

When and where	Lecture NE 2350 4:00-5:20 pm M,W	Lab NE 2350 11:10-12:50 pm W
Instructor	Prof. Wm Ted Evans, PhD, PE (Ohio)-Office: NE 1607, Phone 419-530-3349, cell 419-343-3681 Email: william.evans@utoledo.edu , web: www.eng.utoledo.edu/~wevans	
Office Hours	8:00-9:30 T, 8:00-11:30 R	
Prerequisite	Prerequisites: EET 2410 and CSET 2200	
Textbook	Online text at above website – Hybrid Text, also Hybrid Lab Text	
Useful References	Various vendor texts at their websites or at the above	
Grading	Labs based on points, Test 1 30%, Test 2 30% You may only submit no more than 20 points of labs after April 1, 2022 (A >= 90, B >= 80, C >= 70, D >= 60)	
Class rules and regulations	<ol style="list-style-type: none"> 1. No eating, drinking, or smoking in classrooms. 2. There are no make-up exams for this course. If you have a problem or conflict and cannot attend an exam, let me know beforehand and we will try to work something out. No credit will be given for a missed exam that we haven't made arrangements about beforehand unless you have a <i>really excusable</i> emergency. Cell phone use will not be allowed. If you do not have a calculator, buy one and bring it to class. <p><i>Cheating is not allowed and will be punished by rules of U of Toledo Student Handbook.</i></p>	
Catalog descriptions	Use of programmable controllers and computers in factory automation. Topics include process control, supervisory software, PLC networking, PLC/CNC integration, device configuration, use of programming software and PLC language standards.	
Topics and reading assignments (subject to change, any changes will be notified in the class beforehand)	<ul style="list-style-type: none"> • Review of A-B, Siemens PLC programming • Addressing Review • Introduction Siemens' Function/Function Block concept • Introduction to HMI concepts • Introduction to motion programming • PID algorithms – writing control programs to control processes • Safety programming • PLC networking concepts • Discrete and analog I/O concepts 	

Lab Assn 13.1	Ch. 13	13.1.1A Simon	optional	2 pts
Lab Assn 13.2	Ch. 13	13.2b Whack-a-mole	optional	2 pts
Lab Assn 13.3	Ch. 13	13.3 Bicycle	optional	4 pts
Lab Assn 14.1	Ch. 14	Lab 14.1 (Ch. 14, pg. 32)	Demo with Siemens Processor	4 pts
Lab Assn 15.1	Ch. 15	Lab 15.1	Demo with Siemens	2 pts
	Ch. 15	Lab 15.1	Demo with A-B Studio	2 pts
	Ch. 15	Lab 15.1	Demo with A-B Factory Talk	2 pts
Lab Assn 15.2	Ch. 15	Lab 15.2	Demo with Siemens	2 pts
	Ch. 15	Lab 15.2	Demo with A-B Studio	2 pts
	Ch. 15	Lab 15.2	Demo with A-B Factory Talk	2 pts
Lab Assn 16.1	Ch. 16	Lab 16.1	Optional	3 pts
Lab Assn 16.2	Ch. 16	Lab 16.2	Optional	3 pts
Lab Assn 16.3	Ch. 16	Lab 16.3	Optional	3 pts
Lab Assn 17.1	Ch. 20	Lab Text	Demo with A-B	4 pts
Lab Assn 17.1	Ch.21	Lab Text	Demo with Siemens	4 pts
Lab Assn 19.1	Ch. 22	Lab Text	Demo with Siemens	4 pts
Lab Assn 19.1	Ch. 25	Lab Text	Demo with Siemens	4 pts
Lab Assn 20.1	Ch. 20		Optional	4 pts
Additional Labs				variable