



INSTRUCTIONAL PACKAGE

ACR 108

Refrigeration Fundamentals

Fall 2018

INSTRUCTIONAL PACKAGE

PART I: COURSE INFORMATION

Effective Term: Fall 2018

COURSE PREFIX: ACR 108

COURSE TITLE: Refrigeration Fundamentals

CONTACT HOURS: 3

CREDIT HOURS: 3

RATIONALE FOR THE COURSE:

This course is designed to provide the student with a fundamental understanding of thermodynamics as it applies to the refrigeration cycle. It is the foundation required for ACR 118.

COURSE DESCRIPTION:

This course is an introduction to the principles of refrigeration.

PREREQUISITES/CO-REQUISITES:

(Credit level [ENG 032](#) Minimum Grade of C* or COMPASS Reading 54 or ACCUPLACER Reading Comp 032 or COMPANION Reading 032 or SAT Critical Reading 300 or ACT Reading 12 or Multiple Measures English 1 or Credit level [ENG 100](#) Minimum Grade of C* or Credit level [ENG 155](#) Minimum Grade of C or Credit level [ENG 155](#) Minimum Grade of TC or Credit level [ENG 101](#) Minimum Grade of C or Credit level [ENG 101](#) Minimum Grade of TC) and (Credit level [ACR 102](#) Minimum Grade of C and Credit level [ACR 108](#) Minimum Grade of C and Credit level [ACR 118](#) Minimum Grade of C and Credit level [ACR 140](#) Minimum Grade of C)

REQUIRED MATERIALS:

Please visit the Bookstore online site for most current textbook information. Use the direct link [BOOKSTORE](#) to find textbooks.

**Fundamentals of HVACR; Lab Manual for Fundamentals of HVACR;
MyHVACLab with Pearson eText Access Card 3rd Edition**

PUBLISHER: PEARSON

ISBN: 9780134512051

ADDITIONAL REQUIREMENTS:

HVAC/R toolkit available at the bookstore

TECHNICAL REQUIREMENTS:

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

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.

Part II: Student Learning Outcomes

COURSE LEARNING OUTCOMES and ASSESSMENTS*:

After this course of study the student should be able to:

- Define temperature, sensible heat, latent heat, and specific heat
- Define watts, BTU's and horsepower
- Use the pressure temperature chart for various refrigerants
- Use a manifold gauge to read temperature and pressure in a refrigeration system
- Describe the basic refrigeration cycle
- Draw a refrigeration system diagram and indicate the condition of the refrigerant entering and leaving each component

Tests

Unit tests and lab tests are used to assess knowledge and skills. Make up tests and labs will be given at the instructor's convenience. It is the **responsibility of the student** to arrange with the instructor a time to make up a test. Cell phone use during a test is considered cheating.

Topics of study

The following topics will be studied and discussed in detail, although the order of presentation may not exactly follow the attached listing. The instructor may introduce additional materials.

- Unit 1 – Introduction to HVAC\R
- Unit 9 – Temperature and Thermodynamics
- Unit 10 – Pressure and Vacuum
- Unit 12 – The Refrigeration Cycle
- Unit 17 – Refrigerants and their Properties
- Unit 21 – Refrigerant System Servicing and Testing Equipment
- Unit 11 – Types of Refrigeration Systems

Labs

Lab work is a key element to having a working knowledge of the materials being presented in this course. Students must demonstrate adequate skills and procedures to be given a passing grade. Labs will be assigned based on equipment and space availability. Labs are assigned with an objective and deadline. While some labs are practiced in groups, lab grades are based on an individual's achievement.

Safety

Students will be expected to perform hands-on lab projects. These projects could stain or damage clothing. We recommend students to wear "work" clothes in the lab. No open toed shoes (sandals) allowed in the lab. Safety glasses, gloves or any other personal protection equipment (PPE) is to be worn when appropriate and provided by the student. No horseplay anywhere on campus.

****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*

Tests	50%
Labs	25%
Homework	10%
Final Exam	15%
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	100%

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

GRADING SYSTEM:

State the College's or departmental grading system as delineated in the Catalog. Please note the College adheres to a 10 point grading scale A = 100 – 90, B = 89- 80, C = 79 – 70, D = 69 – 60, F = 59 and below. You must have your Dean's approval if changes in the scale are made.

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. D's, F's, W's, WF's and I's 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 eighty percent (80%) of his or her classes in order to be eligible to receive credit for any course. However, due to the varied nature of courses taught at the College, a more rigid attendance policy may be required by individual instructors. At a minimum, a student may be withdrawn from a course(s) after he or she has been absent in excess of ten percent (10%) of the total contact hours for a course. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

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. Room locations and Live Chat is available on the SSTC website.



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.

The **Instructor Information Sheet** will have more details on test requirements for your course.

Disability Services

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to Jocelyn Williams, 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, gender, national or ethnic origin, age, religion, disability, marital status, veteran status, sexual orientation, gender identity, or pregnancy in educational programs and/or activities.

Title IX Requirements

Horry Georgetown Technical College prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking. Any student who believe he or she has experienced or witnessed discrimination including sexual harassment, domestic violence, dating violence, sexual assault or stalking is encouraged to report such incidents to one of the College's Title IX Coordinators.

*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).

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