

**MESABI RANGE COMMUNITY & TECHNICAL COLLEGE – VIRGINIA/EVELETH
COURSE OUTLINE**

Course Title: Intro to DC/AC Electronics
Quarter Course Prefix and Number:
Semester Course Prefix and Number: EIAT 1253

Approval Date:
Revision Date: 2/22/06

Number of Credits: 4 **Number of Lecture Credits:** 1 **Number of Lab Credits:** 3
Semester(s) Offered: **Number of Studio/Discussion Credits:**
Class Size: 24
Negotiated by AASC on
(Date)__

Course Purpose Code:

- 0 – Developmental Courses
- 1 – Non-Transferable General Studies
- 2 – Technical course related to career programs
- 3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
- 4 - Other college course not considered a part of general education (MNTC) e.g. computer science, health, physical education
- 5 – Course which is intended to fulfill Minnesota Transfer Curriculum (MNTC) requirements.
- 9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:

This offering is designed as a foundational course for those entering electrical maintenance/engineering related fields. Basic DC/AC theory is studied with a focus on electrical quantities, circuit components, schematic symbols, measurement, and the mathematical and practical analysis of series, parallel, and series/parallel circuits from a troubleshooting perspective. Lab safety and the safe and proper use of tools and test equipment is emphasized.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): None
Reading Prerequisite: Minimum score on basic skills test
Composition Prerequisite:
Mathematics Prerequisite: Minimum score on basic skills test

Career Programs and Transfer Majors Accessing this Course:

Electrical and Industrial Automation Technology

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:

- | | |
|--|--|
| 0. <input checked="" type="checkbox"/> None | 6. <input type="checkbox"/> The Humanities and Fine Arts |
| 1. <input type="checkbox"/> Communications | 7. <input type="checkbox"/> Human Diversity |
| 2. <input type="checkbox"/> Critical Thinking | 8. <input type="checkbox"/> Global Perspectives |
| 3. <input type="checkbox"/> Natural Sciences | 9. <input type="checkbox"/> Ethical and Civic Responsibility |
| 4. <input type="checkbox"/> Mathematical/Logical Reasoning | 10. <input type="checkbox"/> People and the Environment |
| 5. <input type="checkbox"/> History and the Social and Behavioral Sciences | |

Learning outcomes, including any relevant competencies listed in the Minnesota Transfer Curriculum:

Following the completion of this course the student will be able to demonstrate the ability to:

- 1.) Differentiate between DC and AC voltage sources.
- 2.) Construct basic DC and AC circuits.
- 3.) Analyze and troubleshoot basic DC and AC circuits.
- 4.) Properly use test equipment to measure voltage, current and resistance.
- 5.) Read a schematic.
- 6.) Identify basic electronic and electrical components and their schematic symbols.
- 7.) Observe proper safety procedures.
- 8.) Work cooperatively.
- 9.) Apply critical thinking skills.

Possible student assessment methods:

Lab assignments, worksheets, papers, and tests.

Use of instructional technology (includes software, interactive video and other instructional technologies):

Power Point Software, videos, software based lab simulators.

A one-paragraph summary or outline of the major course content:

See "Learning Outcomes" above.

Additional special information (special fees, directives on hazardous materials, etc.)

Laptop Computer Lease

Approvals:

Body	Representative Signatures	Date
Curriculum Committee		
Faculty Association		
Academic Affairs Standards Committee		
Chief Academic Officer		

Distribution: Original – Administrative Office

Copies: Curriculum Committee Chair, Learning Center, Library, Originating Faculty Member, Records, Student Services, Scheduler, Transfer Specialist

Revised February 10, 2004