

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 C910-6250 | ELECTRIC ELECTRONICS ORIENTAT | | 2 |
| | The orientation must be completed at the BACC in Coldwater prior to registration. Please call 517-279-5753 to verify available orientation times. | | |
| UNIT 05 ELECTRICAL SAFETY | | | |
| <input type="checkbox"/> INEL 05010-6250 | ELECTRICAL SAFETY | 0.17 | 4 |
| UNIT TOTAL | | 0.17 | 4 |
| UNIT 10 MATHEMATICS FOR ELECTRICIANS | | | |
| <input type="checkbox"/> INEL 10010-6250 | ELECTRICAL MATH 1 | 0.08 | 2 |
| <input type="checkbox"/> INEL 10020-6250 | ELECTRICAL MATH 2 | 0.25 | 6 |
| <input type="checkbox"/> INEL 10030-6250 | ELECTRICAL MATH 3 | 0.25 | 6 |
| UNIT TOTAL | | 0.58 | 14 |
| UNIT 15 ELECTRICAL THEORY | | | |
| <input type="checkbox"/> INEL 15010-6250 | ELECTRICAL THEORY | 0.25 | 6 |
| <input type="checkbox"/> INEL 15020-6250 | STATIC ELECTRICITY | 0.25 | 6 |
| <input type="checkbox"/> INEL 15030-6250 | CALCULATORS AND ELECTRONICS | 0.25 | 6 |
| <input type="checkbox"/> INEL 15040-6250 | DEVICES AND SYMBOLS | 0.25 | 6 |
| <input type="checkbox"/> INEL 15050-6250 | MULTIMETER | 0.33 | 8 |
| <input type="checkbox"/> INEL 15060-6250 | OHM'S LAW | 0.33 | 8 |
| <input type="checkbox"/> INEL 15070-6250 | SERIES CIRCUITS | 0.33 | 8 |
| <input type="checkbox"/> INEL 15080-6250 | PARALLEL CIRCUITS | 0.33 | 8 |
| <input type="checkbox"/> INEL 15090-6250 | COMBINATION CIRCUITS | 0.33 | 8 |
| <input type="checkbox"/> INEL 15100-6250 | MAGNETISM | 0.25 | 6 |
| <input type="checkbox"/> INEL 15110-6250 | ALTERNATING CURRENT | 0.25 | 6 |
| <input type="checkbox"/> INEL 15120-6250 | OSCILLOSCOPE | 0.33 | 8 |
| <input type="checkbox"/> INEL 15130-6250 | INDUCTANCE | 0.42 | 10 |
| <input type="checkbox"/> INEL 15140-6250 | CAPACITANCE | 0.42 | 10 |
| <input type="checkbox"/> INEL 15150-6250 | RLC CIRCUITS | 0.33 | 8 |
| <input type="checkbox"/> INEL 15160-6250 | CONDUCTION | 0.33 | 8 |
| <input type="checkbox"/> INEL 15170-6250 | THEORY OVERVIEW | 0.21 | 5 |
| UNIT TOTAL | | 5.19 | 125 |
| UNIT 20 ELECTRICAL MOTOR CONTROLS 1 | | | |
| <input type="checkbox"/> INEL 20010-6250 | ELECTRICAL MOTOR CONTROLS | 0.42 | 10 |
| <input type="checkbox"/> INEL 20020-6250 | MANUAL MOTOR CONTROLS | 0.50 | 12 |
| <input type="checkbox"/> INEL 20030-6250 | CONTROL TRANSFORMERS | 0.42 | 10 |
| <input type="checkbox"/> INEL 20040-6250 | CONTROL LADDER LOGIC | 0.67 | 16 |
| <input type="checkbox"/> INEL 20050-6250 | CONTROL RELAYS MOTOR STARTERS | 0.50 | 12 |
| <input type="checkbox"/> INEL 20060-6250 | INTRODUCTION TROUBLESHOOTING | 0.33 | 8 |
| <input type="checkbox"/> INEL 20070-6250 | SYSTEMS TROUBLESHOOTING | 0.42 | 10 |
| <input type="checkbox"/> INEL 20080-6250 | AUTOMATIC INPUT DEVICES | 0.42 | 10 |
| <input type="checkbox"/> INEL 20090-6250 | ELECTRONIC SENSORS | 0.33 | 8 |
| <input type="checkbox"/> INEL 20100-6250 | BASIC TIMER CONTROL | 0.33 | 8 |
| <input type="checkbox"/> INEL 20110-6250 | TIMERS AND COUNTERS | 0.25 | 6 |

