



**TENTATIVE—SUBJECT TO CHANGE**  
**ELTR 1220 Industrial PLC's**  
**COURSE SYLLABUS**  
**Spring Semester 2021**

**COURSE INFORMATION**

Credit Hours/Minutes: 4/4500  
Campus/Class Location: Vidalia Campus/Main Building Lab 429  
Class Meets: Tuesday and Thursday 1:00PM-2:40PM  
Course Reference Number (CRN): 40153  
Preferred Method of Contact: Email

**INSTRUCTOR CONTACT INFORMATION**

Instructor Name: Tony Criswell  
Email Address: [Tony Criswell \(tcriswell@southeasterntech.edu\)](mailto:tcriswell@southeasterntech.edu)  
Campus/Office Location: Vidalia Main Building 429  
Office Hours: Tuesday and Thursday 7:00AM-8:00AM and 3:00PM-4:00PM  
Phone: 478-289-2235  
Fax Number: 912-538-3156  
Tutoring Hours: Available upon request

**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**

No text required. Will be using an online text.

**REQUIRED SUPPLIES & SOFTWARE**

Highlighter

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

**COURSE DESCRIPTION**

Introduces operational theory, systems terminology, PLC installations, and programming procedures for programmable logic controls. Emphasis is placed on PLC programming, connections, installations, and start-up procedures.

## **MAJOR COURSE COMPETENCIES**

PLC hardware and software, PLC functions and terminology, introductory numbering systems, PLC installation and setup, PLC programming basics, relay logic instructions, timers and counters, connecting field devices to I/O cards, and PLC safety procedures.

## **PREREQUISITE(S)**

None

## **COURSE OUTLINE**

1. PLC Hardware and Software
2. PLC Functions and Terminology
3. Introductory Numbering Systems
4. PLC Installation and Setup
5. PLC Programming Basics
6. Relay Logic Instructions
7. Timers and Counters
8. Connecting Field Devices to I/O Cards
9. PLC Safety Procedures

## **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**

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 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.

<b>COVID-19 Key Symptoms</b>
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)
<b>In the past 14 days, if you:</b>
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, who test positive for COVID-19 or who have been exposed to a COVID-19 positive person, are required to self-report using the [COVID 19 Health Reporting Form https://bit.ly/2Xq4g0f](https://bit.ly/2Xq4g0f). Report all positive cases of COVID-19 to your instructor and [Stephannie Waters](mailto:swaters@southeasterntech.edu), Exposure Control Coordinator, [swaters@southeasterntech.edu](mailto:swaters@southeasterntech.edu), 912-538-3195.

#### **TRADITIONAL 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 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" (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: Macy Gay (mgay@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: Macy Gay (mgay@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% 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.

## **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 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:

<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 Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 165 Phone: 912-538-3126 Email: <a href="mailto:Helen.Thomas@southeasterntech.edu">Helen Thomas</a> <a href="mailto:hthomas@southeasterntech.edu">hthomas@southeasterntech.edu</a>	Lanie Jonas, Director of Human Resources Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 138B Phone: 912-538-3230 Email: <a href="mailto:Lanie.Jonas@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
Labs	60%
Test	40%
Total	100%

