

# MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

## COURSE OUTLINE

**DEPT. ELUT**

**COURSE NUMBER: 2100**

**NUMBER OF CREDITS: 3**

**Lecture: 2 Lab: 1 OJT 0**

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| <b>Course Title:</b> |
| Electrical Metering  |

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| <b>Catalog Description:</b>   |
| Electrical Metering covers single-phase metering principles, meter construction, component parts and installation and testing of single-phase electric watt-hour meters. This course also includes the use of a meter test bench, test standards and an electric counter. |

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| <b>Prerequisites or Necessary Entry Skills/Knowledge:</b> |
| None  |

### FULFILLS MN TRANSFER CURRICULUM AREA(S)

- ☐ Goal 1: Communication: By meeting the following competencies:
- ☐ Goal 2: Critical Thinking: By meeting the following competencies:
- ☐ Goal 3: Natural Sciences: By meeting the following competencies:
- ☐ Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- ☐ Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- ☐ Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- ☐ Goal 7: Human Diversity: By meeting the following competencies:
- ☐ Goal 8: Global Perspective: By meeting the following competencies:
- ☐ Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- ☐ Goal 10: People and the Environment: By meeting the following competencies:

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| <b>Topics to be Covered</b>   |
| Simple rules of safety and hazards involved with testing and installing electrical meters |
| Single-phase watt-hour meters, both self-contained and instrument rated meters            |
| Instrument transformer hazards  |

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| <b>Student Learning Outcomes</b>   |
| List the advantages and limitations of using an electro magnet moving coil meter ac voltage, current, and watts.                 |
| Describe the construction and operation of single-phase watt-hour meters (both self-contained and instrument transformer rated). |
| Define the connection and formulas to be used to test the accuracy of a single-phase watt-hour meter.                            |

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| Test, calibrate, and describe the test used in testing single-phase meters.                      |
| Describe the construction and use the meter test equipment.                                      |
| Calculate the metered power of a load connected to a watt-hour meter by the use of the formulas. |
| Describe and identify the equipment used in metering with instrument transformers.               |
| Wiring single phase and 3 phase meters   |

**Is this course part of a transfer pathway:** Yes ☐ No ☒

Revised Date: October, 2020