

MARTIN COMMUNITY COLLEGE  
COURSE SYLLABUS  
Semester/Year: Spring 2011

**COURSE NUMBER:** MNT 240 (1)                      **INSTRUCTOR:** Randall Smith

**COURSE TITLE:** Industrial Equipment Troubleshoot    **OFFICE NO:** N/A

**CREDIT HOURS:** 2                                      **OFFICE/VIRTUAL HRS:** Email instructor

**CONTACT HRS/WK:** 4 (1 class, 3 lab)

**PHONE NO:** Contact Dr. Broughton    Dean of Student Services 252-792-0246

**PREREQUISITES:** None                                      **FAX:** N/A

**COREQUISITES:** None                                      **E-MAIL:** [rsmith@mcc.martincc.edu](mailto:rsmith@mcc.martincc.edu)

**COURSE DESCRIPTION:**

This course covers the various service procedures, tools, instruments, and equipment necessary to analyze and repair typical industrial equipment. Emphasis is placed on electro-mechanical and fluid power equipment troubleshooting, calibration, and repair, including common techniques and procedures. Upon completion, students should be able to troubleshoot and repair industrial equipment.

**PROGRAM LEARNING OUTCOMES:**

1. Utilize tools and equipment to service and maintain mechanical systems, plumbing systems, hydraulic and pneumatic systems, and electrical and electronic systems.
2. Create, interpret, and modify industrial blueprints and schematics.
3. Perform preventive maintenance and troubleshoot a variety of industrial systems.
4. Perform various welding and cutting processes used in current industry.

**COURSE LEARNING OUTCOMES:**

1. Explain safety regulations and procedures pertaining to working near, or on industrial equipment.
2. Demonstrate skill and competence with various types of testing equipment that are used to analyze machine functions and conditions.
3. Find and use machine logs, work orders, blueprints, schematics, and/or other information resources to effectively diagnose, repair, or maintain equipment.

## **REQUIRED TEXTBOOKS:**

Green, Denis, Gosse, Jonathan F., (2010). Industrial Maintenance (3<sup>rd</sup> ed.). Orland Park, Illinois: American Technical Publishers, Inc. ISBN 978-0-8269-3641-7

Green, Denis, (2010). Industrial Maintenance Workbook (3<sup>rd</sup> ed.). Orland Park, Illinois: American Technical Publishers, Inc. ISBN 978-0-8269-3642-4

## **SUPPLEMENTAL RESOURCES: N/A**

**LEARNING/TEACHING METHODS:** Learning Methods may include lecture, class discussion, outside reading assignments, workbook exercises, hands on activities, classroom demonstrations, questions, quizzes, learner presentation, audio-visual aids, or other methods.

## **ASSESSMENTS/METHODS OF EVALUATION:**

1. QEP Outside Reading Assignment = 10% **Saving Energy** (In Homes or Buildings) Please indicate the source (text and author), show estimated savings (or give an example). State or explain why you believe the author's idea has merit. Use 2 to 3 pages, do not rewrite or copy a text or article (especially word for word) or you will get no credit. The point is to get you to assess, evaluate, or think about what the author is proposing and to draw your own conclusions as to whether you agree or disagree with the author.

2. Classroom Assignments = 20%

3. Homework = 30%

4. Tests = 25%

5. Final Exam = 15%

**GRADING POLICY:** Grading Scale A (90 to 100)  
B (80 to 89)  
C (70 to 79)  
D (60 to 69)  
F (59 and below)

## **COURSE OUTLINE:**

**TIMELINE FOR COVERING TOPICS**

WEEK 1: Maintenance Principles

WEEK 2: Workplace Safety

WEEK 3: Service and Repair Principles

WEEK 4: Electrical Systems

WEEK 5: Electrical Systems

WEEK 6: Electronics and PLC's

WEEK 7: Refrigeration Systems

WEEK 8: Refrigeration Systems

WEEK 9: Boiler Systems

WEEK 10: Boiler Systems

WEEK 11: HVAC Systems

WEEK 12: Mechanical Systems

WEEK 13: Fluid Power Systems

WEEK 14: Fluid Power Systems

WEEK 15: Troubleshooting

WEEK 16: Review

**STUDENT CONDUCT POLICY:** Students will receive a grade of "WF" as an administrative withdrawal for inappropriate behavior.

