



INST 2850 Programmable Logic Controls section name section credit hours Credits
Syllabus

Course Information

Meeting times and location: section meeting_times section location

Catalog description: An introduction to Programmable Logic Controllers and the basic building blocks of digital control circuits including ladder logic circuits, timers, counters and sequences in typical applications. The study will include software and hardware applications.

Prerequisites: Take INST-174 and INST-225.

Terms offered: Fall and Spring

Section-specific Course Description:

Course Level Objectives

Upon successful completion of the course, the student will be able to...

1. Describe the function of the hardware components used in PLC systems.
2. Interpret typical I/O and CPU specifications
3. Write and enter ladder logic programs
4. Convert fundamental relay ladder diagrams to PLC ladder logic programs
5. Understand timers, counters, latches and math instructions.
6. Understand PLC installation practices.
7. Describe a typical SCADA application.

Required Texts and/or Materials

Programmable Logic Controllers

9781259680885

Frank Petruzella

McGraw-Hill Higher Education

2016-01-22

Required Technology and Software

- Canvas
- Chrome, Safari, or Firefox

Technical Support

Technical support is available through the San Juan College Help Desk 24/7/365. The help desk can be reached at 505-566-3266 or by creating a ticket at [San Juan College Help Desk](#).

For tickets and password reset: [San Juan College Help Desk](#)

For Canvas support information: [Canvas Support](#)

Accessibility/Privacy Policies for all Technology Tools Used

Scroll to the middle of the linked page to view

[Accessibility/Privacy Policies for all Technology Tools Used](#)

Course Requirements

Students will do the following activities:

lecture

Trainer programming

reading

homework

COVID Safe Practices for Being on Campus

COVID Safe Practices for Being on Campus

What to do if you have COVID-19 symptoms, are exposed or test positive:

- Do NOT come to campus, but continue to monitor your symptoms and stay home if you test positive for COVID-19 or when you are not feeling well.
- Contact your instructor.

There is no longer a requirement to complete the intake form if you test positive for COVID-19, experience symptoms, or come in contact with a confirmed positive COVID-19 case.

San Juan College continues to follow the NM Department of Health guidelines with regard to COVID-19. These guidelines can be reviewed by visiting their website at: <https://cv.nmhealth.org/>.

Additional SJC COVID-19 information and resources can be found on the [Coronavirus](#) webpage.

Student Support

Student Services and Support

At San Juan College, we support your academic success and overall health. We know that students often experience a range of stressors that can impact learning and well-being. If you, or someone you know is experiencing mental health concerns, or could benefit from effective academic strategies, there are free and confidential resources available to enrolled students through the Counseling Center. To learn more, visit the [Counseling Center website](#) or call 505-566-3404.

The Student Support webpage provides information on counseling, tutoring, technical support, and many other support services available to San Juan College students.

[Student Support](#)

Academic Support

Academic Support webpage provides information on academic advising, the library, Testing Center, and the honors program.

[Academic Support](#)

Participation and Attendance Policy

1. Attendance is 25% of the total grade. Attendance is recorded daily.
2. Attendance is graded in a 4-point format:

4	Arrive On-time, Participated the full session
3	Arrive Late or Leave Early
2	Arrive Late and Leave Early
1	Missed either class or lab or missed an hour of class
0	Absent

1. The instructor determines if the absence can be excused using situational awareness based on the communication had with the student. Documentation may be requested by the instructor.
2. Make-up Labs are allowed if the students have had appropriate communication with the instructors. The students need to make an appointment with the instructors for the make-up labs. If the students do not show up for the make-up lab appointment, no more make up labs will be granted for the rest of the semester.
3. To receive a final grade above "C," the attendance should be higher than 70%.

Inclement Weather Information

Students will receive notification of class delays and cancellations due to inclement weather via the SJC SunsAlert and SJC student email. Face-to-face classes will not meet in person; however, students are advised to check with instructors about alternative meeting options, as some may choose to meet via zoom. Hybrid classes will meet as scheduled via zoom. For questions regarding your class delay or cancelation, please contact your instructor. If you have not already done so, [Sign up for SJC SunsAlert](#) to stay up to date on weather alerts.

Other Classroom Policies and Expectations

The student will receive a copy of School of Energy General Policy, Waiver and Release form, and other related lab policies on the first day of the academic semester. The students are expected to read, acknowledge and be familiar with these policies and expectations.

