



TENTATIVE – SUBJECT TO CHANGE

**ELTR 1180 Electrical Controls
HYBRID COURSE SYLLABUS
Fall Semester 2021 (202212)**

COURSE INFORMATION

Credit Hours/Minutes: 4 Credit Hours/ 4500 Minutes
Class Location: Swainsboro Building 6 Lab 6102
Class Meets: 20% Hybrid/ 80% F2F Wednesday 8:00AM-12:20PM
CRN: 20020
Preferred Method of Contact: STC Email

INSTRUCTOR CONTACT INFORMATION

Email Address: [Tony Criswell \(tcriswell@southeasterntech.edu\)](mailto:tcriswell@southeasterntech.edu)

Campus/Office Location:

Swainsboro: Building 6 Lab 6102

Vidalia: Main- Lab 429

Office Hours:

Swainsboro Campus: Monday and Wednesday 1:30PM- 3:45PM

Vidalia Campus: Tuesday and Thursday 1:30PM- 3:45PM

Phone: 478-289-2235 Fax Number: 478-289-2276

Tutoring Hours: Available upon request

This course is taught in a hybrid format. Hybrid classes require students to complete a portion of the required contact hours traditionally by attending classes on campus while completing the remaining portion online at the student's convenience with respect to the instructor's requirements.

SOUTHEASTERN TECHNICAL COLLEGE (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

None- Will be using an online text

REQUIRED SUPPLIES & SOFTWARE

Safety Glasses and Basic Hand Tools

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

COURSE DESCRIPTION

Introduces line and low voltage switching circuits, manual and automatic controls and devices, and circuits. Emphasis will be placed on switching circuits, manual and automatic controls and devices, line and low voltage switching circuits, and operation, application and ladder diagrams

MAJOR COURSE COMPETENCIES

Ladder and wire diagrams, switching circuits, manual controls and devices, automatic controls and devices, application and operation of controllers and controls, and variable speed controls.

PREREQUISITE(S)

None

COURSE OUTLINE

1. Switching Circuits
2. Manual Controls and Devices
3. Automatic Controls and Devices
4. Application and Operation of Controllers and Controls
5. Variable Speed Controls
6. Ladder and Wire Diagrams

GENERAL EDUCATION CORE COMPETENCIES

STC 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

Class attendance is a very important aspect of a student's success in this course. Responsibility for class attendance rests with the student. Regular and punctual attendance at all scheduled classes is expected. Students are expected to complete all work required by the instructor. Unannounced quizzes/assignments may be given. Students that miss an unannounced quiz or assignment will receive a grade of 0. Students are expected to complete all work shown on the attached assignment sheet. Students are also expected to complete all tests and comprehensive problems on the dates specified on the attached calendar. Students are responsible for policies and procedures included in the *STC Catalog*. **Electrical program students must earn a minimum grade of C in all courses to graduate.**

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
Chills
Shortness of breath or difficulty breathing (not attributed to any other health condition)
Cough: new or worsening, not attributed to another health condition
Fatigue
Muscle or body aches
Headache
New loss of taste or smell
Sore throat (not attributed to any other health condition)
Congestion or runny nose (not attributed to any other health condition)
Nausea or vomiting
Diarrhea
In the past 14 days, if you:
Have had close contact with or are caring for an individual diagnosed with COVID-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.

HYBRID ATTENDANCE

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 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" (Failing 0-59) 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](mailto:dscott@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: [Daphne Scott dscott@southeasterntech.edu](mailto:dscott@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% point of the term in which student is enrolled (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 for the course(s) when the student completes the withdrawal form.

Important – Student-initiated withdrawals are not allowed after the 65% point. After the 65% point of the term in which the student is enrolled, the student has earned the right to a letter grade and will receive a grade for the course. Please note: Abandoning a course(s) instead of following official withdrawal procedures may result in a grade of "F" (Failing 0-59) being assigned.

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

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. A grade of "W" will count in attempted hour calculations for the purpose of Financial Aid.

EXIT EXAM

This course includes an exit exam to pass the class. You must score a 70 or higher on the exit exam to pass the class.

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

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.

Assignment due dates are listed on the attached lesson schedule. Students are expected to have the assignment completed at the beginning of class on the date that it is due. It is within the instructor's discretion to accept or reject late assignments. Any late assignments accepted will be subject to a ten-point penalty each day the assignment is late. After three class meetings, no late assignments will be accepted; a zero will be recorded.

Unannounced quizzes are subject to be given on any day. A grade of zero will be assigned for any quizzes missed. There will be no makeup of quizzes. Any zeros recorded will be included in the final score calculation.

