

## TEAM 1070 - Programmable Logic Controllers (4 Credits)

### Course Description

The Programmable Logic Controllers course teaches students to interface with programmable logic controllers (PLCs). Programmable logic controllers are the brains of all modern automation technology systems. In this course students develop a working knowledge and skill set in the following competencies: ladder logic, programming standards, hardware selection, various inputs and outputs, communication, troubleshooting, setup and installation.

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### Course Objectives

- Demonstrate a working knowledge of safety practices and procedures.
  - Operate, install, maintain, and program programmable logic controller systems.
  - Demonstrate a working knowledge of ladder logic programming.
  - Apply motor control logic within a programmable logic controller system.
  - Apply timers and event sequencing within a programmable logic controller system.
  - Configure inputs and outputs for various applications.
  - Apply systems diagnostics and troubleshooting of programmable logic control circuit
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### Course Outline

- Introduction to Programmable Controller Operations and Setup
- PLC Programming and Applications
- PLC Motor Controls
- PLC Timers and Event Sequencing
- Analog Inputs and Outputs

## Assignments and Assessments

Orientation  
Amatrol Tutorial.pptx  
Lab Packet Instructions.pptx  
Signing into Canvas\_.pdf  
How To Login to Amatrol Elearning  
Programmable Logic Controllers Hands On Skills (Labs)  
Introduction To Programmable Logic Controllers (PLC)  
Basic Panelview Plus Terminal Operations  
PLC Program Operations  
PLC Programming  
PLC Motor Control  
PLC Timer & Counter Instructions  
Event Sequencing  
Program Control Instructions  
Math & Data Move Instructions  
Panelview Plus Applications Editing  
Panelview Plus Applications Editing 2  
Analog Inputs  
Analog Outputs  
Variable Output Applications  
End of Course Survey  
Work Ethic Assessment

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*Subject to change. Please consult your Canvas course for the most current instructions and updates.*

## Classroom Hours

Mo, Tu, W, Th  
8:00 AM - 11:00 AM  
3:00 PM - 6:00 PM

Friday  
8:00 AM - 11:00 AM  
1:00 PM - 4:00 PM

For a full list of course hours visit: [Course Schedule](#)

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## Instructor Contact Information

Cody Post — [cpost@stech.edu](mailto:cpost@stech.edu)  
Tyson Schurtz — [tschurtz@stech.edu](mailto:tschurtz@stech.edu)  
Naomi Cook — [ncook@stech.edu](mailto:ncook@stech.edu)

Office Hours: By appointment

Email is the preferred method of communication; you will receive a response within 24 hours during regular business hours.

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## Canvas Information

Canvas is the where course content, grades, and communication will reside for this course.

- [stech.instructure.com](http://stech.instructure.com)
  - For Canvas passwords or any other computer-related technical support contact Student Services.
  - For regular Hours and Weekdays call (435) 586 - 2899.
  - For after Hours & Weekends call (435) 865 - 3929 (Leave a message if no response).
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## Course Policies

Students must achieve at least 80% to pass graded work. Incomplete assignments must be redone to meet the required standards. Guidelines, rules, and expectations for completing assignments are provided in each course. In alignment with industry standards, students shall not be permitted to use cell phones in the lab area, except when researching information pertinent to coursework. Safety Glasses must be worn in the lab. No Loose Clothing when operating Equipment, No Shorts, flip flops, or sandals. Possession or use of controlled substances or their imitations in the lab, which can impair judgment or emergency response, is a severe safety violation. This disregard for safety may result in immediate withdrawal from the program. No one may work in the lab with any substance, legal or otherwise, that may impair them in any way.

High School Power School Grades: Quarter student grades will be determined by student progress percentage. Faculty will use the higher percentage of either 1) quarter progress, or 2) cumulative progress for the current training plan year. The progress percentage will be used with the grading scale to determine the minimum grade. High School Grade Scale: The following grading scale will be used to determine a letter grade from the progress percentage:

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|-----------------|-----------------|-----------------|-----------------|
| • A : 94 - 100% | • B : 83 - 86%  | • C : 73 - 76%  | • D : 63 - 66%  |
| • A- : 90 - 93% | • B- : 80 - 82% | • C- : 70 - 72% | • D- : 60 - 62% |
| • B+ : 87 - 89% | • C+ : 77 - 79% | • D+ : 67 - 69% | • F : 0 - 59%   |

## Additional Information

InformaCast Statement: Southwest Tech uses InformaCast to ensure the safety and well-being of our students. In times of emergency, such as weather closures and delays, this app allows us to promptly deliver notifications directly to your mobile devices. To stay informed and receive real-time updates, we encourage all students to sign up for notifications. Your safety is our priority, and staying connected ensures a swift response to any unforeseen circumstances. More information and directions for signing up are available at: <https://stech.edu/emergency-notifications/>

Internet Acceptable Use Policy: The student is expected to review and follow the Southwest Technical College Internet Safety Policy at: <https://stech.edu/students/policies/>

Student Code of Conduct Policy: The student is expected to review and follow the Southwest Technical College Student Code of Conduct Policy at: <https://stech.edu/students/policies/>

Accommodations: Students with medical, psychological, learning, or other disabilities desiring accommodations or services under ADA, must contact the Student Services Office. Student Services determines eligibility for and authorizes the provision of these accommodations and services. Students must voluntarily disclose that they have a disability, request an accommodation, and provide documentation of their disability. Students with disabilities may apply for accommodations, based on an eligible disability, through the Student Services office located at 757 W. 800 S., Cedar City, UT 84720, and by phone at (435) 586-2899. No diagnostic services are currently available through Southwest Technical College.

Safety and Building Maintenance: The College has developed and follows a variety of plans to ensure the safe and effective operation of its facilities and programs. The following plans are available online:

1) Facilities Operations and Maintenance Plan; 2) Technical Infrastructure Plan; and 3) Health and Safety Plan.

Withdrawals and Refunds: Please refer to the Southwest Technical College Refund Policy at: <https://stech.edu/students/policies/>

Any high school or adult student, who declares a technical training objective is eligible for admission at Southwest Technical College (Southwest Tech). Program-specific admissions requirements may exist and will be listed on the Southwest Tech website. A high school diploma or equivalent is not required for admission but is mandatory for students seeking Title IV Federal Financial Aid.

Non-Discriminatory Policy: Southwest Technical College affirms its commitment to promote the goals of fairness and equity in all aspects of the educational enterprise, and bases its policies on the idea of global human dignity.

Southwest Tech is committed to a policy of nondiscrimination. No otherwise qualified person may be excluded from participation in or be subjected to discrimination in any course, program or activity because of race, age, color, religion, sex, pregnancy, national origin or disability. Southwest Technical College does not discriminate on the basis of sex in the education programs or activities that it operates, as required by Title IX and 34 CFR part 106. The requirement not to discriminate in education programs or activities extends to admission and employment. Inquiries about Title IX and its regulations to STECH may be referred to the Title IX Coordinator, to the Department of Education, and/or to the Office for Civil rights.

If you believe you have experienced discrimination or harassment on our campus, please contact the Title IX Coordinator, Cory Estes: [cestes@stech.edu](mailto:cestes@stech.edu), (435) 865-3938.

For special accommodations, please contact the ADA Coordinator, Cyndie Tracy: [ctracy@stech.edu](mailto:ctracy@stech.edu), (435) 865-3944.

Southwest Technical College

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