



**Columbus State Community College**  
**CSET Department**  
**Engineering Technology**

**COURSE:** ENGT 1300

Intro to Electric Motors, Controls, and PLC's

**CREDITS:** 4 **CLASS HOURS PER WEEK:** 6 (3 LE, 3 LB)

**PREREQUISITES:** None

**INSTRUCTOR:** Jeff Woodson

[jwoodson@csc.edu](mailto:jwoodson@csc.edu)

(614) 287-5014

Davidson Hall room 241

**DESCRIPTION OF COURSE:** This course is designed to provide a general overview of electric motors, motor controls, and rudimentary PLC programming for non-Electro-Mechanical majors.

**STUDENT LEARNING OUTCOMES:** This course is design to give students a basic understanding of electric motors, motor controls, and programmable logic controllers (PLC's) as well as their use in controlling industrial machines. Students will design and wiring simple circuits to meet a given set of criteria, troubleshoot circuits, and right a simple PLC program. This will be accomplished through their understanding of:

- Electro-magnetism and its role in changing electrical energy into movement
- Various control devices and their application in circuits
- Single and three phase motor theory and wiring
- Programmable Logic Controllers programming

**INSTITUTIONAL LEARNING GOALS**

Columbus State Community College's Institutional Learning Goals are an integral part of the curriculum and central to the mission of the college. The faculty at Columbus State has identified the following institutional learning goals:

- Critical Thinking
- Quantitative Literacy
- Informational Literacy

**COURSE MATERIALS REQUIRED:** Safety glasses with side shields

**TEXTBOOK, MANUALS, REFERENCES, AND OTHER READINGS:** 1.) "Technician's Guide to Programmable Controllers", 5<sup>th</sup> edition, by Terry Borden and Richard Cox, Delmar Publishing, ISBN # 978-1-111-54409-6 2.) Amatrol LAP's accessed in the IST lab.

**GENERAL INSTRUCTIONAL METHODS:** Lectures. Reading Assignments. Homework. Lab Exercises.

**ASSESSMENT**

Columbus State Community College is committed to assessment (measurement) of student achievement of academic outcomes. This process addresses the issues of what you need to

learn in your program of study and if you are learning what you need to learn. The assessment program at Columbus State has four specific and interrelated purposes: (1) to improve student academic achievements; (2) to improve teaching strategies; (3) to document successes and identify opportunities for program improvement; (4) to provide evidence for institutional effectiveness. In class you are assessed and graded on your achievement of the outcomes for this course. You may also be required to participate in broader assessment activities.

### **STANDARDS AND METHODS FOR EVALUATION**

Labs	= 70%	* Missed labs cannot be made up.
Midterm Exam	= 15%	
Final Exam	= 15%	

### **DEPARTMENT GRADING SCALE**

A	= 94-100
B	= 86-93
C	= 75-85
D	= 70-74
E	= 0-69

### **SPECIAL COURSE REQUIREMENTS**

- It is the student's responsibility to obtain missed handouts and assignments.
- Cell phones should be off or on vibrate during class.

### **ATTENDANCE POLICY**

Regular attendance is necessary to successfully complete the class.

### **STUDENT CODE OF CONDUCT**

As an enrolled student at Columbus State Community College, you have agreed to abide by the Student Code of Conduct as outlined in the Student Handbook. You should familiarize yourself with the student code. The Columbus State Community College expects you to exhibit high standards of academic integrity, respect and responsibility. Any confirmed incidence of misconduct, including plagiarism and other forms of cheating, will be treated seriously and in accordance with College Policy and Procedure 7-10.

### **AMERICANS WITH DISABILITIES ACT (ADA) POLICY**

It is Columbus State policy to provide reasonable accommodations to students with disabilities as stated in the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act. If you would like to request such accommodations for access, please contact Disability Services: 101 Eibling Hall, (614) 287-2570. Email or give your instructor a copy of your accommodations letter from Disability Services as soon as possible. Accommodations do not start until your instructor receives the letter, and accommodations are not retroactive. Delaware Campus students may contact an advisor in the Student Services Center on the first floor of Moeller Hall, (740) 203-8000.

## **AUDIO/VIDEO RECORDING OF CLASS**

Audio-and video-recording, transmission, or distribution of class content (e.g., lectures, discussions, demonstrations, etc.) is strictly prohibited unless the course instructor has provided written permission via the syllabus or a signed form. Authorization to record extends solely to students in that particular course. Transmitting, sharing, or distributing course content onto public, commercial, or social media sites is strictly prohibited.

