



**AIRC 1080 Heat Pumps
COURSE SYLLABUS
Spring Semester 202014**

COURSE INFORMATION

Credit Hours/Minutes: 4/4500
Campus/Class Location: # 423
Class Meets: M/T/W/R
Course Reference Number (CRN): 40039

INSTRUCTOR CONTACT INFORMATION

Instructor Name: Vince Scott
Office Location: Room 426
Office Hours: M/T/W/R 3:30-5:30
Email Address: vscott@southeasterntech.edu
Phone: (912)538-3146
Fax Number: (912)538-3156
Tutoring Hours (if applicable): By Appointment Only

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 and David Skaves, Pearson Publisher ISBN: 0-13-401616

REQUIRED SUPPLIES & SOFTWARE

Safety glasses, notebook for taking notes and pen or pencil to use in class every day. A Digital Volt, Ohm meter with a clamp-on AMP meter.

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

This course provides an introduction to fundamental electrical concepts and theories as applied to the air conditioning industry.

MAJOR COURSE COMPETENCIES

1. Servicing Procedures
2. Electrical Controls
3. Piping
4. Gas Valves
5. Venting
6. Code Requirements
7. Principles of Combustion
8. Safety

PREREQUISITE(S)

None

COURSE OUTLINE

This course provides an introduction to fundamental electrical concepts and theories as applied to the air conditioning industry.

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 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.

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: [Macy Gay \(mgay@southeasterntech.edu\)](mailto:mgay@southeasterntech.edu), 478-289-2274, Building 1, Room 1210.

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

Swainsboro Campus: [Macy Gay \(mgay@southeasterntech.edu\)](mailto:mgay@southeasterntech.edu), 478-289-2274, Building 1, Room 1210.

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

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 (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:

<p>American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer</p>	<p>Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer</p>
<p>Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1st Street, Vidalia Office 165 Phone: 912-538-3126 Email: Helen Thomas hthomas@southeasterntech.edu</p>	<p>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</p>

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	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 1080 Heat Pumps Spring Semester 2020 Lesson Plan

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
Jan 8-9	Chapter 3	Safety System safety	Discuss the safety concerns that the technician will adhere to while working on electric heating systems Safety Test	8 a, c
Jan 6-9	Chapter 59	Installation Procedures Theory and applications	Discuss heat pump theory Identify and discuss the types of heat pumps used in the industry Identify the reversing valve on a heat pump and explain its purpose Properly evacuate and charge a heat pump system with the correct amount of refrigerant	1,2 a, c
Jan 13-16	Chapter 59	Theory and applications	Identify and explain components found in heat pumps Discuss heat pump thermostats and how they differ from conventional thermostats	1,2 a, c
Jan 20-23	Chapter 60	Servicing Procedures Theory and installation	Install an electric furnace with a capacity of 150,000 BTU or less Remove or replace an electric furnace with a capacity of 150,000 BTU or less Install heating blowers	1,2,3 a, c

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
Jan 27-30	Chapter 60	Theory and installation	Install insulating materials on ducts Connect heating outlets on ducts Lubricate heating blowers	1,2,3, a, c
Feb3-6	Chapter 61	Electrical Components Theory	Identify and explain the various electrical components in the heat pump cycle	1,2,3,4 a, c
Feb 10-13	Chapter 61	Application	Install a humidistat Install a relay Install a safety control Install a starting or running capacitor	1,2,3,4 a, c
Feb 17-20	Chapter 64	Geothermal Ground Source Energy Supplies Theory and application	Discuss the theory of geothermal ground sourcing energy supplies Identify and explain the various components associated with this application	1,2,3,4, 5 a, c
Feb24-27	Chapter 65	Dual Fuel Theory and application	Discuss the theory of dual fuels Identify and explain the various components associated with this application	1,2,3, 4,5,6 a, c
Mar 2-5	Chapter 61	Valves Types	Identify and explain the purpose of TX, reversing, and check valves in the heat pump cycle.	1,2,4,5,6,7 a, c
Mar 9-12	Chapter 66	Troubleshooting Techniques Theory and application	Test skill level in finding problems in Heat pumps in lab setting	1,2,3,4, 5,6,7,8 a, c
Mar16-19	Chapter 66	Theory and application	Test skill level in finding problems in Heat pumps in lab setting	1,2,3,4, 5,6,7,8 a, c

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
Mar 23-26 30,31	Chapter 66	Theory and application	Test skill level in finding problems in Heat pumps in lab setting	1,2,3,4,5,6,7,8 a, c
April 1-2 ,13-16 20-23	Chapter 66	Theory and application Review for Finals	Test skill level in finding problems in Heat pumps in lab setting. Review for Finals	1-8 a, c
April 227-29	Chapter 59,60,61, 62,63,64, 65,66	FINALS	Final Exam AIRC 1080	1-8 a, c