ACADEMIC DISHONESTY POLICY

The STC Academic Dishonesty Policy states 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 STC Catalog and Student 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" 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 second 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 1 st Street, Vidalia Office 165 Phone: 912-538-3126 Email: Helen Thomas hthomas@southeasterntech.edu	Lanie Jonas, Director of Human Resources Vidalia Campus 3001 East 1 st 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 \(www.southeasterntech.edu\)](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
Labs	50%
Test	20%
Exit Exam	30%
Total	100%

GRADING SCALE

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

ELTR 1180 Electrical Controls

Fall Semester 2021 Lesson Plan

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
August 18-31	1- Introduction to Motor Control	<ul style="list-style-type: none"> • Electrical Safety • Three-Phase Power • Disconnects and Protective Devices • Three-Phase Motors 	<p>Hybrid</p> <ul style="list-style-type: none"> • Under lessons click on 1-Introduction to Motor Control and complete the content module. • Complete the following Skills\Simulators in the module. <ul style="list-style-type: none"> • Skill 1 - Perform a Lockout/Tagout • Skill 2 - Use a Voltmeter to Verify Supply Voltage • Skill 3 - Use a Digital Multimeter to Check the Condition of a Fuse • Skill 4 - Connect a Dual-Voltage Three-Phase Motor for Low Voltage Operation • Skill 5 - Connect a Dual-Voltage Three-Phase Motor for High Voltage Operation • Complete the Test <p>Class</p> <ul style="list-style-type: none"> • Complete labs on the trainers in the lab <ul style="list-style-type: none"> • Lesson 1- Intro to Motor Control Lab • Introductory Lab Future Tek Trainer 	1 A,C
August 31- September 14	2-Manual Motor Control and Overload Protection	<ul style="list-style-type: none"> • Manual Motor Control • Manual Motor Starter Operation • Overload Protection 	<p>Hybrid</p> <ul style="list-style-type: none"> • Under lessons click on 2-Manual Motor Control and Overload Protection and complete the content module • Complete the following Skills\Simulators in the module. <ul style="list-style-type: none"> • Skill 1 - Connect and Operate a Simple Motor Control Circuit • Activity 1 - Test the Operation of a Manual Motor Starter Using a Multimeter • Skill 2 - Start and Stop a Motor Using a Manual Starter • Skill 4 - Select the Correct Heaters for a NEMA Overload • Complete the Test <p>Class</p> <ul style="list-style-type: none"> • Complete labs on the trainers in the lab <ul style="list-style-type: none"> • Complete Manual Motor Starter on wood Trainer or Lab 20- Future Tek Motor Control Trainer 	2,3 A,C

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
September 14-28	3-Control Transformers	<ul style="list-style-type: none"> Introduction to Transformers Control Transformer Operation Control Transformer Application in Machine Control 	<p>Hybrid</p> <ul style="list-style-type: none"> Under lessons click on 3-Control Transformers and complete the content module Complete the following Skills\Simulators in the module. <ul style="list-style-type: none"> Skill 1 - Calculate the Turns Ratio of a Transformer Skill 2 - Calculate the Secondary Voltage of a Transformer Skill 3 - Connect and Operate a Control Transformer Skill 4 - Test a Control Transformer Complete the Test <p>Class</p> <ul style="list-style-type: none"> Complete the labs that were in the simulators on the trainers in the lab <ul style="list-style-type: none"> Complete Control Transformer Skills 1 and 2 Complete Control Transformer Skills 3 and 4 on wood trainer or Lab 1- Future Tek Trainer 	6 A,B,C
September 28- October 12	4-Control Ladder Logic	<ul style="list-style-type: none"> Electrical Control Systems Basic Ladder Diagram Basics Logic Elements 	<p>Hybrid</p> <ul style="list-style-type: none"> Under lessons click on 4-Control Ladder Logic and complete the content module Complete the following Skills\Simulators in the module. <ul style="list-style-type: none"> Skill 1 - Connect and Operate a Basic Electrical Control Circuit That Uses a Pushbutton Switch Skill 3 - Draw a Ladder Diagram of a Control Circuit Skill 4 - Determine the Operation of a Control Circuit Given a Ladder Diagram Skill 5 - Connect and Operate a Control Circuit Given a Ladder Diagram Skill 6 - Connect and Operate an AND Logic Circuit Skill 7 - Connect and Operate an OR Logic Circuit Skill 8 - Connect and Operate a NOT Logic Circuit Skill 9 - Connect and Operate a NOR Logic Circuit Skill 10 - Connect and Operate a NAND Logic Circuit Skill 11 - Design a Multiple Start/Stop Pushbutton Station Control Circuit Complete the Test <p>Class</p> <ul style="list-style-type: none"> Complete the labs that were in the simulators <ul style="list-style-type: none"> Control Ladder Logic Skills on Wood Trainer or Labs 2-6 Future Tek Trainer 	6 A,C
October 11		<ul style="list-style-type: none"> Midterm 	<ul style="list-style-type: none"> Midterm- There is no midterm exam. Just a reminder that the semester is half way complete. Stay on Task and finish strong 	

