AIRC-1010 Refrigeration Principles and Practices
COURSE SYLLABUS
Spring Semester 2022-202214

COURSE INFORMATION

Credit Hours/Minutes: 4/4500
Campus/Class Location: Vidalia / Main Building Room 423
Class Meets M/T/W/R
Course Reference Number (CRN):

INSTRUCTOR CONTACT INFORMATION

Instructor Name: Vince Scott
Office Location: Main Building Room 426
Office Hours: Call to Schedule
Email Address: vscott@southeasterntech.edu
Phone: 912-538-3146
Fax Number: 912-538-3156
Tutoring Hours (if applicable): By appointment

SOUTHEASTERN TECHNICAL COLLEGE'S (STC) CATALOG AND HANDBOOK

Students are responsible for all policies and procedures and all other information included in Southeastern Technical Catalog and Handbook (https://catalog.southeasterntech.edu/college-catalog/downloads/current.pdf).

REQUIRED TEXT

Fundamentals of HVACR 3rd Edition by Carter Stanfield & David Skaves, published by Pearson ISB: 0-13-401616-5

REQUIRED SUPPLIES & SOFTWARE

Safety glasses notebook for taking notes, 3 ring binder for hand-outs, and pen or pencil to use in class every day. **NOTE: You must have textbook and notebook with pen or pencil with you each day for class.**

Students should not share login credentials with others and should change passwords periodically to maintain security.

COURSE DESCRIPTION/COMPENTENCIES

This course introduces the student to basic refrigeration systems principles and practices. Topics include refrigeration tools, piping practices, service valves, leak testing, refrigerant recovery, recycling and reclamation, evacuation, charging and refrigerant safety.

COURSE COMPETENCIES (PER KMS STATE STANDARD)

1. Refrigeration Safety
2. Refrigeration Tools
3. Piping Practices
4. Refrigeration Practices

PREREQUISITE(S)

None

COURSE OUTLINE (PER KMS COURSE DESCRIPTION)

1. Refrigeration Tools
2. Piping Practices
3. Service Valves
4. Leak Testing
5. Refrigerant Recovery
6. Recycling and Reclamation
7. Charging
8. Refrigerant Safety

GENERAL EDUCATION CORE COMPETENCIES

Southeastern Technical College has identified the following general education core competencies that graduates will attain:

1. The ability to utilize standard written English.
2. The ability to solve practical mathematical problems.
3. The ability to read, analyze, and interpret information

STUDENT REQUIREMENTS

Students are expected to complete all tests and comprehensive/Lab problems by the due dates. A ten point penalty will be assessed for each day a comprehensive problem is late. There are no makeup tests. Tests are made available for several days; therefore, there are no makeup tests. Students who miss a test will be assigned a grade of zero. Students are responsible for policies and procedures included in the *STC E-Catalog*.

COVID-19 MASK REQUIREMENT

Masks or face coverings must be worn at all times while on the campus of Southeastern Technical College. This measure is being implemented to reduce COVID-19 related health risks for everyone engaged in the educational process. Masks or face coverings must be worn over the nose and mouth, in accordance with the Centers for Disease Control and Prevention (CDC). A student's refusal to wear a mask or face covering will be considered a classroom disruption and the student may be asked to leave campus and/or receive further discipline.

COVID-19 SIGNS AND SYMPTOMS

We encourage individuals to monitor for the signs and symptoms of COVID-19 prior to coming on campus.

If you have experienced the symptoms listed below or have a body temperature 100.4°F or higher, we encourage you to self-quarantine at home and contact a primary care physician's office, local urgent care facility, or health department for further direction. Please notify your instructor(s) by email and do not come on campus for any reason.

COVID-19 Key Symptoms
Fever or felt feverish
Cough: new or worsening, not attributed to another health condition
Shortness of breath, not attributed to another health condition
New loss of taste or smell

COVID-19 Key Symptoms
Chills; Repeated shaking with chills
Sore throat, not attributed to another health condition
Muscle pain, not attributed to another health condition or exercise
Headache, not attributed to another health condition
Diarrhea (unless due to known cause)
In the past 14 days, if you:
Have had close contact with or are caring for an individual diagnosed with COVD-19 at home (not in healthcare setting), please do not come on campus and contact your instructor (s).