**GRADING SCALE**

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

## ELTR 1220 Industrial PLC's Spring Semester 2021 Lesson Plan

Date/Week	Lesson	Content	Assignments & Tests Due Dates	Competency Area
<b>January 11</b>			<ul style="list-style-type: none"> <li>• <b>Spring Semester Begins</b></li> </ul>	
January 12-21	1	Introduction to Programmable Logic Controllers(PLC)	<ul style="list-style-type: none"> <li>• Instructor will go over syllabus, lesson plan, lab rules, how to access the portion of the class and introduction of PLC's</li> <li>• Getting Started – Start Here Items:               <ul style="list-style-type: none"> <li>• Read all items</li> <li>• Complete STC Pledge Acknowledgement</li> </ul> </li> <li>• Instructor will discuss information about PLC's, show a demonstration of how PLC's work, different components of the PLC</li> <li>• Complete Introduction to Programmable Logic Controllers Content in lesson 1- Introduction to Programmable Logic Controllers in Blackboard</li> <li>• Complete Introduction to Programmable Logic Controllers Test in lesson 1- Introduction to Programmable Logic Controllers in Blackboard</li> </ul>	1,2,9 a,b,c
<b>January 18</b>			<ul style="list-style-type: none"> <li>• <b>Holiday</b></li> </ul>	
January 21- February 2	2	PLC Program Operations	<ul style="list-style-type: none"> <li>• Instructor will discuss PLC Program Operations Show different types of communication and components</li> <li>• Complete Lab 1 on Future Tek Trainer</li> <li>• Complete Lab 2 on Future Tek Trainer</li> <li>• Complete Lab 3 on Future Tek Trainer</li> <li>• Complete PLC Program Operations Content in lesson 2- PLC Program Operations in Blackboard</li> <li>• Complete PLC Program Operations Test Content in lesson 2- PLC Program Operations in Blackboard</li> </ul>	1,2,,4,9 a,b,c
February 4-16	3	PLC Programming	<ul style="list-style-type: none"> <li>• Instructor will discuss PLC Programming</li> <li>• Complete Lab 4 on Future Tek Trainer</li> <li>• Complete PLC Programming Content in lesson 3- PLC Programming in Blackboard</li> <li>• Complete PLC Programming Test in lesson 3- PLC Programming in Blackboard</li> </ul>	3 ,9 a,b,c
February 16-25	4	PLC Motor Control	<ul style="list-style-type: none"> <li>• Instructor will discuss PLC Motor Control</li> <li>• Complete Lab 5 on Future Tek Trainer</li> <li>• Complete PLC Motor control Content in lesson 4- PLC Motor Control in Blackboard</li> <li>• Complete PLC Motor Control Test in lesson 4- PLC Motor Control in Blackboard</li> </ul>	4,5,6,9 a, b, c

Date/Week	Lesson	Content	Assignments & Tests Due Dates	Competency Area
March 3			<ul style="list-style-type: none"> <li>• <b>Midterm- There is no midterm exam. Just a reminder that the semester is half way complete. Stay on Task and finish strong</b></li> </ul>	
March 2-11	5	PLC Timer and Counter Instructions	<ul style="list-style-type: none"> <li>• Instructor will discuss PLC and Timer and Counter Instructions</li> <li>• Complete lab 6 on Future Tek Trainer</li> <li>• Complete Lab 7 on Future Tek Trainer</li> <li>• Complete PLC Timer and Counter Instructions Content in lesson 5- PLC Timer and Counter Instructions in Blackboard</li> <li>• Complete PLC Timer and Counter Instructions Test in lesson 4- 5- PLC Timer and Counter Instructions in Blackboard</li> </ul>	5,7,9 a, b, c
March 22			<ul style="list-style-type: none"> <li>• <b>65%- Last day to withdraw from course with a W. After this point you can not withdraw.</b></li> </ul>	
March 11-23	6	Introduction to PLC Troubleshooting	<ul style="list-style-type: none"> <li>• Instructor will discuss PLC Troubleshooting</li> <li>• Complete Troubleshooting Labs</li> <li>• Complete Introduction to PLC Troubleshooting Content in lesson 6- Introduction to PLC Troubleshooting in Blackboard</li> <li>• Complete Introduction to PLC Troubleshooting test in lesson 6- Introduction to PLC Troubleshooting in Blackboard</li> <li>• Complete Troubleshooting exercises on Amatrol Trainer</li> </ul>	5,9 a, b, c
April 5-6			<ul style="list-style-type: none"> <li>• <b>Spring Break</b></li> </ul>	
March 25- April 15	7	Event Sequencing	<ul style="list-style-type: none"> <li>• Instructor will discuss Event Sequencing</li> <li>• Complete Lab 12 on Future Tek Trainer</li> <li>• Complete Lab 13 on Future Tek Trainer</li> <li>• Complete Lab 14 on Future Tek Trainer</li> <li>• Complete Event Sequencing Content in lesson 7- Event Sequencing in Blackboard</li> <li>• Complete Event Sequencing test in lesson 7- Event Sequencing in Blackboard</li> </ul>	5,9 a, b, c
April 15-27	8	Application Development	<ul style="list-style-type: none"> <li>• Instructor will discuss Application Development</li> <li>• Complete labs Future Tek Trainer</li> <li>• Complete Application Development Content in lesson 8- Application Development in Blackboard</li> <li>• Complete Application Development test in lesson 8- Application Development in Blackboard</li> <li>• Complete Instructor Evaluation</li> </ul>	8,9 a, b, c
April 29			<ul style="list-style-type: none"> <li>• Spring Semester Ends</li> </ul>	



**Competency Areas:**

1. PLC Hardware and Software
2. PLC Functions and Terminology
3. Introductory Numbering Systems
4. PLC Installation and Setup
5. PLC Programming Basics
6. Relay Logic Instructions
7. Timers and Counters
8. Connecting Field Devices to I/O Cards
9. PLC Safety Procedures

**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