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| UNIT TOTAL | | 4.59 | 110 |
| UNIT 35 | NATIONAL ELECTRICAL CODE (NEC) | | |
| <input type="checkbox"/> | INEL 35010-6250 GENERAL WIRING FUNDAMENTALS | 0.25 | 6 |
| <input type="checkbox"/> | INEL 35020-6250 WIRE RACEWAY AND BOX SIZING | 0.33 | 8 |
| <input type="checkbox"/> | INEL 35030-6250 BRANCH CIRCUITS | 0.33 | 8 |
| <input type="checkbox"/> | INEL 35040-6250 SERVICE FEEDER CALCULATIONS | 0.25 | 6 |
| <input type="checkbox"/> | INEL 35050-6250 GROUNDING AND BONDING | 0.33 | 8 |
| <input type="checkbox"/> | INEL 35060-6250 OVERCURRENT PROTECTION | 0.33 | 8 |
| <input type="checkbox"/> | INEL 35070-6250 MOTOR CIRCUIT WIRING | 0.25 | 6 |
| <input type="checkbox"/> | INEL 35080-6250 TRANSFORMERS | 0.25 | 6 |
| <input type="checkbox"/> | INEL 35090-6250 GENERAL HAZARDOUS LOCATIONS | 0.25 | 6 |
| <input type="checkbox"/> | INEL 35100-6250 HEALTH CARE FACILITIES | 0.25 | 6 |
| <input type="checkbox"/> | INEL 35110-6250 EMERGENCY POWER SYSTEMS | 0.33 | 8 |
| <input type="checkbox"/> | INEL 35120-6250 INDUSTRIAL APPLICATIONS | 0.33 | 8 |
| <input type="checkbox"/> | INEL 35130-6250 SPECIAL APPLICATION WIRING | 0.25 | 6 |
| <input type="checkbox"/> | INEL 35140-6250 NEC REVIEW | 0.17 | 4 |
| UNIT TOTAL | | 3.90 | 94 |
| UNIT 40 | POWER DISTRIBUTION SYSTEMS | | |
| <input type="checkbox"/> | INEL 40010-6250 POWER GENERATION DISTRIBUTION | 0.33 | 8 |
| <input type="checkbox"/> | INEL 40020-6250 ELECTRICAL WIRING TECHNIQUES | 0.33 | 8 |
| <input type="checkbox"/> | INEL 40030-6250 WIRING SYSTEM INSTALLATION | 0.42 | 10 |
| <input type="checkbox"/> | INEL 40040-6250 INTRODUCTION TO RACEWAYS | 0.42 | 10 |
| <input type="checkbox"/> | INEL 40050-6250 BASIC CONDUIT BENDING | 0.25 | 6 |
| <input type="checkbox"/> | INEL 40060-6250 ADVANCED RACEWAYS | 0.25 | 6 |
| <input type="checkbox"/> | INEL 40070-6250 CONDUCTOR OVERCURRENT PROTECT | 0.25 | 6 |
| <input type="checkbox"/> | INEL 40080-6250 CONDUIT SIZING WIRE PULLING | 0.33 | 8 |
| UNIT TOTAL | | 2.58 | 62 |
| UNIT 45 | FACILITY MAINTENANCE | | |
| <input type="checkbox"/> | INEL 45010-6250 PLANS AND SITE WORK | 0.25 | 6 |
| <input type="checkbox"/> | INEL 45020-6250 INDUSTRIAL POWER SYSTEMS | 0.42 | 10 |
| <input type="checkbox"/> | INEL 45030-6250 SIGNALING SYSTEMS | 0.25 | 6 |
| <input type="checkbox"/> | INEL 45040-6250 MOTORS CONTROLLERS INSTALLATIO | 0.33 | 8 |
| <input type="checkbox"/> | INEL 45050-6250 SPECIAL EQUIPMENT & HVAC | 0.33 | 8 |
| <input type="checkbox"/> | INEL 45060-6250 INDUSTRIAL HAZARDOUS LOCATIONS | 0.25 | 6 |
| <input type="checkbox"/> | INEL 45070-6250 SINGLE PHASE TRANSFORMERS | 0.33 | 8 |
| <input type="checkbox"/> | INEL 45080-6250 3 PHASE TRANSFORMERS | 0.50 | 12 |
| <input type="checkbox"/> | INEL 45090-6250 NEC TRANSFORMER REQUIREMENTS | 0.25 | 6 |
| <input type="checkbox"/> | INEL 45100-6250 EMERGENCY ELECTRICAL SYSTEMS | 0.25 | 6 |
| UNIT TOTAL | | 3.16 | 76 |
| UNIT 50 | ELECTRICAL CONTROL WIRING | | |
| <input type="checkbox"/> | INEL 50010-7201 ELECTRICAL CONTROL WIRING | 0.42 | 10 |