Canvas Participation and Expectations

Check Canvas daily

Instructor Response Times & Regular Interaction Expectations

One business day

Course Time Commitment

8-12 hours outside class per week.

Grading

Here is a sample of one formatting option:

What does it mean to weight a grade? When grades are weighted, some assignments (e.g. Final Exam) or categories of assignments (e.g. Quizzes) count more than others.

Why not just assign more points to the things that are harder? In a perfect world this would work.

However, there is far more flexibility in weighting grades. If an instructor decides that quizzes should make up 25% of the total points in a course, it doesn't matter whether there is 1 quiz, 5 quizzes or, heaven forbid, 50 quizzes. The total points earned for the quizzes still makes up 25% of the final grade. If an instructor decides to increase or decrease the workload based on the particular needs of any group of students, weighted grades make that easy. In a scenario where grades are weighted by category and the number of assignments in a category changes, no changes to the course points or course guide would be necessary. If, on the other hand, the point system was used, and a change to the course assignments is needed, the total points for the class would change and the course guide would need to be updated.

How are the points for a weighted item calculated? Multiply each score over the total points possible by the weight. For example, the midterm is worth 100 points. If you earned 90/100 the calculation would be $.25(90/100)=.225$. Expressed as a percent, you earned 22.5%

Grading Scale:

A = 91 % or higher

B = 83–90

C = 75–82

D = 67–74

F = 66 or below.

Category Points Weight

Final	100	25
Homework	100	15
Trainer Labs	100	15
Special Projects	100	20
Attendance	100	25

Key Dates to Remember

[Full Academic Calendar](#)

Course Schedule

See file in Canvas for Daily activity plan (updated by section)

College Policies

The following information also applies to your work in this class. If you have special needs for campus emergency situations, please inform me immediately.

1. Academic Accommodations - American with Disabilities Act (ADA)

If you believe you need academic accommodations due to physical or other disabilities, you are encouraged to contact Accessibility Services as soon as possible. The coordinator can work with you to determine eligibility and appropriate accommodations strategies. Please go to your MY SJC portal page, click on Accessibility Services, and complete all the steps.

You can also contact the college's Accessibility Services Coordinator at (505) 566-3271 or accessibilityservices@sanjuancollege.edu. More information is available on the website listed

above.

2. The Family Educational Rights and Privacy Act (FERPA)

Refer to the catalog for information regarding [FERPA](#).

3. Academic Honesty Rules

San Juan College expects all students to adhere to the [Academic Honesty Rules](#) as posted online. These are the official guidelines for all classes at San Juan College.

4. Student Conduct Statement

College is preparation for professional opportunities, and professional conduct is expected in courses, including online classes, as well as any written communications, and interactions with members of the college community. As part of our learning community, students are expected to interact and communicate in a mature, respectful, thoughtful, and supportive manner. Students who demonstrate disrespectful, hostile, belittling, bullying or other disruptive behavior will be subject to potential consequences and possible dismissal from the college. The college will take appropriate action when students demonstrate threatening behavior (to others or self). Students should refer to the Code of Conduct in the Student Handbook for additional information.

5. Student Safety

Keeping students safe is a priority, and part of that is ensuring that we have the ability to communicate emergency messages to you. SJC SunsAlert is San Juan College's Emergency Notification System that will provide you with real-time information about campus closures, extreme weather, and other emergencies through your San Juan College email, text alerts, and phone calls. Should an emergency occur prior to activating your SJC SunsAlert, you will only receive messages through your San Juan College email. To receive a phone call and text alert, you must activate your SJC SunsAlert account and register your phone number. To activate your SJC SunsAlert account, you will need to download the Everbridge App in the App Store or Google Play. Once the app is downloaded follow these steps:

- Open the app
- Click on "Find an organization or subscription" button
- In the search box, either type in San Juan College or 87402
- Click on "SJC SunsAlert"
- Sign on using your SJC email and password
- Once you sign in, you will want to click on "Manage My Profile"

- Click on “edit”
- Include your preferred communication methods.
- Enter your cell phone number in the personal text msg field to ensure you receive text messages.
- Confirm all information (phone number & email) is correct and up to date.
- If you need help with the app, please call John Myers at 505-566-4224 or Kenny Hibner at 505-566-3050.

In the event of an emergency, an SJC SunsAlert message will be sent, and depending on the situation, you will be instructed to do one of the following:

- Evacuate the building
- Shelter in place (Campus doors are locked, and operations continue as normal. During this situation, no one other than law enforcement is allowed in or out of the campus.)
- Lockdown (Campus doors are locked. All operations cease, and you should take cover in your immediate area. No one other than law enforcement is allowed in or out of the campus.)

