

# AIRC-1090 HVACR Troubleshooting

# COURSE SYLLABUS

**Spring Semester 2022**

## 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 College’s [Catalog and Handbook](https://catalog.southeasterntech.edu/college-catalog/downloads/current.pdf) (<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 provides instruction on the troubleshooting and repair of major components of residential air conditioning systems. Topics include air flow, air filters, psychometrics, troubleshooting techniques, electrical controls, the refrigeration cycle, electrical servicing procedures and safety.

## Course Competencies (per kms state standard)

1. Safety
2. Mechanical Problems
3. Electrical Problems
4. Airflow Problems
5. Refrigeration Cycle Problems
6. Troubleshooting Techniques

## PREREQUISITE(S)

None

## COURSE OUTLINE (Per kms course description)

1. Troubleshooting techniques
2. Electrical controls
3. Air flow
4. Refrigeration cycle,
5. Electrical servicing procedures
6. 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 |
| 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](mailto:Stephannie%20Waters), Exposure Control Coordinator, [swaters@southeasterntech.edu](mailto: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](mailto:dscott@southeasterntech.edu) [dscott@southeasterntech.edu](mailto:dscott@southeasterntech.edu), 478-289-2274, Building 1, Room 1210

**Vidalia Campus**: [Helen Thomas](mailto:hthomas@southeasterntech.edu) [hthomas@southeasterntech.edu](mailto: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.

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**Vidalia Campus**: [Helen Thomas](mailto:hthomas@southeasterntech.edu) [hthomas@southeasterntech.edu](mailto: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.

## EXIT EXAM

The final exam will include the Environmental Protection Agency (EPA) 608 certification exam. This exam is required before any person can handle any refrigerant. This exam will be taken online and will require additional fee to be paid by the student.

## **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.

1. **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.

1. **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](mailto:hthomas@southeasterntech.edu)  [hthomas@southeasterntech.edu](mailto: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](mailto:ljonas@southeasterntech.edu)  [ljonas@southeasterntech.edu](mailto: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](http://www.southeasterntech.edu/) ([www.southeasterntech.edu](http://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 1090 Troubleshooting**

**Spring Semester 2021 lesson plan**

| **Date/Week** | **Chapter/Lesson** | **Content** | **Assignments & Tests Due Dates** | **Competency Area** |
| --- | --- | --- | --- | --- |
| Jan10-20 | Unit  3 | **Safety**  Procedures and applications | Identify and discuss the safety hazards the technician may encounter in troubleshooting and servicing air conditioning systems | 1  a, c |
| Jan-24-  Feb 10 | Unit  92 | **Troubleshooting Techniques**  Applications | Demonstrate proper troubleshooting techniques  Isolate compressor malfunctions  Perform pre-seasonal startups | 2,3,4,5  a, c |
| Feb 14-24 | Unit  92 | Applications |  | 4  a, c |
| Feb 28-  Mar10 | Unit  90 | **Electrical Controls**  Applications | Isolate electrical malfunctions | 2,4  a, c |
| Mar14-17 | Unit90 | **Air Flow**  Applications | Isolate air flow problems | 2,4,5  a, c |
| Mar21-24 | Unit  91 | **Refrigeration Cycle**  Applications | Isolate refrigeration malfunctions  Use P-T charts or manufacturer’s charts to charge an air conditioning system | 2,3,4  a,b, c |
| Mar28-31 | Unit  92 | **Electrical and Servicing Procedures**  Applications |  | 2,4  a, c |
|  | FINALS | Final Exam for AIRC 1090 |  |  |

## Course Competencies (per kms state standard)

1. Safety
2. Mechanical Problems
3. Electrical Problems
4. Airflow Problems
5. Refrigeration Cycle Problems

## General Core Educational Competencies:

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.