**STUDENT ATTENDANCE POLICY:**

Martin Community College recognizes that academic success is tied to regular attendance and completion of assigned work and tasks in a timely manner. Students are expected to attend a minimum of 80 percent of the total hours of a course, which includes classes, labs, and shops.

Students must be present in at least one class during the first ten percent (10%) of a course in order to be considered enrolled in the class. If a student has not attended at least one class by the ten percent census date, the instructor will administratively withdraw the student.

Students who miss more than six contiguous contact hours or fail to attend the required percentage of total hours without a justifiable absence and verifiable contact with the instructor may be administratively withdrawn from the class by the instructor and given a grade of "WF." The "WF" will be equivalent to an "F" when calculated into the student's GPA. The course syllabus will indicate what the instructor considers a justifiable absence and will define "verifiable contact." Students may remove a "WF" by submitting appropriate paperwork for an official withdrawal by the last day to officially withdraw without receiving an "F." The last day to officially withdraw without receiving an "F" is published in the academic calendar for each academic year. The official withdrawal date for mini sessions, block courses, or other non-traditional schedules are available from the registrar and will be included on the course syllabus.

**Note:** For MNT-240 Spring 2011, arriving more than 15 minutes late, or leaving before class is dismissed may be counted as an absence. Three infractions count as an absence.

Students will be counted absent from the date they register for each course.

Note: Under DVA regulations, the enrollment of veterans or dependents will be terminated or adjusted if they are administratively withdrawn.

**Note:** For MNT-240 Spring 2011, "justifiable absence" is death or serious illness of the student or immediate family member where immediate emergency attention is necessary. A "verifiable contact" is an immediate family member from the same household, medical office, or medical personnel. Make-up work is the responsibility of the student and should be completed and turned in with the next assignment following the return of the student.

**REQUEST FOR EXCUSED ABSENCES FOR RELIGIOUS OBSERVANCES\***

**\* In compliance with G. S. 115-D-5, MCC policy permits a student to be excused, with the opportunity to make up any test or other missed work, a minimum of two excused absences per academic year for religious observances required by the student's faith. The policy limits the excused absences to a maximum of two days per academic year.**

Students who wish to be excused for a Religious Observance required by their faith must complete and submit a request form to the instructor(s) prior to the census date of each class.

The Request for Excused Absences for Religious Observances form can be picked up from Student Services. This does not supersede the college-wide attendance policy as outlined in the college catalog or syllabus, with the exception of a reasonable accommodation for the make-up of missed course work

**COURSE POLICIES:** Classroom conduct and safety policy.

1. No horse play.
2. Safety glasses will be worn at all times while in project installation area.
3. Safety glasses or approved goggles will be worn at all times when using any power tools such as drills, grinders, porta-band saws, threaders, etc.
4. Safety glasses or approved goggles will be used when a hammer, chisel, or any other device which may cause injury by catapulting flying debris.
5. Always use a ladder when climbing (never a chair or stool).
6. No sleeping or laying head down on desk. If you are too tired to stay awake in class you will have to leave the classroom and receive an absence for that period.
7. Do not sit on, or put your feet on the desk tops.
8. Students are to remain silent while the instructor is speaking, or while another student is answering a question for the instructor.
9. Do not throw any object or objects in the classroom, or while on campus.
10. Keep your work area clean and put objects back in the store room when finished.
11. You are expected to bring your tools, books, paper, and calculator to class each day.
12. No eating, drinking, or smoking in class.
13. Students are expected to report promptly and properly to class at the appropriate time and on the day (or days) assigned.
14. Regular attendance is required in accordance with MCC Policy.
15. Students are expected to maintain a reasonable and decent standard of language, behavior, dress, and cleanliness that is appropriate for associating and being recognized as a serious student or professional.
16. Refer to MCC Career Catalog's rules and policies or to Department Chair for further questions or guidance.

If you cannot reach your instructor, you may contact Dr. Phyllis Broughton, Dean of Academic Affairs and Student Services at (252)789-0246 by phone, [pbroughton@martincc.edu](mailto:pbroughton@martincc.edu) by email, or in person at her office in Building 2, Room 33.

**To access the Martin Community College Career Catalog for policies and curriculum requirements, please go online to [www.martincc.edu](http://www.martincc.edu).**

**Disability Statement:**

If you have a need for a disability-related accommodation, please notify the Student Services counselor at (252)789-0293.