



## Course Syllabus **ELPT 1311 – Basic Electrical Theory**

Aug 25 to Dec 08, 2016

Course Length – 16 weeks

CRN # 17991/Credits – 3 hours

Prerequisite/Corequisite: TECM 1301

### **Instructor contact information**

Matt Adams  
[walter.adams2@hccs.edu](mailto:walter.adams2@hccs.edu)

### **Office Location and Hours**

*Please feel free to contact me concerning any problems that you are experiencing in this course. Your success in this class is very important to me. I am available to hear your concerns and to discuss course topics. Feel free to schedule an appointment or meet with me after class:*

### **Course Location/ Times**

Willie Lee Gay Hall / South Campus Room # 101  
**Thursdays 4:00 pm to 9:20 pm**

### **Course Description**

ELPT 1311 is an introduction to electrical theory using testing equipment, mathematics, and understanding of formulas to solve electrical circuits: series, parallel, and combination.

### **Instructional Materials**

Herman, Stephen. *Delmar's Standard Textbook of ELECTRICITY*.  
(Sixth Edition). Please obtain it at a HCC Bookstore.  
ISBN-10: 1-285-85270-2  
ISBN-13: 978-1-285-85270-6

### **Course Student Learning Outcomes (SLO)**

- Explain atomic structure and basic values such as voltage, current, resistance, and power
- Determine electrical values for combination circuits in direct current (DC) and alternating current containing resistance, inductance, and capacitance
- Summarize the principles of magnetism
- Calculate voltage drop based on conductor length, type of material, and size
- Utilize electrical measuring instruments
- Build a project by the end of the semester

### **Student's Requirements**

To be successful in this class, it is the student's responsibility to:

- Attend class and participate in class discussions and activities.
- Read and comprehend the textbook.
- Complete the required assignments and exams:
- Ask for help when there is a question or problem.
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments.
- Complete the course with a passing score.

## COURSE POLICIES

<b>Attendance</b>	Students are expected to attend classes regularly, and to be on time for every class period. Students can be dropped from a class due to excessive absences. Excessive tardiness may be considered absences. Students are responsible for subjects, assignments, and projects covered during their absences. Consult the <b><i>Student Handbook</i></b> for more details or visit <a href="http://www.hccs.edu/hccs/current-students/student-handbook">http://www.hccs.edu/hccs/current-students/student-handbook</a>
<b>Academic Honesty</b>	Scholastic dishonesty is treated with the utmost seriousness by the instructor and the College. Academic dishonesty includes, but it is not limited to the willful attempt to misrepresent one's work, cheat, plagiarize, or impede other students' scholastic progress. Consult the <b><i>Student Handbook</i></b> for more details.
<b>Students with Disabilities</b>	Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the <b>Disability Support Services Office</b> at his / her respective college at the beginning of each semester. Faculties are authorized to provide only the accommodations requested by the <b>Disability Support Services Office</b> . For Central College, call 713-718-6164.
<b>Cell Phones</b>	All cell phones must be muted, set to vibrate, or turned off during class. Cell phone activity during class is deemed disruptive to the academic process and will not be tolerated. If you need to make or receive an <u>emergency call</u> , please leave the classroom.
<b>Calculators</b>	The use of calculators in this class is allowed. Cell phones are not calculators, and are not allowed to be used for that purpose during class, tests, or exams.
<b>Exams</b>	There will be two (2) exams as part of the grading of this class. Exams will include material from the lectures as well as content from the book. Students are responsible for all the material in the book whether or not it is discussed in class. <b>No make-up exams will be given under any circumstances!</b>
<b>Final Project</b>	Everyone will responsible for doing a final project. The final project will be something handmade, not from a kit. Each student will have to use the knowledge that they have attained in this class in order finish it. I will give you a couple of ideas, but it is the students responsibility to submit their idea along with a schematic and sources cited for approval by the instructor.
<b>Student ID</b>	Students are required to obtain a Student ID. For additional information, consult the <b><i>Student Handbook</i></b> .
<b>Parking Rules and Regulations</b>	Students are required to follow HCC's regulations regarding parking and permits. For additional information, visit <a href="http://www.hccs.edu/hccs/about-hcc/police/parking/parking-rules-and-regulations">http://www.hccs.edu/hccs/about-hcc/police/parking/parking-rules-and-regulations</a>
<b>Books, Tools, and Supplies</b>	Students are required to purchase and bring to class the required textbooks, tools, notebooks, supplies, and writing instruments as required by the instructor.
<b>Dress Code</b>	Dress code must be appropriate for the class. Students must dress in a way that clothing and accessories do not compromise their safety, and the safety of others. Proper foot wear is required in all laboratories. Absolutely no sandals or other footwear that exposes the feet will be allowed.
<b>Classroom Conduct</b>	Proper behavior is expected in all classes and laboratories. Foul language and horseplay are not allowed. Sleeping in class is not allowed.

