



**AIRC 1050 Electrical Components and Controls**  
**COURSE SYLLABUS**  
**Fall Semester 2017**

**COURSE INFORMATION**

Credit Hours/Minutes: 4/4500  
Vidalia/Class Location: #423  
Class Meets: M/T/W/R 5:00-6:15  
Course Reference Number (CRN): 20211

**INSTRUCTOR CONTACT INFORMATION**

Instructor Name: Vince Scott  
Office Location: Room # 426  
Office Hours: 7:00-8:00am and 4:15-5:00pm  
Email Address: [vscott@southeasterntech.edu](mailto: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](http://www.southeasterntech.edu/student-affairs/catalog-handbook.php) (<http://www.southeasterntech.edu/student-affairs/catalog-handbook.php>).

**REQUIRED TEXT**

Fundamentals of HVACR 3rd Edition by Carter Stanfield & David Skaves, published by Pearson ISBN: 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.**

**SAFETY**

Shop safety is of paramount importance. Unsafe practices of any kind will result in dismissal from class. Proper clothing must be worn at all times, NO open toe shoes, No baggy clothes. Baggy pants are unsafe to work in and showing your underwear is viewed as indecent exposure.

## **COURSE DESCRIPTION**

Introduces the basic concepts, theories, and safety regulations and procedures of refrigeration. Topics include an introduction to OSHA, safety, first aid, laws of thermodynamics, pressure and temperature relationships, heat transfer, the refrigerant cycle, refrigerant identification, and types of AC systems.

## **MAJOR COURSE COMPETENCIES**

Topics include an introduction to OSHA safety, first aid, laws of thermodynamics, pressure and, temperature relationships, heat transfer, refrigeration cycle, refrigerant identification, and types of A/C systems and work ethics.

## **PREREQUISITE(S) NONE**

## **COURSE OUTLINE**

1. Pressure switches
2. Transformers
3. Commonly used controls
4. Diagnostic techniques
5. Installation procedures
6. Solid state controls
7. 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*.

## **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.

### **SPECIAL NEEDS**

Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 912-538-3126, to coordinate reasonable accommodations.

### **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 advise me and make appropriate arrangements with [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 912-538-3126.

### **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" (Withdrawn) 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 speak with a representative of the Financial Aid Office to determine any financial penalties that may be assessed 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**

### **WORK ETHICS**

The Technical College System of Georgia instructs and evaluates students on work ethics in all programs of study. Ten work ethics traits have been identified and defined as essential for student success: appearance, attendance, attitude, character, communication, cooperation, organizational skills, productivity, respect, and teamwork. Students will be required to take a work ethics exam as marked in the lesson plan. A grade of 70 or better is required to complete the work ethics requirements for this class.

## **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 and its constituent Technical Colleges do not discriminate on the basis of race, color, creed, national or ethnic origin, sex, 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 school is in compliance with Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, or national origin; with the provisions of Title IX of the Educational Amendments of 1972, which prohibits discrimination on the basis of gender; with the provisions of Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of handicap; and with the American with Disabilities Act (ADA).

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

<b>American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer</b>	<b>Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer</b>
Helen Thomas, Special Needs Specialist	Lanie Jonas, Director of Human Resources

<b>American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer</b>	<b>Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer</b>
Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 108 Phone: 912-538-3126 Email: <a href="mailto:hthomas@southeasterntech.edu">Helen Thomas</a> <a href="mailto:hthomas@southeasterntech.edu">hthomas@southeasterntech.edu</a>	Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 138B Phone: 912-538-3230 Email: <a href="mailto:ljonas@southeasterntech.edu">Lanie Jonas</a> <a href="mailto:ljonas@southeasterntech.edu">ljonas@southeasterntech.edu</a>

### 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 \(www.southeasterntech.edu\)](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
Written Test	% 45
Work Ethics	% 5
Lab Assignments	% 50

### GRADING SCALE

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

## AIRC 1050 Electrical Components and Controls

### Summer Semester 2018 lesson plan

Date/Week	Unit	Content	Assignments & Tests Due Dates	Competency Area
Aug. 13-16	Chapter 3	<b>**Safety**</b> Application	Discuss safety concerns of the technician when dealing with electrical components	1 a, c
Aug 20-23	Chapter 36	<b>**Pressure Switches**</b> Application	Explain the purpose for pressure switches Install a low-pressure safety cut-out in a refrigeration system Test pressure switches for proper operation	2 a, c
Aug 27-30	Chapter 36	<b>**Transformers**</b> Application	Discuss the purpose of the transformer in an air conditioning system Replace a transformer in an air conditioning system Test primary and secondary cores of transformers with a VOM	3 a, c
Sept. 3-6	Chapter 39	<b>**Controls**</b> Types	Identify and describe the types of common controls used on air conditioning systems	4 a, c

Date/Week	Unit	Content	Assignments & Tests Due Dates	Competency Area
Sept. 10-13	Chapter 39	<b>**Diagnostic Techniques**</b>  Application	Follow troubleshooting charts to isolate problems  Use accepted troubleshooting methods to locate problems  Use test instruments to locate and verify problems	5  a, c
Sept. 17-20	Chapter 37	<b>**Installation Procedures**</b>  Applications	Install a humidistat on an air conditioning system by following the manufacturer's recommendations	6  a, c
Sept. 24-27	Chapter 37	Applications	Install various electrical control devices on an air conditioning system by following the manufacturer's recommendations	6  a, c
Oct. 1-4	Chapter 37	<b>**Solid State Controls**</b>	Discuss the types of solid state controls used in air conditioning systems	7  a, c
Oct. 8-11	Chapter 37	Application	Lab work	7  a, c
Oct. 15-18	Chapter 37	<b>**Control Circuits**</b>  Application	Discuss the purpose of designing separate control circuits  Discuss several common control circuits found in air conditioning systems  Lab work	8  a, c
Oct. 22-25	Chapter 37	Application	Wire a compressor control circuit  Lab work	8  a, c

<b>Date/Week</b>	<b>Unit</b>	<b>Content</b>	<b>Assignments &amp; Tests Due Dates</b>	<b>Competency Area</b>
Oct 29- Nov 1	Chapter 37	Application	Wire an evaporator fan motor control circuit Lab work	1, 2,3,4, 5,6,7,8 a, c
Nov. 5-8	Chapter 37	Application	Lab work	1,2,3,4,5,6,7,8 a, c
Nov. 12-15	Chapter 37	Application	Lab work	1,2,3,4,5,6,7, 8 a, c
Nov. 19-21	Chapter 37	Application	Lab work	1,2,3,4,5,6,7,8 a, c
NOV 22		HOLIDAY	HOLIDAY	
Nov 26-29 Dec 3		Application Review for Finals <b>FINALS</b>	Review for Finals  <b>AIRC 1050 Final Exam</b>	