 **HMI111 - Introduction to Residential Wiring**

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| Week | Outcomes | Format | Hours | Topic/Content | Readings | Assignments | Assessment | Resources |
| 1-2 | 1 | Lecture | 4 | Interpret Canadian electrical code pertaining to residential installations. | Unit 1 pp. 1-7  Code sec. 0, 2 | P. 7 Q. 1-12  Questions from end of chapters | Assign. to be handed in | Residential Electrical Book and Code book. |
|  |  |  |  | Describe |  |  |  |  |
|  |  |  |  | Technical drawings, visualizing a building, building views, symbols, notations and scale. Drawings and specifications. | Unit 2 pp. 9-20 | Ques. 1-20 | Assign. to be handed in |  |
|  | 1,2 | Lab | 2 | Apply |  |  |  |  |
|  |  |  |  | Architectural, electrical and residential drawings to determine installation requirements. |  |  | Assign. to be handed in |  |
|  |  |  |  | Codes and standards, testing and units of measure. |  |  |  |  |
| 3-4 | 1,2,6 | Lecture | 4 | Identify | Units 5,6,7 (to p. 123)  Code sec. 0, 2 | Questions from end of chapters | Assign. to be handed in | Residential Electrical book and Code book. |
|  |  |  |  | Interpret the alphanumerical lines |  |  |  |  |
|  |  |  |  | Select as required; wiring, boxes, service panel size and conduit. |  |  |  |  |
|  |  |  |  | Describe |  |  |  |  |
|  |  |  |  | Overhead service and mast type, underground services, main service disconnect and grounding. |  |  |  |  |
|  |  | Lab | 2 | Explain  Bonding, ratings for fuses and circuit breakers, panels and loads. |  |  | Assign. to be handed in |  |
|  |  |  |  | Apply  Demonstrate competency with metric and imperial scale |  |  |  |  |

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| 5-6 | 2, 3, 4, 5,6,7  **1,2 (test)** | Lecture | 4 | Describe / Explain the method of estimating required wiring, boxes, service panel sizes and conduit. | Unit 7 (cont.)  Code sec. 4,12 | Questions from end of chapters | Assign. to be handed in  **Rev/test #1** (in week 6) | Residential Electrical book and Code book |
|  |  |  |  | Determine conductor sizes and types, wiring methods, wire connections, voltage drop and neutral sizing for services. |  |  |  |  |
|  |  | Lab | 2 | Apply |  |  |  |  |
|  |  |  |  | Calculate conduit fill where all conductors are the same size and insulation type. | Unit 7  Code sec. 12 | Questions from end of chapters | Assign. to be handed in |  |
| 7,8 | 1,2 | Lecture | 4 | Explain Interpret the regulations of CEC regarding wiring methods for installations operating at 750 volts or less. | Unit 7 (p. 123 on), 11, 12  Code sec. 12 | Questions from end of chapters | Assign. to be handed in | Residential Electrical book and Code book |
|  | 2,3,4,5, 6, 7 | Lab | 2 | Calculate conduit fill where the conductors have different sizes. |  |  | Assign. to be handed in |  |
| 9 | 1,2 | Lecture | 2 | Wire sizes and loads. |  |  |  |  |
|  | 2,3,4,5, 6, 7 | Lab | 1 | Calculate the maximum number of conductors sized # 14 to # 6 that is permitted in a box. |  |  | Assign. to be handed in |  |
| 10 | 1,2 | Lecture | 3 | **Review / test # 2** |  |  | **Rev/test #2** (in week 10) | Residential Electrical book and CEC. |

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| 11,12, | 1,2 | Lecture | 4 | Identify | Units 14, 15, 16 | Questions from end of chapters | Assign. to be handed in | Residential Electrical book and CEC. |
|  |  |  |  | Assess electrical outlets and fixtures needed in a single family dwelling. | Code sec. 12, 26 |  |  |  |
|  |  |  |  | Special purpose outlets for ranges, counter mounted cooking units, wall mounted ovens, disposals and dishwashers; including laundry appliances and attic. | Code sec. 26 |  |  |  |
|  |  |  |  | Describe |  |  |  |  |
|  |  |  |  | Determine electrical requirements for oil, gas, electric heating and air conditioning. | Units 17, 18  Code sec. 62 | Questions from end of chapters | Assign. to be handed in |  |
|  |  |  |  | Uses and installations of electrical conduit. |  |  |  |  |
|  |  |  |  | Requirements for service grounding and flexible metal conduit. |  |  |  |  |
|  | 2,3,4,5,6,7 | Lab | 2 | Apply |  |  | Assign. to be handed in |  |
|  |  |  |  | Voltage drop calculations. |  |  |  |  |
|  |  |  |  | Calculations using CEC Table D-3. |  |  |  |  |

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| 13,14 | 1,2 | Lecture | 4 | Identify |  |  |  |  |
|  |  |  |  | High temperature insulated conductors, wire device, breaker or switch. | Units 14-18 (also 11, 12)  Code sect. 12, 26 | Questions from end of chapters | Assign. to be handed in | Residential Electrical book and Code book |
|  |  |  |  | Three - wire circuits |  |  |  |  |
|  |  |  |  | Describe (Wiring methods) |  |  |  |  |
|  |  |  |  | Assess branch circuits for the bedrooms, study hall, living room, front entrance, bathrooms and kitchens. | Unit 11  Pg. 195-211 |  |  |  |
|  |  |  |  | Identify | Code sec. 0, 2, 4, 12, 26 |  |  |  |
|  |  |  |  | Grounded and ungrounded conductors (color coding). |  |  |  |  |
|  |  |  |  | Toggle switches. |  |  |  |  |
|  |  |  |  | Describe |  |  |  |  |
|  |  |  |  | Operation that each type of toggle switch performs. |  |  |  |  |
|  |  |  |  | Explain |  |  |  |  |
|  |  |  |  | Various ways to bond wiring. |  |  |  |  |
|  |  |  |  | How to design circuits. |  |  |  |  |
|  | 2,3,4,5,6,7, | Lab | 2 | Apply |  |  | Assign. to be handed in |  |
|  |  |  |  | Correct wiring connections the CEC requires. | Units 14-18 |  | Assign. to be handed in |  |
| 15 | 1,2 | Lecture | 3 | **Review and Test # 3** |  |  | **Rev / Test # 3**  (in week 15) |  |
| 16 |  |  |  | Review. |  |  |  |  |