**Complaints** It is the responsibility of the student to officially withdraw from a course before the official withdrawal deadline. A student who does not withdraw from a course by the deadline will receive an “F” as the final grade. Also note that under Section 51.907 of the Texas Education Code, an institution of higher education may not allow a student to drop more than six courses.

**Supplies for class** Students are responsible for getting the tools and measuring instruments that the instructor says to purchase. These will include, but may not be limited to, a multimeter, a bread board with a power source (this will be covered later in the semester), wire strippers and cutters, and all electronic components that will be needed to be successful in this class.

<b>HCC Grading Scale</b>	A = 100- 90	4 points per semester hour
	B = 89 - 80:	3 points per semester hour
	C = 79 - 70:	2 points per semester hour
	D = 69 - 60:	1 point per semester hour
	F = 59 and below	0 points per semester hour

<b>Instructor Grading Criteria</b>	Lab/Assignments	25%
	Midterm	25%
	Final Project	25%
	Final Exam	25%
		<hr/> 100%

## Course Outline

### Week 1: 8/25

- Introduction
- Purpose of the course
- Overview of course syllabus
- Course policies
- Required materials, textbook(s), supplies, and resources (if applicable)
- Disability Support Services
- Registration, schedules, receipts, and student ID
- Importance of updating and maintaining student data (Name, Address, ID #, phone numbers, emails)
- Parking rules and regulations
- Classroom and laboratory safety
- Course withdrawal, Official Day of Record, and last day for withdrawal
- Course tests, quizzes, exams, and assignments
- Course grading policies
- Instructor information
- Safety Overview from book

### Week 2: 9/01

- Unit 1: Atomic Structure
- Unit 2: Electrical Quantities and Ohm's Law
- Unit 3: Static Electricity
- **NEED BOOK BY THIS CLASS**

### Week 3: 9/08

- Unit 4: Magnetism
- Unit 5: Resistors
- **NEED CALCULATOR BY THIS CLASS**

- Week 4: 9/15**
- Unit 6: Series Circuit
  - Two series lab assignments given
  - **NEED CIRCUIT AND TOOLS BY THIS CLASS**
- Week 5: 9/22**
- Unit 7: Parallel Circuit
  - Two parallel lab assignments given
- Week 6: 9/29**
- Unit 8: Combination Circuit
  - One combination lab assignment given
- Week 7: 10/06**
- Unit 10: Measuring Instruments
  - Unit 11: Using Tables and Determining Conductor Sizes
  - Unit 12: Conduction in Liquids and Gases
  - **All lab assignments due by this date.**
- Week 8: 10/13**
- **Midterm**
- Week 9: 10/20**
- Unit 13: Batteries and Other Sources of Electricity
  - Unit 14: Magnetic Induction
- Week 10: 10/27**
- Unit 15: Basic Trigonometry and Vectors
  - Unit 16: Alternating Current
  - Unit 17: Inductance in AC Circuits
- Week 11: 11/03**
- Unit 18: Resistance-Inductive Series Circuits
- Week 12: 11/10**
- Unit 19: Resistive-Inductive Parallel Circuits
  - Unit 20: Capacitor
- Week 13: 11/17**
- Unit 21: Resistance-capacitance Series Circuits
  - Unit 22: Resistance-capacitance Parallel Circuits
- Week 14: 11/24**
- Thanksgiving holiday, no class
- Week 15: 12/01**
- **Final Projects**
- Week 16: 12/08**
- **Final**