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| <input type="checkbox"/> INEL 50020-7201 | ELECTRICAL CONTROL SYSTEMS | 1.00 | 24 |
| UNIT TOTAL | | 1.42 | 34 |
| <hr/> | | | |
| UNIT 55 | INDUSTRIAL ELECTRONICS | | |
| <input type="checkbox"/> INEL 55010-6250 | USING THE OSCILLOSCOPE | 0.67 | 16 |
| <input type="checkbox"/> INEL 55020-6250 | METERS FOR ELECTRONICS | 0.33 | 8 |
| <input type="checkbox"/> INEL 55030-6250 | ELECTRONIC SOLDERING | 0.25 | 6 |
| <input type="checkbox"/> INEL 55040-6250 | SOLDERING PRINTED CIRCUIT BOAR | 0.25 | 6 |
| <input type="checkbox"/> INEL 55050-6250 | DIODES | 0.25 | 6 |
| <input type="checkbox"/> INEL 55060-6250 | POWER SUPPLIES | 0.50 | 12 |
| <input type="checkbox"/> INEL 55070-6250 | PHOTO DEVICES | 0.33 | 8 |
| <input type="checkbox"/> INEL 55080-6250 | SOLID STATE DEVICES | 0.83 | 20 |
| <input type="checkbox"/> INEL 55090-6250 | ELECTRONIC TIMING | 0.33 | 8 |
| <input type="checkbox"/> INEL 55100-6250 | AMPLIFIERS | 0.83 | 20 |
| <input type="checkbox"/> INEL 55110-6250 | DIGITAL LOGIC FUNDAMENTALS | 0.50 | 12 |
| <input type="checkbox"/> INEL 55120-6250 | DIGITAL LOGIC APPLICATIONS | 0.42 | 10 |
| <input type="checkbox"/> INEL 55130-6250 | PROXIMITY SWITCHING | 0.17 | 4 |
| <input type="checkbox"/> INEL 55140-6250 | PHOTOELECTRIC DEVICES | 0.17 | 4 |
| <input type="checkbox"/> INEL 55150-6250 | FIBER OPTIC FUNDAMENTALS | 0.33 | 8 |
| <input type="checkbox"/> INEL 55160-6250 | FIBER OPTIC LAB | 0.25 | 6 |
| UNIT TOTAL | | 6.41 | 154 |
| TOTAL | | 28.00 | 675 |

FOR OFFICE USE ONLY

Instructor Approval _____ Date _____

Total Credit _____ Total Contact _____ Total Cost _____