



**ELCR 2130 – Programmable Controllers**  
**COURSE SYLLABUS**  
**SUMMER SEMESTER 2017**

**Semester:** Summer 2017 (201716)  
**Course Title:** Programmable Control  
**Course Number:** ELCR 2130  
**Credit Hr / Min:** 3 hr / 3750 min  
**Class Location:** RMTC Room 824  
**Class Meets:** MW, 1:00 to 4:30 p.m.  
**CRN:** 60049

**Instructor:** William Greene  
**Office Hrs:** Mon – Thurs 11:30 am – Noon  
4:30 pm – 6:00 pm  
**Office:** RMTC Room 822, Vidalia Campus  
**E-mail:** [wgreene@southeasterntech.edu](mailto:wgreene@southeasterntech.edu)  
**Phone:** 912-538-3102 **FAX:** 912-538-3106  
Preferred contact method is e-mail

**REQUIRED TEXTS:** Future Tec PLC Lab Student Manual (Bookstore)

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

**PREREQUISITES:** ELCR 1020

**MAJOR COURSE COMPETENCIES / COURSE OUTLINE:**

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

**GENERAL EDUCATION CORE COMPETENCIES:** STC has identified the following general education core competencies that graduates will attain:

- 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.

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

**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.

**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.

**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, 912-538-3126, [hthomas@southeasterntech.edu](mailto:hthomas@southeasterntech.edu), to coordinate reasonable accommodations.

**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, (912) 538-3126, [hthomas@southeasterntech.edu](mailto:hthomas@southeasterntech.edu).

**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.

**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 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:

##### **--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.

**--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.

**--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 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>ADA/Section 504 - Equity- Title IX (Students) - OCR Compliance Officer</b>	<b>Title VI - Title IX (Employees) - EEOC Officer</b>
Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 108 Phone: 912-538-3126 <a href="mailto:hthomas@southeasterntech.edu">hthomas@southeasterntech.edu</a>	Blythe Wilcox, Director of Human Resources Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 138B Phone: 912-538-3147 <a href="mailto:bwilcox@southeasterntech.edu">bwilcox@southeasterntech.edu</a>

**GRIEVANCE PROCEDURES:** Grievance procedures can be found in the Catalog and Handbook located on STC'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 STC website at [www.southeasterntech.edu](http://www.southeasterntech.edu).

**GRADING POLICY:**

**GRADING SCALE**

<b>Lab Experiments</b>	<b>50%</b>	A (90-100)	For <b>any</b> course to count as credit for graduation, student must make a C or higher in the course.
<b>Exams</b>	<b>25%</b>	B (80-89)	
<b>Final Exam</b>	<b>25%</b>	C (70-79)	
	<b>100%</b>	D (60-69)	
		F (0-59)	

**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.*

**\*\*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  
LESSON PLAN  
Summer Semester 2017 (60049)**

Color Codes: Black = Assignments / Information, Blue = Graded Assignments,

Date	Chapter /Lesson	Content	Assignments & Tests	*Comp. Area
<b>WEEK 1</b>				
May 17	<b>Intro</b>	Course Orientation <b>Introduction to PLCs (Programmable Logic Controllers).</b>	Login to BLACKBOARD and visit your STC Orientation course and make sure that you understand your role as a student. <b>Post on Start Here Discussion Boards</b>	1,2,3,4, a,b,c
22	<b>Lab 1</b>	<b>Creating a New Project.</b>	<b>Complete Lab 1 – Labs 1 through 15 are located in the PLC Lab Student Manual</b>	2,3, a,b,c
<b>WEEK 2</b>				
May 24	<b>Lab 2 Lab 3</b>	<b>Creating a Simple Ladder Logic Program. Setting up Communications and Downloading a Project to the PLC.</b>	<b>Complete Lab 2 Complete Lab 3</b>	2,3, a,b,c
31	<b>Lab 4 Lab 5</b>	<b>Output Latch / Unlatch Instructions. Branch Instructions.</b>	<b>Complete Lab 4 Complete Lab 5</b>	2,3, a,b,c
<b>WEEK 3</b>				
June 5	<b>Lab 6</b>	<b>TON / TOF / RTO Timer Instructions.</b>	<b>Complete Lab 6</b>	2,3, a,b,c
7	<b>Lab 7</b>	<b>Up / Down Counter Instructions.</b>	<b>Complete Lab 7</b>	2,3, a,b,c
<b>WEEK 4</b>				
June 12	<b>Lab 1 thru Lab 7</b>	<b>PLC Exam 1</b>	<b>Take PLC Exam 1 on BLACKBOARD</b>	1,2,3, a,b,c
14	<b>Lab 8</b>	<b>Compare Instructions.</b>	<b>Complete Lab 8</b>	2,3, a,b,c
<b>WEEK 5</b>				
June 19	<b>Lab 9</b>	<b>Sequencer Instructions. MID-TERM (June 20<sup>th</sup>)</b>	<b>Complete Lab 9</b>	2,3, a,b,c
21	<b>Lab 10</b>	<b>Bit Shift Instructions.</b>	<b>Complete Lab 10</b>	2,3, a,b,c
<b>WEEK 6</b>				
June 26	<b>Lab 11</b>	<b>Modifying Rungs.</b>	<b>Complete Lab 11</b>	2,3, a,b,c
28		<b>SUMMER ACTIVITY DAY</b>	<b>SUMMER ACTIVITY DAY</b>	

<b>WEEK 7</b>				
		<b>JULY 4<sup>th</sup> HOLIDAY (July 3 – July 6)</b>	<b>JULY 4<sup>th</sup> HOLIDAY (July 3 – July 6)</b>	
July 10	Lab 12 Lab 13	Making Changes Online. Using the Force Function.	Complete Lab 12 Complete Lab 13	2,3, a,b,c
12	Lab 14 Lab 15	Monitoring Tags. Analog.	Complete Lab 14 Complete Lab 15	2,3, a,b,c
<b>WEEK 8</b>				
July 17	Lab 8 thru Lab 15	PLC Exam 2	Take PLC Exam 2 on BLACKBOARD	1,2,3, a,b,c
19	Trouble Shoot	PLC Troubleshooting Exercise	Complete PLC Troubleshooting Exercise	1,4, a,b,c
<b>WEEK 9</b>				
July 24	Bonus	Instructor Discretion Project	Review PLC Project Criteria Design (paper) PLC Project	1,2,3,4, a,b,c
26	Bonus	Instructor Discretion Project SEMESTER ENDS	Program PLC Project Demonstrate working PLC Project	1,2,3,4, a,b,c
<b>FINALS WEEK</b>				
July 31	Lab 1 thru Lab 15	PLC Final Exam	Take PLC Final Exam on BLACKBOARD	1,2,3,4, a,b,c
Aug 1	Lab 1 thru Lab 15	PLC Final Exam	Take PLC Final Exam on BLACKBOARD	1,2,3,4, a,b,c

**\* Competency Areas:**

**Electronics Technology Competency Areas:**

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

**General Core Competency Areas:**

- |   |  |
|---|--|
| a. The ability to utilize standard written English. | mathematical problems.                                     |
| b. The ability to solve practical                   | c. The ability to read, analyze, and interpret information |