

# KELLOGG COMMUNITY COLLEGE

FALL 2024

## RENEWABLE ENERGY

Certificate: 25 credits

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Module Subject Code and Number	Module Title	Credit	Contact Hours	Lab Fees	Tuition	Total Cost
<input type="checkbox"/> INRE C910-7201	RENEWABLE ENERGY ORIENTATION		2	0.00	0.00	0.00
<input type="checkbox"/> INEL C910-7201	ELECTRIC ELECTRONICS ORIENTATION		2	0.00	0.00	0.00
The orientations must be completed at the RMTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.						
<b>UNIT 05 ELECTRICAL SAFETY</b>						
<input type="checkbox"/> INEL 05010-7201	ELECTRICAL SAFETY	0.17	4	3.00	46.50	49.50
<b>UNIT TOTAL</b>		<b>0.17</b>	<b>4</b>	<b>3.00</b>	<b>46.50</b>	<b>49.50</b>
<b>UNIT 10 MATHEMATICS FOR ELECTRICIANS</b>						
<input type="checkbox"/> INEL 10020-7201	ELECTRICAL MATH 2	0.25	6	3.00	68.38	71.38
<input type="checkbox"/> INEL 10030-7201	ELECTRICAL MATH 3	0.25	6	3.00	68.38	71.38
<b>UNIT TOTAL</b>		<b>0.50</b>	<b>12</b>	<b>6.00</b>	<b>136.76</b>	<b>142.76</b>
<b>UNIT 15 ELECTRICAL THEORY</b>						
<input type="checkbox"/> INEL 15010-7201	ELECTRICAL THEORY	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15020-7201	STATIC ELECTRICITY	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15030-7201	CALCULATORS AND ELECTRONICS	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15040-7201	DEVICES AND SYMBOLS	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15050-7201	MULTIMETER	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15060-7201	OHM'S LAW	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15070-7201	SERIES CIRCUITS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15080-7201	PARALLEL CIRCUITS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15090-7201	COMBINATION CIRCUITS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15100-7201	MAGNETISM	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15110-7201	ALTERNATING CURRENT	0.25	6	23.00	68.38	91.38
<input type="checkbox"/> INEL 15120-7201	OSCILLOSCOPE	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15130-7201	INDUCTANCE	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INEL 15140-7201	CAPACITANCE	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INEL 15150-7201	RLC CIRCUITS	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15160-7201	CONDUCTION	0.33	8	23.00	90.26	113.26
<input type="checkbox"/> INEL 15170-7201	THEORY OVERVIEW	0.21	5	23.00	57.44	80.44
<b>UNIT TOTAL</b>		<b>5.19</b>	<b>125</b>	<b>391.00</b>	<b>1419.54</b>	<b>1810.54</b>
<b>UNIT 35 NATIONAL ELECTRICAL CODE (NEC)</b>						
<input type="checkbox"/> INEL 35010-7201	GENERAL WIRING FUNDAMENTALS	0.25	6	17.00	68.38	85.38
<input type="checkbox"/> INEL 35020-7201	WIRE RACEWAY AND BOX SIZING	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35030-7201	BRANCH CIRCUITS	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35040-7201	SERVICE FEEDER CALCULATIONS	0.25	6	17.00	68.38	85.38
<input type="checkbox"/> INEL 35050-7201	GROUNDING AND BONDING	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35060-7201	OVERCURRENT PROTECTION	0.33	8	17.00	90.26	107.26
<input type="checkbox"/> INEL 35130-7201	SPECIAL APPLICATION WIRING	0.25	6	17.00	68.38	85.38
<b>UNIT TOTAL</b>		<b>2.07</b>	<b>50</b>	<b>119.00</b>	<b>566.18</b>	<b>685.18</b>
<b>UNIT 40 POWER DISTRIBUTION SYSTEMS</b>						
<input type="checkbox"/> INEL 40010-7201	POWER GENERATION DISTRIBUTION	0.33	8	39.00	90.26	129.26
<input type="checkbox"/> INEL 40020-7201	ELECTRICAL WIRING TECHNIQUES	0.33	8	39.00	90.26	129.26
<input type="checkbox"/> INEL 40030-7201	WIRING SYSTEM INSTALLATION	0.42	10	39.00	114.87	153.87
<input type="checkbox"/> INEL 40040-7201	INTRODUCTION TO RACEWAYS	0.42	10	39.00	114.87	153.87
<input type="checkbox"/> INEL 40050-7201	BASIC CONDUIT BENDING	0.25	6	39.00	68.38	107.38
<input type="checkbox"/> INEL 40060-7201	ADVANCED RACEWAYS	0.25	6	39.00	68.38	107.38
<input type="checkbox"/> INEL 40070-7201	CONDUCTOR OVERCURRENT PROTECT	0.25	6	39.00	68.38	107.38
<input type="checkbox"/> INEL 40080-7201	CONDUIT SIZING WIRE PULLING	0.33	8	39.00	90.26	129.26
<b>UNIT TOTAL</b>		<b>2.58</b>	<b>62</b>	<b>312.00</b>	<b>705.66</b>	<b>1017.66</b>