COVID-19 SELF-REPORTING REQUIREMENT

Students, regardless of vaccination status, who test positive for COVID-19 or who have been exposed to a COVID-19 positive person, are required to self-report using https://www.southeasterntech.edu/covid-19/. Report all positive cases of COVID-19 to your instructor and Stephannie Waters, Exposure Control Coordinator, swaters@southeasterntech.edu, 912-538-3195.

ATTENDANCE GUIDELINES

Class attendance is a very important aspect of a student's success. Being absent from class prevents students from receiving the full benefit of a course and also interrupts the learning process. Southeastern Technical College considers both tardiness and leaving early as types of absenteeism. Responsibility for class attendance rests with the student. Regular and punctual attendance at all scheduled classes is required for student success. Students will be expected to complete all work required by the instructor as described in the individual course syllabus.

Instructors have the right to give unannounced quizzes/assignments. Students who miss an unannounced quiz or assignment will receive a grade of 0. Students who stop attending class, but do not formally withdraw, may receive a grade of F and face financial aid repercussions in upcoming semesters.

Instructors are responsible for determining whether missed work may be made up and the content and dates for makeup work is at the discretion of the instructor.

Students will not be withdrawn by an instructor for attendance; however, all instructors will keep records of graded assignments and student participation in course activities. The completion dates of these activities will be used to determine a student's last date of attendance in the event a student withdraws, stops attending, or receives an F in a course.

STUDENTS WITH DISABILITIES

Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact the appropriate campus coordinator to request services.
Swainsboro Campus: Daphne Scott dscott@southeasterntech.edu, 478-289-2274, Building 1, Room 1210
Vidalia Campus: Helen Thomas hthomas@southeasterntech.edu, 912-538-3126, Building A, Room 165

SPECIFIC ABSENCES

Provisions for Instructional Time missed because of documented absences due to jury duty, military duty, court duty, or required job training will be made at the discretion of the instructor.

PREGNANCY

Southeastern Technical College does not discriminate on the basis of pregnancy. However, we can offer accommodations to students who are pregnant that need special consideration to successfully complete the course. If you think you will need accommodations due to pregnancy, please make arrangements with the appropriate campus coordinator.

Swainsboro Campus: Daphne Scott dscott@southeasterntech.edu, 478-289-2274, Building 1, Room 1210
Vidalia Campus: Helen Thomas hthomas@southeasterntech.edu, 912-538-3126, Building A, Room 165

It is strongly encouraged that requests for consideration be made **PRIOR** to delivery and early enough in the pregnancy to ensure that all the required documentation is secured before the absence occurs. Requests made after delivery **MAY NOT** be accommodated. The coordinator will contact your instructor to discuss accommodations when all required documentation has been received. The instructor will then discuss a plan with you to make up missed assignments.

WITHDRAWAL PROCEDURE

Students wishing to officially withdraw from a course(s) or all courses after the drop/add period and prior to the 65% portion of the semester (date will be posted on the school calendar) must speak with a Career Counselor in Student Affairs and complete a Student Withdrawal Form. A grade of "W" is assigned when the student completes the withdrawal form from the course.

Students who are dropped from courses due to attendance (see your course syllabus for attendance policy) after drop/add until the 65% point of the semester will receive a "W" for the course. Abandoning a course(s) instead of following official withdrawal procedures may result in a grade of 'F' being assigned.

After the 65% portion of the semester, the student will receive a grade for the course. (Please note: A zero will be given for all missed assignments.)

There is no refund for partial reduction of hours. Withdrawals may affect students' eligibility for financial aid for the current semester and in the future, so a student must also speak with a representative of the Financial Aid Office to determine any financial penalties that may be accessed due to the withdrawal. All grades, including grades of 'W', will count in attempted hour calculations for the purpose of Financial Aid.

REMEMBER - Informing your instructor that you will not return to his/her course does not satisfy the approved withdrawal procedure outlined above.

MAKEUP GUIDELINES (TESTS, QUIZZES, HOMEWORK, PROJECTS, ETC.)

