

KELLOGG COMMUNITY COLLEGE
INDUSTRIAL ELECTRICITY AND ELECTRONICS
COURSE OPTIONS

FALL 2024

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	Lab Fees	Tuition	Total Cost
<input type="checkbox"/> INEL C910-6250	ELECTRIC ELECTRONICS ORIENTAT The orientation must be completed at the BACC in Coldwater prior to registration. Please call 517-279-5753 to verify available orientation times.		2	0.00	0.00	0.00
UNIT 05 ELECTRICAL SAFETY						
<input type="checkbox"/> INEL 05010-6250	ELECTRICAL SAFETY	0.17	4	3.00	46.50	49.50
UNIT TOTAL		0.17	4	3.00	46.50	49.50
UNIT 10 MATHEMATICS FOR ELECTRICIANS						
<input type="checkbox"/> INEL 10010-6250	ELECTRICAL MATH 1	0.08	2	13.00	21.88	34.88
<input type="checkbox"/> INEL 10020-6250	ELECTRICAL MATH 2	0.25	6	3.00	68.38	71.38
<input type="checkbox"/> INEL 10030-6250	ELECTRICAL MATH 3	0.25	6	3.00	68.38	71.38
UNIT TOTAL		0.58	14	19.00	158.64	177.64
UNIT 15 ELECTRICAL THEORY						
<input type="checkbox"/> INEL 15010-6250	ELECTRICAL THEORY	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15020-6250	STATIC ELECTRICITY	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15030-6250	CALCULATORS AND ELECTRONICS	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15040-6250	DEVICES AND SYMBOLS	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15050-6250	MULTIMETER	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15060-6250	OHM'S LAW	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15070-6250	SERIES CIRCUITS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15080-6250	PARALLEL CIRCUITS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15090-6250	COMBINATION CIRCUITS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15100-6250	MAGNETISM	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15110-6250	ALTERNATING CURRENT	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15120-6250	OSCILLOSCOPE	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15130-6250	INDUCTANCE	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INEL 15140-6250	CAPACITANCE	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INEL 15150-6250	RLC CIRCUITS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15160-6250	CONDUCTION	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15170-6250	THEORY OVERVIEW	0.21	5	23.00	57.44	80.44
UNIT TOTAL		5.19	125	391.00	1,419.54	1,810.54
UNIT 20 ELECTRICAL MOTOR CONTROLS 1						
<input type="checkbox"/> INEL 20010-6250	ELECTRICAL MOTOR CONTROLS	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INEL 20020-6250	MANUAL MOTOR CONTROLS	0.50	12	23.00	136.75	159.75
<input type="checkbox"/> INEL 20030-6250	CONTROL TRANSFORMERS	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INEL 20040-6250	CONTROL LADDER LOGIC	0.67	16	23.00	183.25	206.25
<input type="checkbox"/> INEL 20050-6250	CONTROL RELAYS MOTOR STARTERS	0.50	12	23.00	136.75	159.75
<input type="checkbox"/> INEL 20060-6250	INTRODUCTION TROUBLESHOOTING	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 20070-6250	SYSTEMS TROUBLESHOOTING	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INEL 20080-6250	AUTOMATIC INPUT DEVICES	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INEL 20090-6250	ELECTRONIC SENSORS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 20100-6250	BASIC TIMER CONTROL	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 20110-6250	TIMERS AND COUNTERS	0.25	6	23.00	68.38	91.38
UNIT TOTAL		4.59	110	253.00	1,255.39	1,508.39
UNIT 35 NATIONAL ELECTRICAL CODE (NEC)						
<input type="checkbox"/> INEL 35010-6250	GENERAL WIRING FUNDAMENTALS	0.25	6	17.00	68.38	85.38
<input type="checkbox"/> INEL 35020-6250	WIRE RACEWAY AND BOX SIZING	0.33	8	17.00	90.26	107.26

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UNIT 35 NATIONAL ELECTRICAL CODE (NEC) (CONTINUED)						
<input type="checkbox"/> INEL 35030-6250	BRANCH CIRCUITS	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35040-6250	SERVICE FEEDER CALCULATIONS	0.25	6	17.00	68.38	85.38
<input type="checkbox"/> INEL 35050-6250	GROUNDING AND BONDING	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35060-6250	OVERCURRENT PROTECTION	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35070-6250	MOTOR CIRCUIT WIRING	0.25	6	17.00	90.26	85.38
<input type="checkbox"/> INEL 35080-6250	TRANSFORMERS	0.25	6	17.00	68.38	85.38
<input type="checkbox"/> INEL 35090-6250	GENERAL HAZARDOUS LOCATIONS	0.25	6	17.00	68.38	85.38
<input type="checkbox"/> INEL 35100-6250	HEALTH CARE FACILITIES	0.25	6	17.00	68.38	85.38
<input type="checkbox"/> INEL 35110-6250	EMERGENCY POWER SYSTEMS	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35120-6250	INDUSTRIAL APPLICATIONS	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35130-6250	SPECIAL APPLICATION WIRING	0.25	6	17.00	68.38	85.38
<input type="checkbox"/> INEL 35140-6250	NEC REVIEW	0.17	4	17.00	46.50	63.50
UNIT TOTAL		3.90	94	238.00	1,066.72	1,304.72
UNIT 40 POWER DISTRIBUTION SYSTEMS						
<input type="checkbox"/> INEL 40010-6250	POWER GENERATION DISTRIBUTION	0.33	8	39.00	90.26	129.26
<input type="checkbox"/> INEL 40020-6250	ELECTRICAL WIRING TECHNIQUES	0.33	8	39.00	90.26	129.26
<input type="checkbox"/> INEL 40030-6250	WIRING SYSTEM INSTALLATION	0.42	10	39.00	114.87	153.87
<input type="checkbox"/> INEL 40040-6250	INTRODUCTION TO RACEWAYS	0.42	10	39.00	114.87	153.87
<input type="checkbox"/> INEL 40050-6250	BASIC CONDUIT BENDING	0.25	6	39.00	68.38	107.38
<input type="checkbox"/> INEL 40060-6250	ADVANCED RACEWAYS	0.25	6	39.00	68.38	107.38
<input type="checkbox"/> INEL 40070-6250	CONDUCTOR OVERCURRENT PROTECT	0.25	6	39.00	68.38	107.38
<input type="checkbox"/> INEL 40080-6250	CONDUIT SIZING WIRE PULLING	0.33	8	39.00	90.26	129.26
UNIT TOTAL		2.58	62	312.00	705.66	1,017.66
UNIT 45 FACILITY MAINTENANCE						
<input type="checkbox"/> INEL 45010-6250	PLANS AND SITE WORK	0.25	6	30.00	68.38	98.38
<input type="checkbox"/> INEL 45020-6250	INDUSTRIAL POWER SYSTEMS	0.42	10	30.00	114.87	144.87
<input type="checkbox"/> INEL 45030-6250	SIGNALING SYSTEMS	0.25	6	30.00	68.38	98.38
<input type="checkbox"/> INEL 45040-6250	MOTORS CONTROLLERS INSTALLATIO	0.33	8	30.00	90.26	120.26
<input type="checkbox"/> INEL 45050-6250	SPECIAL EQUIPMENT & HVAC	0.33	8	30.00	90.26	120.26
<input type="checkbox"/> INEL 45060-6250	INDUSTRIAL HAZARDOUS LOCATIONS	0.25	6	30.00	68.38	98.38
<input type="checkbox"/> INEL 45070-6250	SINGLE PHASE TRANSFORMERS	0.33	8	30.00	90.26	120.26
<input type="checkbox"/> INEL 45080-6250	3 PHASE TRANSFORMERS	0.50	12	30.00	136.75	166.75
<input type="checkbox"/> INEL 45090-6250	NEC TRANSFORMER REQUIREMENTS	0.25	6	30.00	68.38	98.38
<input type="checkbox"/> INEL 45100-6250	EMERGENCY ELECTRICAL SYSTEMS	0.25	6	30.00	68.38	98.38
UNIT TOTAL		3.16	76	300.00	864.30	1164.30
UNIT 50 ELECTRICAL CONTROL WIRING						
<input type="checkbox"/> INEL 50010-7201	ELECTRICAL CONTROL WIRING	0.42	10	65.00	114.87	179.87
<input type="checkbox"/> INEL 50020-7201	ELECTRICAL CONTROL SYSTEMS	1.00	24	75.00	273.50	348.50
UNIT TOTAL		1.42	34	140.00	388.37	528.37
UNIT 55 INDUSTRIAL ELECTRONICS						
<input type="checkbox"/> INEL 55010-6250	USING THE OSCILLOSCOPE	0.67	16	21.00	183.25	204.25
<input type="checkbox"/> INEL 55020-6250	METERS FOR ELECTRONICS	0.33	8	21.00	90.26	111.26
<input type="checkbox"/> INEL 55030-6250	ELECTRONIC SOLDERING	0.25	6	21.00	68.38	89.38
<input type="checkbox"/> INEL 55040-6250	SOLDERING PRINTED CIRCUIT BOAR	0.25	6	21.00	68.38	89.38
<input type="checkbox"/> INEL 55050-6250	DIODES	0.25	6	21.00	68.38	89.38
<input type="checkbox"/> INEL 55060-6250	POWER SUPPLIES	0.50	12	21.00	136.75	157.75
<input type="checkbox"/> INEL 55070-6250	PHOTO DEVICES	0.33	8	21.00	90.26	111.26

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<input type="checkbox"/> INEL 55080-6250	SOLID STATE DEVICES	0.83	20	21.00	227.01	248.01
<input type="checkbox"/> INEL 55090-6250	ELECTRONIC TIMING	0.33	8	21.00	90.26	111.26
<input type="checkbox"/> INEL 55100-6250	AMPLIFIERS	0.83	20	21.00	227.01	248.01
<input type="checkbox"/> INEL 55110-6250	DIGITAL LOGIC FUNDAMENTALS	0.50	12	21.00	136.75	157.75
<input type="checkbox"/> INEL 55120-6250	DIGITAL LOGIC APPLICATIONS	0.42	10	21.00	114.87	135.87
<input type="checkbox"/> INEL 55130-6250	PROXIMITY SWITCHING	0.17	4	21.00	46.50	67.50
<input type="checkbox"/> INEL 55140-6250	PHOTOELECTRIC DEVICES	0.17	4	21.00	46.50	67.50
<input type="checkbox"/> INEL 55150-6250	FIBER OPTIC FUNDAMENTALS	0.33	8	21.00	90.26	111.26
<input type="checkbox"/> INEL 55160-6250	FIBER OPTIC LAB	0.25	6	21.00	68.38	89.38
UNIT TOTAL		6.41	154	336.00	1,753.20	2,089.20
TOTAL		26.58	639	1,992.00	7,658.32	9,650.32

FOR OFFICE USE ONLY

Instructor Approval _____ Date _____

Total Credit _____ Total Contact _____ Total Cost _____