



**Course Information**

<b>Course Title</b>	Basic Electricity for HVAC
<b>Course Prefix, Num. and Title</b>	HART 1301 Basic Electricity for HVAC
<b>Division</b>	Vocational Science
<b>Department</b>	Air Conditioning, Heating, Refrigeration and Electrical Technology
<b>Course Type</b>	WECM Course
<b>Course Catalog Description</b>	Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits, and component theory and operation.
<b>Pre-Requisites</b>	None
<b>Co-Requisites</b>	Enter Co-Requisites Here.

**Semester Credit Hours**

<b>Total Semester Credit Hours (SCH): Lecture Hours:</b>	3:1:7
<b>Lab/Other Hours</b>	
<b>Equated Pay Hours</b>	4.5
<b>Lab/Other Hours Breakdown: Lab Hours</b>	7
<b>Lab/Other Hours Breakdown: Clinical Hours</b>	Enter Clinical Hours Here.
<b>Lab/Other Hours Breakdown: Practicum Hours</b>	Enter Practicum Hours Here.
<b>Other Hours Breakdown</b>	List Total Lab/Other Hours Here.

**Approval Signatures**

<b>Title</b>	<b>Signature</b>	<b>Date</b>
<b>Prepared by:</b>		
<b>Department Head:</b>		
<b>Division Chair:</b>		
<b>Dean/VPI:</b>		
<b>Approved by CIR:</b>		

## Additional Course Information

**Topical Outline:** Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

- electrical lab safety
- electrical theory
- electrical properties
- Ohm's Law
- power
- series and parallel circuits
- sources of AC and DC electricity
- magnetism
- meters
- motors and generators
- transformers

inductance and capacitance

### Course Learning Outcomes:

**Learning Outcomes – Upon successful completion of this course, students will:**

- (1) Identify specific safety practices and demonstrate knowledge of basic principles of electricity
- (2) Apply Ohm's law.
- (3) Perform voltage and current tests.
- (4) Test with appropriate meters.
- (5) Apply Ohms Law to calculate various circuit values.
- (6) Calculate electrical circuit loads.
- (7) Define and explain the use or function of thirteen electrical controls or loads.
- (8) Draw and identify the symbols of twenty different electrical circuit components.

### Methods of Assessment:

- 1) Quiz and examination questions, and lab exercises.
- 2) Quiz and examination questions.
- 3) Quiz and examination questions, lab exercises.
- 4) Classroom and lab exercises.
- 5) Classroom exercises, quiz and examination questions.
- 6) Classroom exercises, quiz and examination questions.
- 7) Classroom exercises, quiz and examinations questions.
- 8) Classroom exercises, quiz questions.

**Required text(s), optional text(s) and/or materials to be supplied by the student:**

Refrigeration and Air Conditioning Technology ISBN: 978-1-305-57829-6

**Suggested Course Maximum:**

30

**List any specific or physical requirements beyond a typical classroom required to teach the course.**

Air-Conditioning, Heating, Refrigeration, and Electrical Labs

**Course Requirements/Grading System:**

90% to 100%	= A
80% to 89%	= B
70% to 79%	= C
60% to 69%	= D
Below 60%	= F

The semester final grade is based on the percentage basis between daily lab work, daily classroom assignments, and semester final.

Daily lab work counts for 50% of final: Daily Classroom work is 20% of final: End of semester written final and lab final is 30% of final average.

Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

Enter Course Requirements/Grading System Here.

**Curriculum Checklist:**

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course.** Attach the Core Curriculum Review Forms
  - Critical Thinking
  - Communication
  - Empirical & Quantitative Skills
  - Teamwork
  - Social Responsibility
  - Personal Responsibility
- WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist