

KELLOGG COMMUNITY COLLEGE
INDUSTRIAL ELECTRICITY AND ELECTRONICS
COURSE OPTIONS

Certificate: 30 credits

Associate in Applied Science: 60 credits (combination of industrial electricity/electronics, technical electives, and general education credit requirements)

All costs are subject to change without notice. Please call 269-965-4137 to verify.

Module Subject Code and Number	Module Title	Credit	Contact Hours
<input type="checkbox"/> INEL C910-2201	ELECTRIC ELECTRONICS ORIENTAT		2
	The orientation must be completed at the EAC in Albion prior to registration. Please call 517-630-8169 to verify available orientation times.		
UNIT 05 ELECTRICAL SAFETY			
<input type="checkbox"/> INEL 05010-2201	ELECTRICAL SAFETY	0.17	4
UNIT TOTAL		0.17	4
UNIT 10 MATHEMATICS FOR ELECTRICIANS			
<input type="checkbox"/> INEL 10010-2201	ELECTRICAL MATH 1	0.08	2
<input type="checkbox"/> INEL 10020-2201	ELECTRICAL MATH 2	0.25	6
<input type="checkbox"/> INEL 10030-2201	ELECTRICAL MATH 3	0.25	6
UNIT TOTAL		0.58	14
UNIT 15 ELECTRICAL THEORY			
<input type="checkbox"/> INEL 15010-2201	ELECTRICAL THEORY	0.25	6
<input type="checkbox"/> INEL 15020-2201	STATIC ELECTRICITY	0.25	6
<input type="checkbox"/> INEL 15030-2201	CALCULATORS AND ELECTRONICS	0.25	6
<input type="checkbox"/> INEL 15040-2201	DEVICES AND SYMBOLS	0.25	6
<input type="checkbox"/> INEL 15050-2201	MULTIMETER	0.33	8
<input type="checkbox"/> INEL 15060-2201	OHM'S LAW	0.33	8
<input type="checkbox"/> INEL 15070-2201	SERIES CIRCUITS	0.33	8
<input type="checkbox"/> INEL 15080-2201	PARALLEL CIRCUITS	0.33	8
<input type="checkbox"/> INEL 15090-2201	COMBINATION CIRCUITS	0.33	8
<input type="checkbox"/> INEL 15100-2201	MAGNETISM	0.25	6
<input type="checkbox"/> INEL 15110-2201	ALTERNATING CURRENT	0.25	6
<input type="checkbox"/> INEL 15120-2201	OSCILLOSCOPE	0.33	8
<input type="checkbox"/> INEL 15130-2201	INDUCTANCE	0.42	10
<input type="checkbox"/> INEL 15140-2201	CAPACITANCE	0.42	10
<input type="checkbox"/> INEL 15150-2201	RLC CIRCUITS	0.33	8
<input type="checkbox"/> INEL 15160-2201	CONDUCTION	0.33	8
<input type="checkbox"/> INEL 15170-2201	THEORY OVERVIEW	0.21	5
UNIT TOTAL		5.19	125
UNIT 20 ELECTRICAL MOTOR CONTROLS 1			
<input type="checkbox"/> INEL 20010-2201	ELECTRICAL MOTOR CONTROLS	0.42	10
<input type="checkbox"/> INEL 20020-2201	MANUAL MOTOR CONTROLS	0.50	12
<input type="checkbox"/> INEL 20030-2201	CONTROL TRANSFORMERS	0.42	10
<input type="checkbox"/> INEL 20040-2201	CONTROL LADDER LOGIC	0.67	16
<input type="checkbox"/> INEL 20050-2201	CONTROL RELAYS MOTOR STARTERS	0.50	12
<input type="checkbox"/> INEL 20060-2201	INTRODUCTION TROUBLESHOOTING	0.33	8
<input type="checkbox"/> INEL 20070-2201	SYSTEMS TROUBLESHOOTING	0.42	10
<input type="checkbox"/> INEL 20080-2201	AUTOMATIC INPUT DEVICES	0.42	10
<input type="checkbox"/> INEL 20090-2201	ELECTRONIC SENSORS	0.33	8
<input type="checkbox"/> INEL 20100-2201	BASIC TIMER CONTROL	0.33	8