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<b>UNIT 05 ENERGY USE</b>						
<input type="checkbox"/> INRE 05010-7201	MODERN ENERGY SOURCES	0.25	6	20.00	68.38	88.38
<input type="checkbox"/> INRE 05020-7201	PERSONAL ENERGY USE	0.67	16	25.00	183.25	208.25
<input type="checkbox"/> INRE 05030-7201	INDUSTRIAL ENERGY USE	0.50	12	20.00	136.75	156.75
<input type="checkbox"/> INRE 05040-7201	TRADITIONAL ENERGY SOURCES	0.33	8	19.00	90.26	109.26
<input type="checkbox"/> INRE 05050-7201	EXOTIC ENERGY PRODUCTION	0.33	8	19.00	90.26	109.26
<b>UNIT TOTAL</b>		<b>2.08</b>	<b>50</b>	<b>103.00</b>	<b>568.90</b>	<b>671.90</b>
<b>UNIT 10 PHOTOVOLTAIC THEORY</b>						
<input type="checkbox"/> INRE 10010-7201	INTRO TO PHOTOVOLTAIC SYSTEMS	0.50	12	38.00	136.75	174.75
<input type="checkbox"/> INRE 10020-7201	SOLAR RADIATION	0.50	12	43.00	136.75	179.75
<b>UNIT TOTAL</b>		<b>1.00</b>	<b>24</b>	<b>81.00</b>	<b>273.50</b>	<b>354.50</b>
<b>UNIT 15 PV COMPONENTS</b>						
<input type="checkbox"/> INRE 15010-7201	CELLS MODULES AND ARRAYS	0.88	21	50.00	240.68	290.68
<input type="checkbox"/> INRE 15020-7201	INVERTERS	0.25	6	20.00	68.38	88.38
<input type="checkbox"/> INRE 15030-7201	BATTERIES CHARGE CONTROLLERS	0.33	8	35.00	90.26	125.26
<input type="checkbox"/> INRE 15040-7201	BALANCE OF SYSTEM	0.25	6	18.00	68.38	86.38
<input type="checkbox"/> INRE 15050-7201	SYSTEM TYPES	0.67	16	50.00	183.25	233.25
<b>UNIT TOTAL</b>		<b>2.38</b>	<b>57</b>	<b>173.00</b>	<b>650.95</b>	<b>823.95</b>
<b>UNIT 20 PHOTOVOLTAIC INSTALLATION</b>						
<input type="checkbox"/> INRE 20010-7201	PHOTOVOLTAIC SAFETY	0.21	5	17.00	57.44	74.44
<input type="checkbox"/> INRE 20020-7201	ELECTRICAL NEC REQUIREMENTS	0.75	18	25.00	205.13	230.13
<input type="checkbox"/> INRE 20030-7201	SITE EVALUATION AND SIZING	0.67	16	48.00	183.25	231.25
<input type="checkbox"/> INRE 20040-7201	CONSTRUCT COMMISSIONING TROUBL	0.75	18	38.00	205.13	243.13
<input type="checkbox"/> INRE 20050-7201	PHOTOVOLTAIC SYSTEM PROJECT	1.00	24	55.00	273.50	328.50
<b>UNIT TOTAL</b>		<b>3.38</b>	<b>81</b>	<b>183.00</b>	<b>924.45</b>	<b>1,107.45</b>
<b>UNIT 25 WIND THEORY</b>						
<input type="checkbox"/> INRE 25010-7201	WIND SYSTEM INTRODUCTION	0.33	8	22.00	90.26	112.26
<input type="checkbox"/> INRE 25020-7201	HISTORY OF WIND	0.42	10	19.00	114.87	133.87
<input type="checkbox"/> INRE 25030-7201	METEOROLOGY AND GEOGRAPHY	0.33	8	27.00	90.26	117.26
<input type="checkbox"/> INRE 25040-7201	MECHANICS OF THE WIND	0.33	8	12.00	90.26	102.36
<b>UNIT TOTAL</b>		<b>1.41</b>	<b>34</b>	<b>80.00</b>	<b>385.65</b>	<b>465.65</b>
<b>UNIT 30 WIND COMPONENTS</b>						
<input type="checkbox"/> INRE 30010-7201	TURBINE TECHNOLOGY	0.67	16	27.00	183.25	210.25
<input type="checkbox"/> INRE 30020-7201	DC GENERATION PRINCIPLES	0.58	14	32.00	158.63	190.63
<input type="checkbox"/> INRE 30030-7201	AC GENERATION PRINCIPLES	0.42	10	23.00	114.87	137.87
<input type="checkbox"/> INRE 30040-7201	TOWERS	0.25	6	12.00	68.38	80.38
<b>UNIT TOTAL</b>		<b>1.92</b>	<b>46</b>	<b>94.00</b>	<b>525.13</b>	<b>619.13</b>
<b>UNIT 35 WIND INSTALLATION</b>						
<input type="checkbox"/> INRE 35010-7201	WIND SAFETY	0.33	8	12.00	90.26	102.26
<input type="checkbox"/> INRE 35020-7201	WIND APPLICATION	0.33	8	16.00	90.26	106.26
<input type="checkbox"/> INRE 35030-7201	BUYING A WIND SYSTEM	0.50	12	16.00	136.75	152.75
<input type="checkbox"/> INRE 35040-7201	SITING	0.58	14	32.00	158.63	190.63
<input type="checkbox"/> INRE 35050-7201	SYSTEM INSTALLATION	0.67	16	17.00	183.25	200.25
<input type="checkbox"/> INRE 35060-7201	SYSTEM OPERATION	0.33	8	17.00	90.26	107.26

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<b>UNIT TOTAL</b>		<b>2.74</b>	<b>66</b>	<b>110.00</b>	<b>749.41</b>	<b>859.41</b>
<b>TOTAL</b>		<b>25.42</b>	<b>615</b>	<b>1,655.00</b>	<b>6,952.63</b>	<b>8,607.63</b>

**FOR OFFICE USE ONLY**

Instructor Approval \_\_\_\_\_ Date \_\_\_\_\_

Total Credit \_\_\_\_\_ Total Contact \_\_\_\_\_ Total Cost \_\_\_\_\_