

# MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

## Course Outline

Course Title: **Mobile Equipment Electronics I**  
Semester Course Prefix and Number: **MEST 1258**  
Old Quarter Course Prefix and Number:

Submitted By: **Andy White**  
Approval Date: **April 2009**  
Revision Date: **March 31, 2009**

Number of Credits: **4**  
Semester(s) Offered: **Fall**  
Class Size: **24**

Number of Lecture Credits: **2**  
Number of Lab Credits: **2**      Number of Lab Hours: **4**  
Number of Studio/Demonstration/Internship Credits: **0**

Negotiated by AASC on:  
(date) **November 2008**

### Course Purpose Code:

- 0** – Developmental Courses
- 1** – Non-transferable, General Education
- 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 the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
- 9** – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

### Catalog Description:

The purpose of this course is to introduce the student to electronics and electronic controls found on various mobile equipment systems. The main course content will provide an understanding of inputs, outputs, and basic computer controls. The student will learn to test and repair these systems safely and properly.

### Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): **MEST 1250 Basic Electrical Systems**

Reading Prerequisite:

Composition Prerequisite:

Mathematics Prerequisite:

### Career Programs and Transfer Majors Accessing this Course:

Mobile Equipment Service Technician

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

(Notes: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer's approval are required.)

- |  |  |
|--|--|
| 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)

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

- 1.) Follow proper electrical safety procedures.
- 2.) Interpret electrical schematics.
- 3.) Identify damaged electronic terminals and connectors.
- 4.) Perform repairs to electronic terminals and connectors.
- 5.) Perform related math calculations.
- 6.) Explain the function of electronic controllers.
- 7.) Explain the function of inputs and outputs.
- 8.) Identify various electronic components.
- 9.) Explain on board diagnostic systems.
- 10.) Explain the difference between electricity and electronics.
- 11.) Demonstrate proper use of DMMS, Carbon Pile Testers, and other related testing tools.
- 12.) Perform tasks cooperatively

**Student Assessment Methods:**

Homework, Lab Assignments, Hands-on Tests, Written Tests

**Use of Instructional Technology:** (includes software, interactive video and other instructional technologies):

PowerPoint Presentations, Video Presentations, Equipment Specific Diagnostic Software, Digital Multi-Meters, Personal Computers, Internet.

**Outline or Statement of Major Course Content:**

See Course Description above

**Additional Special Information:** (special fees, directives on hazardous materials, etc.)

None

**Transfer Information:** (Please list colleges/majors that accept this course in transfer.)

**Approvals:**

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

**Distribution:** Original – Administrative Office

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

**Revised:** October 2006