## **TITLE IX**

Columbus State Community College is committed to creating a learning and working environment that is free of bias, discrimination, and harassment by providing open communication and mutual respect. If you have encountered sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin, ancestry, sex, sexual orientation, gender identity and expression, genetic information (GINA), military status or disability, please contact one of the following people:

### **Renee Fambro**

Director of Equity &  
Compliance  
Human Resources  
Rhodes Hall 115  
[rfambro@csc.edu](mailto:rfambro@csc.edu)  
Phone: 614.287.5519

### **Danette Vance**

Title IX Deputy  
Coordinator  
Human Resources  
Rhodes Hall 115  
[dvance1@csc.edu](mailto:dvance1@csc.edu)  
Phone:  
614.287.2433

### **Joan Cook**

Title IX Deputy  
Coordinator  
Human Resources  
Rhodes Hall 115  
[jcook60@csc.edu](mailto:jcook60@csc.edu)  
Phone:614.287.2636

### **Darla Van Horn**

Title IX Deputy  
Coordinator  
Student Life  
Eibling Hall 203(D)  
[dvanhorn@csc.edu](mailto:dvanhorn@csc.edu)  
Phone:614.287.2856

**For additional information about your options at Columbus State Community College or to file a complaint online, please visit our webpage at: <http://www.csc.edu/services/title-ix/>**

## **TOBACCO FREE COLUMBUS STATE 2015**

As a result of a proposal by the Ohio Board of Regents in 2012, Columbus State became a tobacco-free institution, as have colleges and universities across the nation, including The Ohio State University, which made the change in 2014. In an effort to support the health and well-being of all students, faculty, and staff, the College has adopted a tobacco free policy which prohibits the use of all tobacco-related products on College property. The primary emphasis of this approach is to focus on the elimination of tobacco use on all College property with cessation left as a choice for the individual. The effective date for the tobacco free policy was July 1, 2015.

## **INCLEMENT WEATHER OR OTHER EMERGENCIES**

In the event of severe weather or other emergencies that could force the college to close or to cancel classes, such information will be broadcast on radio stations and television stations. Students who reside in areas that fall under a Level III emergency should not attempt to drive to the college even if the college remains open.

Assignments due on a day the college is closed will be due the next scheduled class period. If an examination is scheduled for a day the campus is closed, the examination will be given on the next class day. If a laboratory is scheduled on the day the campus is closed, it will be made up at the next scheduled laboratory class. If necessary, laboratory make-up may be held on a Saturday.

Students who miss a class because of weather-related problems with the class is held as scheduled are responsible for reading and other assignments as indicated in the syllabus. If a laboratory or examination is missed, contact me as soon as possible to determine how to make up the missed exam or lab. Remember! It is the student's responsibility to keep up with reading and other assignments when a scheduled class does not meet, whatever the reason.

In the event the college is forced to close during Final Examination Week, exams scheduled for the first missed date will be rescheduled for (date), in the same location at the same time scheduled. Exams scheduled for a second missed date will be rescheduled for \_\_\_\_\_. Thus, our final exam is scheduled for (date) at \_\_\_\_\_ o'clock. If the college is closed that day, the exam will be held on (date) at \_\_\_\_\_ o'clock. If our exam is the second day the college has been closed, the exam will be held on (date) at \_\_\_\_\_ o'clock.

#### **FINANCIAL AID ATTENDANCE REPORTING**

Columbus State is required by federal law to verify the enrollment of students who participate in Federal Title IV student aid programs and/or who receive educational benefits through the Department of Veterans Affairs. It is the responsibility of the College to identify students who do not commence attendance or who stop attendance in any course for which they are registered and paid. Non-attendance is reported quarterly by each instructor, and results in a student being administratively withdrawn from the class section. Please contact the Financial Aid Office for information regarding the impact of course withdrawals on financial aid eligibility.

For the purposes of financial aid reporting, a student meets the participation and attendance criteria if s/he has actively engaged in the class and demonstrated a meaningful attempt toward completion of the course. Examples of active engagement may include, but are not limited to: completing a graded course assignment (e.g., homework, quiz, essay, project, or lab); actively participating in studio or practicum sessions; making content-related contributions to an online discussion forum (including responses both to prompts and to student/instructor posts).