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<input type="checkbox"/> INEL 20110-2201	TIMERS AND COUNTERS	0.25	6
UNIT TOTAL		4.59	110
UNIT 25	ELECTRICAL MOTOR CONTROLS 2		
<input type="checkbox"/> INEL 25010-2201	REVERSING MOTOR CONTROL	0.33	8
<input type="checkbox"/> INEL 25020-2201	BRAKING METHODS	0.42	10
<input type="checkbox"/> INEL 25030-2201	REDUCED VOLTAGE STARTING	0.33	8
<input type="checkbox"/> INEL 25040-2201	INTRO FREQUENCY DRIVES (AC)	0.33	8
<input type="checkbox"/> INEL 25050-2201	AC DRIVES SPEED TORQUE CNT	0.33	8
<input type="checkbox"/> INEL 25060-2201	AC DRIVES ACCEL AND DECEL	0.33	8
<input type="checkbox"/> INEL 25070-2201	AC DRIVES TROUBLESHOOTING	0.33	8
<input type="checkbox"/> INEL 25080-2201	SCR MOTOR CONTROL	0.42	10
UNIT TOTAL		2.82	68
UNIT 35	NATIONAL ELECTRICAL CODE (NEC)		
<input type="checkbox"/> INEL 35010-2201	GENERAL WIRING FUNDAMENTALS	0.25	6
<input type="checkbox"/> INEL 35020-2201	WIRE RACEWAY AND BOX SIZING	0.33	8
<input type="checkbox"/> INEL 35030-2201	BRANCH CIRCUITS	0.33	8
<input type="checkbox"/> INEL 35040-2201	SERVICE FEEDER CALCULATIONS	0.25	6
<input type="checkbox"/> INEL 35050-2201	GROUNDING AND BONDING	0.33	8
<input type="checkbox"/> INEL 35060-2201	OVERCURRENT PROTECTION	0.33	8
<input type="checkbox"/> INEL 35070-2201	MOTOR CIRCUIT WIRING	0.25	6
<input type="checkbox"/> INEL 35080-2201	TRANSFORMERS	0.25	6
<input type="checkbox"/> INEL 35090-2201	GENERAL HAZARDOUS LOCATIONS	0.25	6
<input type="checkbox"/> INEL 35100-2201	HEALTH CARE FACILITIES	0.25	6
<input type="checkbox"/> INEL 35110-2201	EMERGENCY POWER SYSTEMS	0.33	8
<input type="checkbox"/> INEL 35120-2201	INDUSTRIAL APPLICATIONS	0.33	8
<input type="checkbox"/> INEL 35130-2201	SPECIAL APPLICATION WIRING	0.25	6
<input type="checkbox"/> INEL 35140-2201	NEC REVIEW	0.17	4
UNIT TOTAL		3.90	94
UNIT 50	ELECTRICAL CONTROL WIRING		
<input type="checkbox"/> INEL 50010-2201	ELECTRICAL CONTROL WIRING	0.42	10
<input type="checkbox"/> INEL 50020-2201	ELECTRICAL CONTROL SYSTEMS	1.00	24
UNIT TOTAL		1.42	34
UNIT 55	INDUSTRIAL ELECTRONICS		
<input type="checkbox"/> INEL 55010-2201	USING THE OSCILLOSCOPE	0.67	16
<input type="checkbox"/> INEL 55020-2201	METERS FOR ELECTRONICS	0.33	8
<input type="checkbox"/> INEL 55030-2201	ELECTRONIC SOLDERING	0.25	6
<input type="checkbox"/> INEL 55040-2201	SOLDERING PRINTED CIRCUIT BOAR	0.25	6
<input type="checkbox"/> INEL 55050-2201	DIODES	0.25	6
<input type="checkbox"/> INEL 55060-2201	POWER SUPPLIES	0.50	12
<input type="checkbox"/> INEL 55070-2201	PHOTO DEVICES	0.33	8
<input type="checkbox"/> INEL 55080-2201	SOLID STATE DEVICES	0.83	20

