

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

MAINTENANCE PRINTREADING APPLICATIONS
MET 1060

Class Hours: 2.0

Credit Hours: 3.0

Laboratory Hours: 3.0

Revised: Fall 06

Catalog Course Description:

Introduction to printreading and mathematical applications in the maintenance field. The purpose of the course is to introduce applied mathematics and specialized blueprint reading skills needed for maintenance workers and operations.

Entry Level Standards:

None

Prerequisites:

A basic understanding of arithmetic.

Textbook(s) and Other Course Materials:

Textbook: *Mathematics for Machine Technology*: Smith, Delmar Publishers, Latest Edition.

Blueprint Reading for Industry: Brown, Goodheart-Willcox Company, Latest Edition.

References: *Blueprint Reading For The Machine Trades*: Schultz, Prentice-Hall, Latest Edition.

Machine Trades Blueprint Reading: Yearling, Prentice-Hall, Latest Edition.

I. Week/Unit/Topic Basis:

Week	Topic
1-3	Applied Mathematics
4-6	Basic Blueprint Reading
7-9	Maintenance Math Applications
10-12	Maintenance Printreading & Applications
13	Schematics And Specialized Prints
14	Printreading Applications Project
15	Final Examination

II. MET Program Objectives & Outcomes:

Objectives:

- I. Apply basic engineering theories and concepts.
- II. Apply basic engineering theories and concepts.
- III. Identify and solve work related problems with minimum assistance.
- IV. Operate equipment and instruments with a high degree of skill.
- V. Communicate effectively, including verbal, writing, and graphical skills.
- VI. Apply the principles of good work ethics.
- VII. Obtain gainful employment in the MET discipline or matriculate to a 4-year program in engineering technology.

Outcomes:

- A. apply the knowledge of mathematics, science, and engineering technology. (I, II, IV, VI)
- B. use the techniques and modern engineering tools needed for engineering technology practices. (I – IV, VI)
- C. identify, formulate, and solve engineering technology-based problems. (I, II, VI)
- D. design and conduct experiments, as well as analyze and interpret collected data. (I– IV, VI)
- E. create or fabricate a system, subsystem, component, or process to meet specified needs. (I – IV, VI)
- F. read and extract information from manuals, journals, and other discipline related literature. (I –IV, VI)
- G. communicate effectively, including verbal, writing, and graphical skills. (IV, V, VI)
- H. function and contribute positively in team situations. (II, IV- VI)
- I. comprehend social, professional, and ethical responsibilities, including development of a respect for diversity and other contemporary issues.(II, V, VI)
- J. realize the impact of engineering technology solutions in a global and societal context. (V, VI)
- K. realize the importance of a commitment to quality, timeliness, and continuous improvement. (V, VI)
- L. recognize the importance of life-long learning.(I – VI)

III. Course Objectives*:

- A. Apply mathematical concepts of algebra and trigonometry to industrial production and manufacturing requirements. (A)

- B. Explain blueprint reading principles as applied to the production, use, and interpretation of a variety of common drawing types. (A, B)
- C. Recognize, identify, and interpret the various components of maintenance prints, documents, and schematics. (A, B, F)

*Letters after course objectives reference MET Program Outcomes (as required by ABET).

IV. Instructional Processes*:

Students will:

1. Actively listen to class lectures and participate in class discussions that develop and reinforce an understanding of the theories, concepts, principles, and applications of trigonometry and algebra required in an industrial environment.
Communication Outcome, Mathematics Outcome, Technological Literacy Outcome, Active Learning Strategies
2. Actively listen to class lectures and participate in class discussions that develop and reinforce an understanding of the theories, concepts, principles, and applications of part and system drawings required in an industrial environment.
Communication Outcome, Mathematics Outcome, Technological Literacy Outcome, Active Learning Strategies
3. Read, interpret, explain, evaluate, and analyze hydraulic and pneumatic diagrams by replicating circuits on hydraulic and pneumatic test stands to increase problem solving skills.
Communication Outcome, Mathematics Outcome, Technological Literacy Outcome, Active Learning Strategies

*Strategies and outcomes listed after instructional processes reference TBR's goals for strengthening general education knowledge and skills, connecting course work to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

V. Expectations for Student Performance*:

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

1. Convert, and apply the concepts of English and Metric units. A
2. Evaluate and solve basic algebraic equations. A
3. Evaluate and solve problems using plane geometry and trigonometric functions. A
4. Define, explain, and associate the terminology used in blueprint reading. B
5. Identify and interpret the symbols used in blueprint reading. B
6. Interpret various views and types of drawings. B
7. Identify supplementary information contained on drawings. B
8. Identify and interpret machining specifications. B
9. Locate and extract needed information from technical manuals. C

10. Associate and apply the basic principles of applied mathematics and blueprint reading to maintenance prints and documents. C
11. Use prints and schematics to locate maintenance problem areas. C

*Letters after performance expectations reference the course objectives listed above.

VI. Evaluation:

A. Testing Procedures:

Evaluation of both classroom and laboratory work is required in this course. Total evaluation will be based on the following point distribution.

Quizzes (25 Points)

Approximately 6-10 quizzes will be administered during the course. They will include discussion questions, short answer questions, true/false questions, and problem solving.

Exams

Exam 1: Applied Mathematics (15 Points)
Exam 2: Basic Blueprint Reading (10 Points)
Exam 3: Maintenance Prints And Schematics (10 Points)
Exam 4: Maintenance Printreading Project (10 Points)

B. Laboratory Expectations:

Laboratory (20 Points)

Applied Mathematics & Basic Blueprint Reading: Problem-solving sessions which include problems from the text and reference material.

Maintenance Blueprints: Problem-solving sessions which include the use of prints and schematics to locate and solve problems.

C. Field Work:

N/A

D. Other Evaluation Methods:

Participation (10 Points)

Based on instructor observation during the course, each student will be evaluated on participation activities. Evaluation parameters to include active participation in team discussions, being prepared, efficient use of lab time, striving to achieve more than minimum requirements, and regular attendance.

E. Grading Scale:

A 93-100
B+ 88-92
B 83-87

C+ 79-82
C 74-78
D 65-73
F Below 65

VII. Policies:

A. Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course (Pellissippi State Catalog).

B. Academic Dishonesty:

Refer to the Pellissippi State Catalog & Handbook.

C. Accommodations for disabilities:

If you need accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please inform the instructor immediately. Please see the instructor privately after class or in his/her office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127 or 131 or by phone: 694-6751(Voice/TTY) or 539-7153.

D. Other Policies:

Make-Up Quizzes: As a general rule, no make-up quizzes will be administered during the course.

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 will result in automatic failure of the course.

Your instructor is available during posted office hours or by appointment.