

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Braking Systems I
Semester Course Prefix and Number: MEST 1261
Old Quarter Course Prefix and Number:

Submitted By: Frank Malone
Approval Date:
Revision Date: Mar. 11

Number of Credits: 4
Semester(s) Offered: Spring 2010
Class Size: 24
Negotiated by AASC on: (date) November 2008
Number of Lecture Credits: 1
Number of Lab Credits: 3
Number of Lab Hours: 6
Number of Studio/Demonstration/Internship Credits: 0

Course Purpose Code:

- 0 - Developmental Courses
1 - Non-transferable, General Education
X 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 the basic braking systems theory pertaining to the braking systems found on mobile equipment. The main course content will include hydraulic, air, and wet friction style of braking systems. The student will learn to safely and properly test, diagnose, and repair these systems.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): MEST 1246 M.E. Safety and Rigging
MEST 1245 M.E. Fundamentals

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. X None
1. Communications
2. Critical Thinking
3. Natural Sciences
4. Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences
6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
9. Ethical and Civic Responsibility
10. People and the Environment

**Learning Outcomes:** (including any relevant competencies listed in the Minnesota Transfer Curriculum)

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

- 1.) Exhibit professionalism.
- 2.) Demonstrate proper safety procedures.
- 3.) Describe the components of a hydraulic brakes system.
- 4.) Demonstrate proper inspection, diagnosis, and repair procedures for hydraulic braking systems.
- 5.) Understand theories and principals pertaining to hydraulic braking systems
- 6.) Perform testing, troubleshooting, and repair on power and manual braking systems.
- 7.) Compare common components between hydraulic and air braking systems.
- 8.) Understand the differences between hydraulic and air braking systems.
- 9.) Explain how a wet brake system works.
- 10.) Perform tasks in a cooperatively.
- 11.) Proper use of hand and power tools.
- 12.) Utilize electronic and printed service repair information.

**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:** March 2011