



**ELCR-2130 Programmable Controllers
COURSE SYLLABUS
Summer Semester 2021 (202116)**

COURSE INFORMATION

Credit Hours/Minutes: 3 Hours / 3750 Minutes
Campus/Class Location: Vidalia Campus, Gillis Building B, Room 827
Class Meets: Monday and Wednesday (MW), 1:00 PM to 4:50 PM
Course Reference Number (CRN): 60183

INSTRUCTOR CONTACT INFORMATION

Instructor Name: William Greene
Campus/Office Location: Vidalia Campus, Gillis Building B, Room 822
Office Hours: By Appointment Only
Email Address: [William Greene \(wgreene@southeasterntech.edu\)](mailto:wgreene@southeasterntech.edu)
Phone: (912) 538-3102
Fax Number: (912) 538-3106

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

Future Tec Programmable Logic Controller (PLC) Lab Student Manual
(available at STC Bookstore)

REQUIRED SUPPLIES & SOFTWARE

Engineering / Scientific Calculator (TI-83 Plus or better recommended)

Note: Although students can use their smart phones and tablets to access their online course(s), exams, discussions, assignments, and other graded activities should be performed on a personal computer. Neither Blackboard nor Georgia Virtual Technical Connection (GVTC) provide technical support for issues relating to the use of a smart phone or tablet so students are advised to not rely on these devices to take an online course.

COURSE DESCRIPTION

Provides the basic skills and techniques used in industrial application of programmable controls. Topics include: controller hardware, programming, PC applications, and troubleshooting.

MAJOR COURSE COMPETENCIES / COURSE OUTLINE

1. Controller Hardware
2. Programming
3. PC Applications
4. Troubleshooting

PREREQUISITE(S)

ELCR 1020

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. All students must pledge that they have read and understand the STC Online Orientation within the first five days of class. Online students are responsible for checking e-mails and Blackboard announcements DAILY.

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 COVID-19 at home (not in healthcare setting),

COVID-19 Key Symptoms

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, 912-538-3195.

TRADITIONAL 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" (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 and 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 and 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" 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 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' 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.)

Students are required to take all tests and complete all assignments scheduled during the semester. Failure to take Tests/Exam(s) and complete assignments will result in a grade of zero. There will be no makeup of assignments or EXAMS. If Internet or browser failure occurs, contact instructor immediately. A decision will be made at that time if the exam will be reset. Instructor reserves the right to deduct points from the exam scores for exceeding the scheduled time limit on the exam and/or requiring student to come to campus to take the final exam. Note: If student notifies instructor about exam problems because of technical issues after the due date or on the last day of the semester, the student will NOT be allowed to make-up the exam. No exceptions! Assignments must be turned in on the assigned date and will not be accepted late, a grade of zero will be given. ALL Assignments are due according to the lesson plan.

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 108 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 138-B 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
Lab Experiments	50%
Exams	25%
Final Exam	25%

GRADING SCALE

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

DISCLAIMER STATEMENTS:

- (1) Instructor reserves the right to change the syllabus and/or lesson plan as necessary.
- (2) The official copy of the syllabus is located inside the student's online course shell or will be given to them during face to face class time the first day of the semester. The syllabus displayed in advance of the semester in a location other than the course you are enrolled in is for planning purposes only.

**ELCR-2130 Programmable Controllers
Summer Semester 2021 (202116)
Lesson Plan**

WEEK 1

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
May 17	Intro	Course Orientation Introduction to PLCs (Programmable Logic Controllers).	Login to BLACKBOARD and complete the START HERE items.	1,2,3,4,a,c
May 19	Lab 1	Creating a New Project.	Complete Lab 1 Labs 1 through 15 are located in the PLC Lab Student Manual	2,3,a,b,c

WEEK 2

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
May 24	Lab 2 Lab 3	Creating a Simple Ladder Logic Program. Setting up Communications and Downloading a Project to the PLC.	Complete Lab 2 Complete Lab 3	2,3,a,b,c
May 26	Lab 4 Lab 5	Output Latch / Unlatch Instructions. Branch Instructions.	Complete Lab 4 Complete Lab 5	2,3,a,b,c

WEEK 3

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
May 31		HOLIDAY – Memorial Day	HOLIDAY – Memorial Day	
June 2	Lab 6	TON / TOF / RTO Timer Instructions.	Complete Lab 6	2,3,a,b,c
June 7	Lab 7	Up / Down Counter Instructions.	Complete Lab 7	2,3,a,b,c

WEEK 4

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
June 9	Lab 1 through Lab 7	PLC Exam 1	Take PLC Exam 1 on BLACKBOARD	1,2,3,a,b,c
June 14	Lab 8	Compare Instructions.	Complete Lab 8	2,3,a,b,c

WEEK 5

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
June 16	Lab 9	Sequencer Instructions. MIDTERM (June 17)	Complete Lab 9 MIDTERM (June 17)	2,3,a,b,c
June 21	Lab 10	Bit Shift Instructions.	Complete Lab 10	2,3,a,b,c

WEEK 6

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
June 23	Lab 11	Modifying Rungs.	Complete Lab 11	2,3,a,b,c
June 28	Lab 12	Making Changes Online. 65% Semester Point	Complete Lab 12 65% Semester Point	2,3,a,b,c

WEEK 7

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
June 30	Lab 13	Using the Force Function.	Complete Lab 13	2,3,a,b,c
July 5 – 8		HOLIDAY – Summer Break	HOLIDAY – Summer Break	
July 12	Lab 14 Lab 15	Monitoring Tags. Analog.	Complete Lab 14 Complete Lab 15	2,3,a,b,c

WEEK 8

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
July 14	Lab 8 through Lab 15	PLC Exam 2	Take PLC Exam 2 on BLACKBOARD	1,2,3,a,b,c
July 19	Trouble Shoot	PLC Troubleshooting Exercise	Complete PLC Troubleshooting Exercise	1,4,a,b,c

WEEK 9

Date	Chapter / Lesson	Content	Assignments & Tests Due Dates	Competency Area
July 21	Bonus	Instructor Discretion Project	Review PLC Project Criteria. Design (paper) PLC Project. Program PLC Project. Demonstrate working PLC Project.	1,2,3,4,a,b,c
July 26		SEMESTER ENDS	SEMESTER ENDS	

FINALS WEEK

Date	Chapter /Lesson	Content	Assignments & Tests Due Dates	Competency Area
July 27	Lab 1 through Lab 15	PLC Final Exam	Take PLC Final Exam on BLACKBOARD	1,2,3,4,a,b,c
July 28	Lab 1 through Lab 15	PLC Final Exam	Take PLC Final Exam on BLACKBOARD	1,2,3,4,a,b,c

COMPETENCY AREAS:

1. Controller Hardware
2. Programming
3. PC Applications
4. Troubleshooting

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.