

**PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS**

**MAINTENANCE PRINTREADING APPLICATIONS W/LAB
MET 1060**

Lecture/Lab Hours: 4

Credit Hours: 3

Date Revised: Spring 2017

Catalog Course Description

Introduction to printreading in the maintenance field. The purpose of the course is to introduce specialized print reading skills needed for maintenance workers and manufacturing operations.

Prerequisites

None

Co-requisites

None

Textbooks and Other Supplies

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

Reading Technical Diagrams: Basic Foundation Series 712, 2009. Schoolcraft Publishing, Buffalo Grove, IL. (A division of Telemedia, Inc.)

Week/Unit/Topic Basis

Week	Topic
1-2	Introduction, Blueprint Reading Basics
3-4	Fundamentals of Shape Description
5-6	Fundamentals of Size Description and Annotations
7-8	Industrial Drawing Types, Specialized Parts and Prints
9	Introduction to Technical Diagrams, Symbols on Schematics

10	Electrical Symbols Electrical Wiring Diagrams
11	Piping Symbols Piping Diagrams Piping and Instrumentation Diagrams
12-13	Hydraulic and Pneumatic Symbols Hydraulic and Pneumatic Diagrams
14	Printreading Applications Project
15	Final Exam/Practicum

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. Expand student understanding of blueprint reading principles as applied to the production, use, and interpretation of a variety of common drawing types. (A,B,E,F)
2. Guide students to recognize, identify, and define the various components of maintenance prints, diagrams, and schematics. (A,B,E,F)
3. Enhance effective reading, understanding, and interpretation of standardized symbols used on Electrical, Piping, and Pneumatic & Hydraulic Schematics and Diagrams. (A,B,E,F)
4. Engage and develop the student's skills, knowledge, and abilities regarding the correct identification, reading, and interpretation of mechanical drawings, along with Electrical, Piping, and Pneumatic & Hydraulic Schematics and Diagrams. (A,B,E,F)

Expected Student Learning Outcomes

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

The student will

- a. Define, explain, and associate the terminology used in blueprint reading. (1, 2)
- b. Interpret and explain various views and types of drawings. (1)
- c. Identify and interpret supplementary information contained on drawings. (1, 2)
- d. Identify and interpret the symbols used in blueprint reading. (2, 3)
- e. Trace an electrical diagram by identifying and explaining the purpose of identified components. (2, 3)
- f. Trace a piping diagram by identifying and explaining the purpose of identified components. (2, 3)
- g. Trace a pneumatic diagram by identifying and explaining the purpose of identified components. (2, 3)
- h. Trace a hydraulic diagram by identifying and explaining the purpose of identified components. (2, 3)
- i. Locate and extract needed technical information. (1- 3)
- j. Associate and apply the basic principles of blueprint reading to maintenance prints and documents. (1-3)
- k. Use prints and schematics to locate maintenance problem areas. (1-4)
- l. Document technical information in a neat and orderly format. (1-4)
- m. Complete assignments based on oral and written instructions. (1-4)

Evaluation

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

Testing Procedures

Unit Exams	60 points
Exam 1: Basic Blueprint Reading	15 points
Exam 2: Advanced Blueprint Reading	15 points
Exam 3: Electrical Wiring Diagrams	10 points
Exam 4: Piping Diagrams	10 points
Exam 5: Pneumatic and Hydraulic Diagrams	10 points

Laboratory Experiences

Laboratory	30 Points
------------	-----------

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

Field Work

N/A

Other Evaluation Methods

Participation	5 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.

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