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<input type="checkbox"/> INEL 55090-2201	ELECTRONIC TIMING	0.33	8
<input type="checkbox"/> INEL 55100-2201	AMPLIFIERS	0.83	20
<input type="checkbox"/> INEL 55110-2201	DIGITAL LOGIC FUNDAMENTALS	0.50	12
<input type="checkbox"/> INEL 55120-2201	DIGITAL LOGIC APPLICATIONS	0.42	10
<input type="checkbox"/> INEL 55130-2201	PROXIMITY SWITCHING	0.17	4
<input type="checkbox"/> INEL 55140-2201	PHOTOELECTRIC DEVICES	0.17	4
<input type="checkbox"/> INEL 55150-2201	FIBER OPTIC FUNDAMENTALS	0.33	8
<input type="checkbox"/> INEL 55160-2201	FIBER OPTIC LAB	0.25	6
UNIT TOTAL		6.41	154
UNIT 75	INTRODUCTION TO CONTROL LOGIX		
<input type="checkbox"/> INEL 75010-2201	INTRO TO COMPACT LOGIX PLCS	0.25	6
<input type="checkbox"/> INEL 75020-2201	CREATING RS LOGIX 5000 PROJEC	0.25	6
<input type="checkbox"/> INEL 75030-2201	ETHERNET COMMUNICATION PROTO	0.42	10
<input type="checkbox"/> INEL 75040-2201	CREATING RS LOGIX 5000 PROGRA	0.42	10
<input type="checkbox"/> INEL 75050-2201	TON TOF RTO COUNTER INSTRUCTI	0.42	10
<input type="checkbox"/> INEL 75060-2201	CU AND CD COUNTER INSTRUCTION	0.42	10
UNIT TOTAL		2.18	52
UNIT 76	ADVANCED PROGRAMMING FOR CONTROL LOGIX		
<input type="checkbox"/> INEL 76010-2201	INTRO TO PLC TROUBLESHOOTING	0.33	8
<input type="checkbox"/> INEL 76020-2201	PLC SYSTEMS TROUBLESHOOTING	0.33	8
<input type="checkbox"/> INEL 76030-2201	EVENT SEQUENCING	0.33	8
<input type="checkbox"/> INEL 76040-2201	APPLICATION DEVELOPMENT	0.50	12
<input type="checkbox"/> INEL 76050-2201	PROGRAM CONTROL INSTRUCTIONS	0.50	12
<input type="checkbox"/> INEL 76060-2201	MATH DATA MOVE INSTRUCTIONS	0.58	14
UNIT TOTAL		2.57	62
UNIT 70	PANEL VIEW		
<input type="checkbox"/> INEL 70010-2201	INTRODUCTION TO PANEL VIEW	0.17	4
<input type="checkbox"/> INEL 70020-2201	TERMINAL OVERVIEW	0.25	6
<input type="checkbox"/> INEL 70030-2201	WIRING AND SET UP	0.25	6
<input type="checkbox"/> INEL 70040-2201	TERMINAL CONFIGURATION	0.25	6
<input type="checkbox"/> INEL 70050-2201	TROUBLESHOOTING MAINTENANCE	0.25	6
<input type="checkbox"/> INEL 70060-2201	PROGRAMMING PANEL VIEW	0.83	20
<input type="checkbox"/> INEL 70070-2201	PANEL VIEW PLC APPLICATIONS	1.04	25
<input type="checkbox"/> INEL 70080-2201	PANEL VIEW PLC COMMUNICATION	0.21	5
UNIT TOTAL		3.25	78
UNIT 85	ROBOTICS PROGRAMMING AND MAINTENANCE		
<input type="checkbox"/> INEL 85010-2201	ROBOTICS INTRODUCTION	0.67	16
<input type="checkbox"/> INEL 85020-2201	PROGRAMMING ROBOTICS	1.29	31
UNIT TOTAL		1.96	47

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TOTAL		35.04	844

FOR OFFICE USE ONLY

Instructor Approval _____ Date _____

Total Credit _____ Total Contact _____ Total Cost _____