The Department of Public Safety (DPS) is available 24 hours per day. In an emergency, you can reach DPS staff by calling (505) 566-4444.

6. Non-Discrimination, Sexual Harassment, and Retaliation.

San Juan College does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age, genetic, veteran’s status, or on the basis of any other category protected under federal, state and local laws. If you have experienced sexual harassment, sexual assault, or any other form of protected class discrimination, we encourage you to make a report. If you report to a faculty member, she/he/they are obligated by policy to share knowledge, notice, and/or reports of harassment, discrimination, and/or retaliation with the Title IX Coordinator. These disclosures include but are not limited to reports of sexual assault, dating/domestic violence, and stalking. You may also make a confidential report to a SJC Counselor. Please refer to San Juan College’s [Title IX](#) site for further details.

San Juan College’s Title IX Coordinator is Stacey Allen, Assistant Director of Human Resources/Equity, Diversity, and Inclusion Officer. The office is located at the Educational Services Center Building, 2nd Floor, Human Resources, Room 4243 at (505) 566-3515 or allens@sanjuancollege.edu.

7. Drop for Non-Attendance and/or Non-Participation

Class Attendance and Participation Expectation:

Face-to-Face -- Students are expected to attend and participate in class regularly. Any student missing more than 10% of consecutive class time, (For example, in a regular 15-week class that meets twice a week, this equates to the student missing 3 consecutive classes) without

consultation with the instructor may be considered as having abandoned the course.

On-line -- Students are expected to participate regularly and submit all course assignments, based on the course guide definition. A student who does not submit any assignments during a consecutive 10% of the course (1.5 weeks of a 15-week semester) without consulting the instructor, may be considered as having abandoned the course. Logging in does not meet the attendance standard.

Competency-Based Education Classes -- Students are expected to have regular and substantive interactions with their instructor and to actively work on course content. A student who has not submitted coursework, nor had substantive interactions with the instructor over a consecutive 10% of the term, without the instructor's prior approval, will be considered to have abandoned the competency progression. Last date of attendance will be recorded as the last date that coursework was submitted or that the student met with the instructor. For on-line learners, logging in does not meet the attendance standard.

Failure to Meet Class Participation Expectation:

Students who fail to meet participation expectations will have their last date of attendance recorded. This date will be used to recalculate any financial aid received/veteran's benefits received, and the student may be required to repay the institution/government. If the student does not drop the course, an 'X' grade will be recorded. An 'X' grade impacts the grade point average the same as an 'F'.

8. Grading Policies

Incomplete: Incomplete Grade Assignment ([Incomplete Grades Information](#))

The grade of I (Incomplete) is given for passing work that could not be completed during the semester because of circumstances beyond the student's control. Ordinarily, the assignment of an I is given by the course instructor at the time final grades are due.

In no case is an I grade to be used to avoid assignment of D or F grades for marginal or failing work or to require a student to enroll in the class the next semester because work was not completed on time. Circumstances warranting the issuance of an I grade must be beyond the student's control and must be documented on the appropriate form prior to approval.

I grades can be removed only during the subsequent 16 weeks from the end of term, or within the time limit set by the instructor. Removal of an I is accomplished by completing the work in a manner acceptable to the instructor. Re-enrollment in the course under the repeat option does not remove the prior grade of I. Students should not re-enroll for the course. An I not made up

within 16 weeks or within the time limit set by the instructor will change to an F grade thereafter and cannot be changed by work completion.

9. Grade Appeals

The policy for grade appeals is in the Academic Catalog ([Grade Appeal Policy](#)).

Student Handbook

The Student Handbook provides information on Student support, student organizations, and San Juan College policies.

[Student Handbook](#)

Online Course Fee

Online Courses - San Juan College requires all online courses to include some form of assessment to demonstrate the mastery of course objectives. This could include exams, capstone projects, e-portfolios, presentations, final papers or other appropriate assessments. The use of a proctoring platform, plagiarism detection software or other method to ensure that assessments are completed by the enrolled student is required.

A course fee of \$5.00 is assessed for all online courses at San Juan College to cover the cost of the above services. Students who are required to take a proctored exam and choose to use a physical testing center outside the SJC Testing Center or SJC Disability Services will be responsible for the cost of using that center.