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
October 12-26	5-Control Relays and Motor Starters	<ul style="list-style-type: none"> • Control Relays • Magnetic Motor Starters • Two-wire Control • Three-wire Start/Stop Control 	<p>Hybrid</p> <ul style="list-style-type: none"> • Under lessons click on 5-Control Relays and Motor Starters and complete the content module • Complete the following Skills\Simulators in the module. <ul style="list-style-type: none"> • Skill 1 - Connect and Operate a Control Relay in a Circuit • Skill 2 - Connect and Operate a Memory Logic Circuit • Skill 3 - Connect and Operate a Magnetic Motor Starter Connected to a Three-Phase Motor • Skill 4 - Connect and Operate a Two-Wire Motor Control Circuit • Skill 5 - Connect and Operate a Three-Wire Motor Control Circuit • Skill 6 - Design a Multiple Operator Station Three-Wire Control Circuit • Complete the Test <p>Class</p> <ul style="list-style-type: none"> • Complete the labs that were in the simulators on both trainers <ul style="list-style-type: none"> • Control Relay and Motor Starter Lab Wood Trainer • Future Tek Trainer Lab 10-11 	2,5 A,C
October 26			<ul style="list-style-type: none"> • 65%- Last day to withdraw from course with a W. After this point you cannot withdraw. 	
October 26- November 9	6-Reversing Motor Control	<ul style="list-style-type: none"> • Manual Motor Reversing • Reversing Magnetic Motor Starter • Interlocking for Reversing Motor Control • Modes of Operation • Hand-Off-Auto Control 	<p>Hybrid</p> <ul style="list-style-type: none"> • Under lessons click on 7-Reversing Motor Control and complete the content module and the simulators in the module. <ul style="list-style-type: none"> • Skill 2- Connect and Operate a Reversing Magnetic Motor Starter to Reverse a Motor • Skill 4 - Connect and Operate a Reversing Motor Circuit with Mechanical and Auxiliary Contact Interlocking • Skill 7 - Connect and Operate a Control Circuit to Jog a Motor • Skill 8 - Connect and Operate a Forward/Reverse Jog Control Circuit • Skill 10 - Connect and Operate a Hand-Off-Automatic Motor Control Circuit • Complete the Test <p>Class</p> <ul style="list-style-type: none"> • Complete the labs that were in the simulators on both trainers <ul style="list-style-type: none"> • Reversing/Jog/HOA Motor Control Lab Wood Trainer • Future Tek Trainer Lab 12, 13, 19 	2,6 A,C

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
November 9-23	7-Automatic Input Devices	<ul style="list-style-type: none"> Limit Switches Float Switches 	<p>Hybrid</p> <ul style="list-style-type: none"> Under lessons click on 8-Automatic Input Devices and complete the content module and the simulators in the module. Skill 1 - Connect and Operate a Limit Switch Skill 3 - Connect and Operate a Float Switch Skill 4 - Connect and Operate a Pump Control Circuit Skill 6 - Design a Pump Control Circuit That Includes H-O-A Operation Skill 7 - Test an Automatic Input Switch Complete the Test <p>Class</p> <ul style="list-style-type: none"> Complete the labs that were in the simulators Lesson 7 Automatic Input Devices Labs on Wood Trainer Future Tek Trainer Labs 21 and 22 	3,6 A,C
November 22-23		<ul style="list-style-type: none"> Holiday 	Thanksgiving	
November 23-December 7	8-Basic Timer Control	<ul style="list-style-type: none"> On-Delay Timers Off-Delay Timers 	<p>Hybrid</p> <ul style="list-style-type: none"> Under lessons click on 9-Basic Timer Control and complete the content module and the simulators in the module. Skill 1 - Connect and Operate an On-Delay Timer Circuit Skill 3 - Connect and Operate an Off-Delay Timer Circuit Skill 5 - Test a Timer Relay Skill 6 - Troubleshoot an On-Delay Timer Circuit Skill 7 - Troubleshoot an Off-Delay Timer Circuit Complete the Test <p>Class</p> <ul style="list-style-type: none"> Complete the labs that were in the simulators Lesson 8 Basic Timer Lab Wood Trainer Future Tek Trainer Labs 14, 15, 16 	2,4 A,C
November 23-December 7	Final Control Projects	<ul style="list-style-type: none"> Complete final Project for Exit Exam 	Final Control Projects	

Competency Areas:

1. Electrical Principles and Laws
2. Contacts and Starters
3. Series and Parallel Switches
4. Laboratory procedures and Safety 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.