

Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

Updated 9/23/14

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: _____

2. Date submitted: _____

3. Date approved: 01/21/04 Date revised 09/23/14

4. Department/discipline: Electric Utility Technicians

5. Department(s) endorsement(s): _____

(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Power Electronics & Communications Equipment

Abbreviated course title (25 characters or less): _____

7. Course Designator: EUT 8. Course Level: 1040 9. 2XXX

10. Number of Credits: Lecture 3 Lab 1

11. Control Number (on site) 30 Control Number (online) _____

12. Catalog/Course description:

In this course, the student will be introduced to power electronics and communications equipment from the perspective used in the electric power industry. In this course, power electronics and variable speed drive equipment and other topics will be introduced through hands-on learning activities. (Prerequisite: EUT 1020 Basic Electricity or approval of instructor).

13. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s): EUT 1020 Basic Electricity or approval of instructor

Co-requisite:

14. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

Texts to be determined yearly on the basis of content and availability and will be listed on the syllabus.

Study guides and lab manuals will be supplied to the student. Heathkit lab systems 6400 series.

15. **Course Content** (Provide an outline of major topics covered in course)

- I PN junction fundamentals
- II Transistors
- III Transistor circuits
- IV Amplifiers
- V Op Amps
- VI Rectifiers

- VII Pulse Control Modulation
- VIII Thyristers
- IX Variable Speed Drives
 - Drive Types, makeup
 - AC Drives
- X Drive Programming

16. Learning Goals, Outcomes, and Assessment

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one’s own traditions and culture, knowledge of others’ traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Upon completion of this course the student will be able to:

- 1. Identify transistor type and biasing. (A, C)
- 2. Connect and calculate Op Amp output. (C)
- 3. Demonstrate knowledge of thyristor types and usages (A, C)
- 4. Properly connect a three phase variable speed drive. (B, C)
- 5. Program operating parameters into a variable speed drive (A, C)

17. Minnesota Transfer Curriculum (MnTC): If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See www.mntransfer.org

Goal Area(s): _____
 Goal and Outcomes: