

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. ELUT

COURSE NUMBER: 2126

NUMBER OF CREDITS: 2

Lecture: 1 Lab: 1 OJT 1

Course Title:
Regulators and Capacitors

Catalog Description:
Regulators and Capacitors covers the methods used in producing a reliable power source by controlling voltage loss and power factor through the use of capacitors and/or regulators.

Prerequisites or Necessary Entry Skills/Knowledge:
None

FULFILLS MN TRANSFER CURRICULUM AREA(S) (*Leave blank if not applicable*)

- ☐ 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:

Topics to be Covered
Power source production and reliability
Voltage regulation
Capacitors
Regulators
Tap changing transformers

Student Learning Outcomes

Explain the operation of a single-phase induction voltage regulator and a three-phase induction voltage regulator including how these regulators maintain the delivery of a constant line voltage to a distribution point

Identify the major components for the control of voltage regulation and describe their operation in regulating a constant voltage.

Describe the procedure and safety required in installing and removing regulators and capacitors from service.

Describe the functions of a tap changing transformer and identify the difference between load tap changer and a no-load tap changer.

Describe the functions of a tap changing transformer and identify the difference between load tap changer and a no-load tap changer.

Describe the difference and reasons for connecting capacitors in parallel or series.

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

***If yes, please list the competencies below**

Revised Date: 1/1/2022