



21Spring Semester

Advanced PLC Programming

ELT 261.I50

Number of Credits: 3

Days Class Meets: Wednesday

Meeting Times: 5 – 6 pm (NOTE: this is an optional meeting)

Location/Venue: Online, Self-paced

Instructor: Eddie Burkhead

Contact Phone: phone

Contact Email: BurkheaEdwardL@jccmi.edu

Online Office Hours: Thursday, 10 am to 8 pm

Course Description

This course introduces topics that include advanced PLC programming, troubleshooting and data communications.

Prerequisite(s)

None

Course Goals

Students will be able to solve programming problems and build robust automation solutions

Course Objectives

Students will demonstrate best programming practices

Students will test programs in order to ensure safe operation

Students will build PLC programs that use digital and analog IO

Students will work with different data types effectively

Students will create user-defined function blocks

Students will utilize advanced mathematical and programmatic instructions

Students will simulate programs

Textbook (chose appropriate options below, delete what does not apply)

- None

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Textbook Zero. This text is available in a digital format to rent or purchase through the JC Bookstore. Please see the links posted on our class Jet Net site.

X Open Educational Resources (OER) are strongly encouraged. OERs are teaching, learning, and research materials that are either (a) in the public domain or (b) licensed in a manner that provides everyone with free permission to:

- Retain – make, own, and control a copy of the resource
- Reuse – use your original, revised, or remixed copy of the resource publicly
- Revise – edit, adapt, and modify your copy of the resource
- Remix – combine your original or revised copy of the resource with other existing material to create something new
- Redistribute – share copies of your original, revised, or remixed copy of the resource with others

X If no textbooks are required, students will not have to purchase books for the course.

Follett Access

- Please [review the cost of your required materials](#) to determine the best option for you to purchase your materials.
- For more information on the Follett ACCESS Program, you can view the [view the frequently asked questions](#).

If after reviewing the costs, if you choose to opt out, you may do so here: www.jccmi.edu/optout.

Please note your opt out selection is for your *entire* semester schedule. You cannot opt out/opt in to individual courses. And you must opt out by the due date of your first class, which is the 3rd day after the start of your earliest course.

If you have questions about materials, please contact the Jackson College Follett bookstore at jackson@bkstr.com

For account billing questions, please contact the Jackson College Cashier at jccashier@jccmi.edu

Extras

Grading Procedure

Unit Projects – 140 points

Grading Scale

GPA	GRADE RANGE
4.0	94-100%
3.5	89-93%
3.0	84-88%
2.5	78-83%
2.0	72-77%
1.5	66-71%
1.0	60-65%
0.5	55-59%
0.0	0-54%

Failure

Any grade below 2.0 is failing.

Academic Honesty Policy

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

Plagiarism

Plagiarism is defined as the failure to give credit for the use of material from outside sources. Plagiarism includes but is not limited to:

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

Cheating

Cheating is defined as obtaining answers/material from an outside source without authorization. Cheating includes, but is not limited to:

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

Accessibility

Jackson College understands that cultivating a broadly diverse community is crucial to our educational mission and to our foundational commitment to leadership and service. Jackson College is fully committed to ensuring our courses are accessible to everyone including those with disabilities. We are currently working to increase accessibility and usability of our course materials in order to meet or exceed the requirements of Section 508 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1991 and Web Content Accessibility Guidelines (WCAG) 2.0. For more information about Jackson College's efforts to ensure accessibility please visit the [Jackson College accessibility web page](#).

If you have an accessibility need in any of our classes please e-mail the Center for Student Success at JCCSS@jccmi.edu or visit the [Center for Student Success web page](#).

At the Center for Student Success (CSS), we are committed to providing all students the opportunity to achieve academic success by providing a variety of support services free of charge to Jackson College students. This includes, but is not limited to, peer and faculty tutoring, mental health referral, temporary assistance with transportation, various workshops/seminars, and the TRIO program.

In addition, the CSS staff is committed to adapting the College's general services to meet the individual needs of otherwise qualified students with disabilities, for the purpose of providing equal access to all programs and facilities.

Course Management

Incompletes may be given due to extenuating circumstances if student is unable to complete the course after successfully finishing at least 50% of the course time. The instructor must be contacted with the request for it to be granted.

Makeup Policy

Students may redo projects and exercises for a higher grade

Help

Students should reach out to their instructor for help. Plenty of other online resources exist, including on YouTube and other free sites.

Academic Advising

It is important to contact a Center for Student Success professional prior to the start of the semester in order to receive accommodations in a timely manner. While we will make every effort to coordinate accommodations in a timely manner, failure to self-identify prior to the start of the semester may delay notification to instructors and timeliness of acquiring accommodations. Accommodations do not automatically carry over to the next semester. Please e-mail JCCSS@jccmi.edu or visit the [Accommodations for Students with Disabilities](#) web page

Student Responsibilities

Requirements beyond scheduled classes or laboratories, e.g., clinicals, extra credit assignments, TBA sessions, field placement, special project instructions, contract learning conditions, study hours required outside class, unscheduled class meetings, attendance at concerts or other required events.

Attendance- Participation Policy

For online sections

Just as in a traditional classroom course, regular class participation and keeping up on the reading and assignments is strongly correlated with survival in college. It is my recommendation that you plan to do your assignments and take your exams BEFORE the last day they are due. If problems occur, there is time to fix them before the deadline.

In compliance with Federal Title IV funding requirements, as well as college initiatives, I will be monitoring student participation on a regular basis and officially reporting student activity throughout the term to assure compliance with college policy and federal regulations. It is imperative that you log in to the course and actively participate within the first couple of days of the term to validate your enrollment in the course. After that, not actively participating in class may result in you being withdrawn from the course. Being withdrawn from a course can have an impact on financial aid, billing, athletic eligibility, and housing status. As a college student you are responsible for how your participation impacts your academic progress; the accountability lies with you.

Caveat

As this is an online course, it is highly unlikely we will deviate from the schedule below. However, if this must happen, the instructor reserves the right to update this document accordingly. Any changes to grade system and schedule will be communicated to students.

Calendar

WEEK	DATE	TOPIC	HOMEWORK
1	6/7	DIGITAL MOTOR CONTROL	PROJECT 1
2	6/14	TIMERS AND COUNTERS	PROJECT 2
3	6/21	MACHINE STATES	PROJECT 3
4	6/28	ANALOG CONTROLS	PROJECT 4
5	7/5	PID LOOPS AND VFDS	PROJECT 5
6	7/12	HMI AND SCADA	PROJECT 6
7	7/10	FINAL PROJECT	PROJECT 7

Important Dates:

MONDAY 05/31/2021	MEMORIAL DAY HOLIDAY-NO CLASSES
MONDAY 07/05/2021	INDEPENDENCE DAY HOLIDAY-NO CLASSES
Monday 08/09/2021	End of Spring Semester