



Course Syllabus Commercial Refrigeration HART 2342

Semester with Course Reference Number (CRN) Spring Semester
10455

Instructor contact information (phone number and email address) Issac Bolston
issac.bolston@hccs.edu

Office Location and Hours Hcc Central

Course Location/Times J.B Whiteley
12:00pm – 5:00pm

Course Semester Credit Hours (SCH) (lecture, lab) If applicable Credit Hours: 3
Lecture Hours: 2
Laboratory Hours: 3
External Hours:

Total Course Contact Hours 80.00

Course Length (number of weeks) 16 weeks

Type of Instruction Lecture/Lab

Course Description: Theory and practical application in the maintenance of commercial refrigeration; medium and low temperature applications and ice machines.

Course Prerequisite(s) **PREREQUISITE(S):**

- HART 1341 with a minimum grade of D or better

CO-REQUISITE(S):

- HART 1345

FREQUENT REQUISITES

- MATH 0106
- INRW 0410
- INRW 0410

Academic Discipline/CTE Program Learning Outcomes

1. Demonstrate knowledge of safety rules and regulations.
2. Demonstrate the proper selection, use, and maintenance of hand and power tools and measuring instruments used in A/C and Refrigeration.
3. Maintain A/C and Refrigeration equipment.
4. Service/repair A/C and Refrigeration equipment.
5. Troubleshoot A/C and Refrigeration equipment.

Course Student Learning Outcomes (SLO): 4 to 7

1. Given a mechanical refrigeration system major components and system pictorial diagram. Performance will be satisfactory when the student can differentiate between the high, medium, and low temperature applications by passing 80% on the quiz assignments.
2. Given a lab assignment along with demonstration, the student will analyze refrigeration cycle. Performance will be satisfactory when the student can interpret the thermodynamic properties of refrigerants in Mollier diagram by passing 80% on the quiz assignments.
3. Given a lab assignment along with lectures, the student will demonstrate the use of various measuring instruments and testing devices. Performance will be satisfactory when the student can operate the proper tools for servicing equipment by passing 80% of accuracy on the practice.
4. Given commercial refrigeration electrical circuit, the student will identify the type of temperature control in refrigeration systems. Performance will be satisfactory when the student can state the sequence of operation in refrigeration unit by using an electrical diagram and required passing 90% of accuracy on the practice.
5. Given a complex electrical diagram of an ice maker, the student will analyze the electrical sequence. Performance will be satisfactory when the student states the sequence of operation for cooling mode, defrost mode, and re-cooling mode by passing 90% of accuracy on the practice.
6. Give a service diagnostic chart, the student will list the possible cause and corrective actions associated to any service problems. Performance will be satisfactory when the student can give a performance audit for each service problem by passing 100% accuracy on the practice.

Learning Objectives (Numbering system should be linked to SLO - e.g., 1.1, 1.2, 1.3, etc.)

- Given a mechanical refrigeration system major components and system pictorial diagram. Performance will be satisfactory when the student can differentiate between the high, medium, and low temperature applications by passing 80% on the quiz assignments.**
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 Give a service diagnostic chart, the student will list the possible cause and corrective actions associated to any service problems. Performance will be satisfactory when the student can give a performance audit for each service problem by passing 100% accuracy on the practice.

SCANS and/or Core Curriculum Competencies: If applicable

SCANS

Given a mechanical refrigeration system major components and system pictorial diagram. Performance will be satisfactory when the student can differentiate between the high, medium, and low temperature applications by passing 80% on the quiz assignments.
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Instructional Methods

Web-enhanced (49% or less)
 Face to Face

Student Assignments

Given a mechanical refrigeration system major components and system pictorial diagram. Performance will be satisfactory when the student can differentiate between the high, medium, and low temperature applications by passing 80% on the quiz assignments.
 Various assigned readings from textbooks, peer-rev
 Discussions
 Projects
 Given a lab assignment along with demonstration, the student will analyze refrigeration cycle. Performance will be satisfactory when the student can interpret the thermodynamic properties of refrigerants in Mollier diagram by

passing 80% on the quiz assignments.

Various assigned readings from textbooks, peer-rev

Discussions

Projects

Given a lab assignment along with lectures, the student will demonstrate the use of various measuring instruments and testing devices. Performance will be satisfactory when the student can operate the proper tools for servicing equipment by passing 80% of accuracy on the practice.

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Discussions

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Discussions

Projects

Given a complex electrical diagram of an ice maker, the student will analyze the electrical sequence. Performance will be satisfactory when the student states the sequence of operation for cooling mode, defrost mode, and re-cooling mode by passing 90% of accuracy on the practice.

Various assigned readings from textbooks, peer-rev

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Projects

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Discussions

Projects

**Student
Assessment(s)**

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Various assigned readings from textbooks

In-class discussions

Quizzes/Tests which may include: definitions, matching, multiple choice, true/false, short answer, brief essay

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Instructor's Requirements

Program/Discipline Requirements: If applicable

Student is required to bring to class all necessary tools, and dress according to lab safety requirements. Student must bring textbooks, notebooks, and other required supplies.

HCC Grading Scale:

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
59 and below = F	0 points per semester hour
FX (Failure due to non-attendance)	0 points per semester hour
IP (In Progress)	0 points per semester hour
W (Withdrawn)	0 points per semester hour
I (Incomplete)	0 points per semester hour
AUD (Audit)	0 points per semester hour

IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses.

FINAL GRADE OF FX: Students who stop attending class and do not withdraw themselves prior to the withdrawal deadline may either be dropped by their professor for excessive absences or be assigned the final grade of "FX" at the end of the semester. Students who stop attending classes will receive a grade of "FX", compared to an earned grade of "F" which is due to poor performance. Logging into a DE course without active participation is seen as non-attending. Please note that HCC will not disperse financial aid funding for students who have never attended class.

Students who receive financial aid but fail to attend class will be reported to the Department of Education and may have to pay back their aid. A grade of "FX" is treated exactly the same as a grade of "F" in terms of GPA, probation, suspension, and satisfactory academic progress.

To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades "IP," "COM" and "I" do not affect GPA.

Health Sciences Programs Grading Scales may differ from the approved HCC Grading Scale. For Health Sciences Programs Grading Scales, see the "Program Discipline Requirements" section of the Program's syllabi.

Instructor Grading Criteria

Instructional Materials

REFRIGERATION AND AIR CONDITIONING TECHNOLOGY 7TH EDITION, WHITMAN, JOHNSON, TOMCZYK ISBN: 97811111644475 and NCCER, HVAC Level 3 Trainee Guide, 4th Edition ISBN-10: 0-13-375083-3

HCC Policy Statement:

Access Student Services Policies on their Web site:

<http://hccs.edu/student-rights>

EGLS3 -- Evaluation for Greater Learning Student Survey System

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time near the end of the term, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and department chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.

Distance Education and/or Continuing Education Policies

Access DE Policies on their Web site:

http://de.hccs.edu/Distance_Ed/DE_Home/faculty_resources/PDFs/DE_Syllabus.pdf

Access CE Policies on their Web site:

<http://hccs.edu/CE-student-guidelines>