(Tests, quizzes, homework, projects, etc…): If a student misses a test, a grade of zero will be assigned. **Only students with extenuating circumstances (who contact the instructor on the day of the test regarding their absence) will be allowed to take a makeup test, which will replace the zero.** Extenuating circumstances are determined at the instructor's discretion. Unless otherwise scheduled with the instructor, it is expected that the test will be taken the next day, scheduled outside of regular class time. Failure to follow this procedure will result in a grade of zero.

ACADEMIC DISHONESTY POLICY

The Southeastern Technical College Academic Dishonesty Policy states that all forms of academic dishonesty, including but not limited to cheating on tests, plagiarism, collusion, and falsification of information, will call for discipline. The policy can also be found in the Southeastern Technical College Catalog and Handbook.

PROCEDURE FOR ACADEMIC MISCONDUCT

The procedure for dealing with academic misconduct and dishonesty is as follows:

1. **First Offense**
   Student will be assigned a grade of "0" for the test or assignment. Instructor keeps a record in course/program files and notes as first offense. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus. The Registrar will input the incident into Banner for tracking purposes.
2. **Second Offense**
   Student is given a grade of "WF" (Withdrawn Failing) for the course in which offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of second offense. The Registrar will input the incident into Banner for tracking purposes.
3. **Third Offense**
   Student is given a grade of "WF" for the course in which the offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of third offense. The Vice President for Student Affairs, or designee, will notify the student of suspension from college for a specified period of time. The Registrar will input the incident into Banner for tracking purposes.

STATEMENT OF NON-DISCRIMINATION

The Technical College System of Georgia (TCSG) and its constituent Technical Colleges do not discriminate on the basis of race, color, creed, national or ethnic origin, gender, religion, disability, age, political affiliation or belief, genetic information, disabled veteran, veteran of the Vietnam Era, spouse of military member, or citizenship status (except in those special circumstances permitted or mandated by law). This nondiscrimination policy encompasses the operation of all technical college-administered programs, federally financed programs, educational programs and activities involving admissions, scholarships and loans, student life, and athletics. It also applies to the recruitment and employment of personnel and contracting for goods and services.

All work and campus environments shall be free from unlawful forms of discrimination, harassment and retaliation as outlined under Title IX of the Educational Amendments of 1972, Title VI and Title VII of the Civil Rights Act of 1964, as amended, the Age Discrimination in Employment Act of 1967, as amended, Executive Order 11246, as amended, the Vietnam Era Veterans Readjustment Act of 1974, as amended, Section 504 of the Rehabilitation Act of 1973, as amended, the Americans With Disabilities Act of 1990, as amended, the Equal Pay Act, Lilly Ledbetter Fair Pay Act of 2009, the Georgia Fair Employment Act of 1978, as amended, the Immigration Reform and Control Act of 1986, the Genetic Information Nondiscrimination Act of 2008, the Workforce Investment Act of 1998 and other related mandates under TCSG Policy, federal or state statutes.

The Technical College System and Technical Colleges shall promote the realization of equal opportunity through a positive continuing program of specific practices designed to ensure the full realization of equal opportunity.

The following individuals have been designated to handle inquiries regarding the nondiscrimination policies:

American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer	Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer
Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1st Street, Vidalia Office165 Phone: 912-538-3126 Email: Helen Thomas hthomas@southeasterntech.edu	Lanie Jonas, Director of Human Resources Vidalia Campus 3001 East 1st Street, Vidalia Office 138B Phone: 912-538-3230 Email: Lanie Jonas ljonas@southeasterntech.edu

ACCESSIBILITY STATEMENT

Southeastern Technical College is committed to making course content accessible to individuals to comply with the requirements of Section 508 of the Rehabilitation Act of Americans with Disabilities Act (ADA). If you find a problem that prevents access, please contact the course instructor.

GRIEVANCE PROCEDURES

Grievance procedures can be found in the Catalog and Handbook located on Southeastern Technical College's website.

ACCESS TO TECHNOLOGY

Students can now access Blackboard, Remote Lab Access, Student Email, Library Databases (Galileo), and BannerWeb via the mySTC portal or by clicking the Current Students link on the Southeastern Technical College (STC) Website (www.southeasterntech.edu).

