melissa.Batten@hgtc.edu">Melissa.Batten@hgtc.edu</a></p>	<p><b>Jacquelyne Snyder, VP Human Resources</b>  <i>Section 504, Title II, and Title IX Coordinator</i></p> <p>Building 200, Room 212A, Conway Campus  PO Box 261966, Conway, SC 29528-6066  843-349-5212  <a href="mailto:Jacquelyne.Snyder@hgtc.edu">Jacquelyne.Snyder@hgtc.edu</a></p>