PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

PREVENTIVE MAINTENANCE & SCHEDULING W/LAB
MET 2050

Lecture/Lab Hours: 4 **Credit Hours: 3**

Date Revised: Spring 2017

Catalog Course Description

An introductory course in scheduled and monitored preventive maintenance techniques. Topics include types of maintenance, inspection and inspection intervals, computerized maintenance management systems (CMMS), and determining craft skills, parts, and scheduling requirements for PM tasks. Lab work will consist of development of PM work flow diagrams, task sheets and inspection guides for mechanical drives, fluid power systems, and electrical/electronics inspections.

Prerequisites

MET 2030

Co-requisites

None

Textbooks and Other Supplies

Preventive Maintenance, Terry Wireman, 2008, Industrial Press, Inc.: New York, ISBN: 978-083113300-9

Week/Topic Basis

Week	Topic
1-2	Course Introduction Types of Maintenance
3	Inspection and Inspection Intervals
4-5	Preventative Maintenance (PM) Scheduling Computerized Maintenance Management Systems (CMMS)
6-7	Development of PM Work Flow Diagrams and Task Sheets
8-9	Determining Craft Skills, Parts, and PM Scheduling Requirements
10-13	Development of Inspection Guides for:

	Mechanical systems Fluid power systems Electrical/electronic inspections
14	Project Presentations
15	Project Presentations, Project Critique, Student Course Critique

Engineering Technology General Outcomes (Educational objectives)

I. Apply basic engineering theories and concepts creatively to analyze and solve technical problems.
II. Utilize with a high degree of knowledge and skill equipment, instruments, software, and technical reference materials currently used in industry.
III. Communicate effectively using developed writing, speaking, and graphics skills.
IV. Assimilate and practice the concepts and principles of working in a team environment.
V. Obtain employment within the discipline or matriculate to a four year program in engineering or industrial technology.

Engineering Technology Concentration Competencies

NOTE: At the program level all 6 competencies apply to roman numerals I – V of the Engineering Technology General Outcomes (Educational objectives) listed above.

Students will

A. Apply the knowledge, techniques, skills, and modern tools for the concentration of study to specifically defined engineering technology activities.
B. Demonstrate the knowledge of mathematics, science, engineering and technology to engineering technology problems using developed practical knowledge.
C. Conduct and report the results of standard tests and measurements, and conduct, analyze and interpret experiment or project results.
D. Function effectively as a member of a technical team.
E. Identify, analyze and solve specifically defined engineering technology-based problems.
F. Employ written, oral and visual communication in a technical environment.

Course Goals

NOTE: Capital letters after course goals reference goals of the Engineering Technology Program.

The course will

1. Guide students to identify different types of maintenance procedures. (A,B,C,E,F)
2. Guide students to define and explain equipment-based inspection intervals. (A,B,C,E,F)
3. Enhance effectiveness in preparing an outline of a basic PM schedule. (A,B,C,E,F)

4. Expand student understanding of developing a PM Work Flow Diagram and Task Sheets. (A,B,C,E,F)
5. Guide students to identify and explain PM scheduling requirements. (A,B,C,E,F)
6. Enhance effectiveness to analyze and develop equipment inspection guides. (A,B,C,E,F)
7. Enhance effectiveness in preparing a report and presenting a basic PM plan.(A,B,C,E,F)

Expected Student Learning Outcomes

NOTE: Numbers after Expected Student Learning Outcomes reference the course goals listed above.

The student will

a. Identify different types of maintenance procedures. (1)
b. Define and explain daily, weekly, monthly, semi-annual, and annual inspection intervals. (2)
c. Outline a basic PM schedule using MS Project software. (3)
d. Identify and utilize Computerized Maintenance Management Systems (CMMS) components. (3)
e. Develop PM workflow diagram using MS PowerPoint. (4)
f. Develop Task Analysis sheets using MS Word "Table" functions. (4)
g. Determining craft skills and knowledge sets. (5)
h. Determine parts inventories and procurement requirements. (5)
i. Develop inspection guides for mechanical systems. (6)
j. Develop inspection guides for fluid power systems. (6)
k. Develop inspection guides for electrical/electronics inspections. (6)
l. Prepare a comprehensive technical report based on individual and collaborative effort. (7)
m. Prepare an oral presentation using Microsoft PowerPoint through individual and collaborative effort. (7)
n. Deliver oral presentation using proper speech techniques. (7)
o. Utilize computer based word-processing, spreadsheet, and discipline related software. (7)
p. Develop, analyze, edit, and complete a project in a teaming environment. (7)
q. Demonstrate ability to function as an active and effective team member. (7).

Evaluation

Total evaluation will be based on the following point distribution.

Testing Procedures

Unit Exams **30 points**

There will be 4-6 unit exams administered during the course.

Laboratory Experiences

Individual Projects **30 points**
Outline, Flow Diagrams, Task Sheets

Team Projects **40 points**
Presentation, Report

Field Work

N/A

Other Evaluation Methods

N/A

Grading Scale

Final grade for this course will be based on the following alphabetical/numerical scale.

A	93-100
B+	88-92
B	83-87
C+	79-82
C	74-78
D	65-73
F	Below 65

Policies

Attendance Policy

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

Academic Dishonesty

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.

- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. Disability Services (http://www.pstcc.edu/sswd/) may be contacted via Disability Services email or by visiting Alexander 130.

Other Policies

Safety and Equipment Abuse

Repeated safety violations will result in a reduction of final grade, at the instructor's discretion. Flagrant violations which result in equipment damage or personal injury could result in automatic failure of the course