TECHNICAL COLLEGE SYSTEM OF GEORGIA (TCSG) GUARANTEE/WARRANTY STATEMENT

The Technical College System of Georgia guarantees employers that graduates of State Technical Colleges shall possess skills and knowledge as prescribed by State Curriculum Standards. Should any graduate employee within two years of graduation be deemed lacking in said skills, that student shall be retrained in any State Technical College at no charge for instructional costs to either the student or the employer.

GRADING POLICY

Assessment/Assignment	Percentage
Test	30%
Lab Test	20%
Lab Assignments	50%

GRADING SCALE

Letter Grade	Range
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

AIRC 1010 Refrigeration Principles and Practices
Spring Semester 2021 lesson plan

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
Jan 10-13	Chapter 3	**Safety** Safety hazards	Discuss the safety hazards found in working with electric motors and their components Safety Test	1 a, c
Jan 17-20	Unit22 Unit 23	**Refrigeration Safety** Procedures and applications **Refrigeration Tools** Tubing and fittings	Identify and discuss potential hazards in working with copper tubing Identify and discuss safety concerns found in working with pipe and pipe fittings Discuss the potential hazards of working with gauges Identify and discuss the hazards of working with refrigerants Demonstrate safe procedures in recovering, recycling, and transferring refrigerants Discuss safety factors involved in evacuating refrigeration systems Identify different types of tubing used in the refrigeration industry Identify various fittings commonly used in the refrigeration industry Turn in homework for chapter's 22 & 23	1,2,3 B,c

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
Jan 24-27	Unit 24 Unit 25	Fabrication and bending Soldering	Observe annealing copper tubing demonstrations Bend copper tubing to specified dimensions Braze or silver solder lines or fittings, such as condensers, receivers, evaporators, tubing, or piping Flare copper tubing Measure and cut copper tubing Soft solder lines or fittings	2,3 a,b,c
Jan 31 Feb 1-3	Unit 24	**Piping Practices** Applications	Determine correct refrigerant line sizes for specific applications Identify various types of pipe used in the refrigeration industry Remove or install threaded fittings Measure and cut piping Remove or install piping or tubing to include water, refrigerant, and fuel lines	2,3,4 a,b,c
Feb 7-10	Unit 27	**Service Valves** Gauge types	Identify and discuss the various types of gauges Calibrate gauges Inspect gauges and/or lines Purge lines Install a manifold gauge Discuss the potential hazards of working with gauges	2,3,4 a,b,c
Feb 14-17	Unit 29	**Leak Testing** Detection	Discuss the various types of leak detectors Locate refrigerant leaks using electronic leak detectors Locate refrigerant leaks using soap solutions Perform pressure tests	1,2,3,4 a,c

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
Feb 21-24	Unit 28	**Refrigerant Recovery, Recycling, and Reclamation** Theory Equipment	Discuss stratospheric ozone depletion Discuss regulations relating to the discharge of ozone layer depleting substances Discuss refrigerant recovery, recycling, and reclamation procedures as means of reducing ozone layer depletion Describe recovery and reclamation equipment use Demonstrate recovery and recycling procedures	1,4 a,c
Feb28- Mar 1-3	Unit 28	Theory and applications	List the proper procedures for evacuation refrigeration systems Identify and explain the equipment used in evacuating a refrigeration system Evacuate refrigeration or air conditioning systems	1,3,4 a,c
Mar 7-10 Mar14-17	Unit 31	**Charging** Applications	Charge a refrigeration system Determine performance using a P-T chart Purge refrigeration or air conditioning system lines Discuss the purpose of desiccants	1,2,3,4 a,b,c
Mar21-24 Mar 28-31	Unit 31	Theory and applications	Remove or install gauges Replace drier filters or cartridges	1,2 a,c
	Units 22,23,24 25,27,28 29 & 31	**FINALS**	Homework Due Final Test	

COURSE COMPETENCIES (PER KMS STATE STANDARD)

1. Refrigeration Safety
2. Refrigeration Tools
3. Piping Practices

4. Refrigeration Practices

GENERAL CORE EDUCATIONAL COMPETENCIES:

a) The ability to utilize standard written English.
b) The ability to solve practical mathematical problems.
c) The ability to read, analyze, and interpret information.