

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

SHOP PRACTICES
MET 1020

Class Hours: 3.0

Credit Hours: 4.0

Laboratory Hours: 3.0

**Date Revised: Spring
01**

Catalog Course Description:

An introductory course in the theory, setup, and operation of basic machine tools and measuring equipment.

Entry Level Standards:

Students entering this course must have completed basic skills in reading comprehension, written communication, and mathematics.

Prerequisites:

None

Corequisites:

CID for non-majors; MET 1001 for MET majors

Textbook(s) and Other Reference Materials Basic to the Course:

Required:

Machine Tool Technology: Repp, Mc Carthy, Glencoe Publishing Company , 5th Edition, 1984.

Machinists' Ready Reference: Weingartner, Prakken, 8th Edition 1993.

References:

Machinery's Handbook: Oberg, Jones, & Horton, Industrial Press, 23rd Edition, 1990.

Basic Shop Measurement: Hoffman, John Wiley & Sons, 1983.

I. Week/Unit/Topic Basis:

Week	Topic
1-3	Measurement and Inspection
4	Set-Up
5-6	Milling
7-8	Turning
9	Screw Threads

10-11	Drilling, Boring, and Reaming
12	Sawing and Shaping
13-14	Grinding and Abrasives
15	Review
16	Final Exam Period

II. Course Objectives*:

- A. Demonstrate understanding of basic measuring concepts. I, II
- B. Demonstrate basic set-up, inspection, and gaging techniques. I, II, III, IV
- C. Demonstrate safe basic milling and turning concepts. I, II, III, IV
- D. Demonstrate understanding of basic screw threads and functions. I, II, III, IV
- E. Demonstrate understanding of basic sawing, drilling, and grinding concepts. I, II, III, IV

*Roman numerals after course objectives reference goals of the MET program.

III. Instructional Processes*:

Students will:

1. Actively listen to class lectures and participate in class activities that develop and reinforce an understanding of the theories, concepts, principles, and applications of machining processes and measuring equipment. *Communication Outcome, Problem Solving & Decision Making Outcome, Technological Literacy Outcome, Numerical Literacy Outcome, Information Literacy Outcome, Active Learning Strategies*
2. Use concepts derived in the text and critical thinking skills to solve problems presented in the book, on class exams, and in the laboratory. *Problem Solving and Decision Making Outcome, Numerical Literacy Outcome*
3. Work individually and in teams to complete lab projects and assignments related to the theories, concepts, principles, and applications covered in the lecture or demonstration portion of the course. *Problem Solving & Decision Making Outcome, Technological Literacy Outcome, Numerical Literacy Outcome, Information Literacy Outcome, Active Learning Strategies*
4. Collect, analyze, and tabulate data in an orderly format to prepare a college level technical report using software packages such as WordPerfect, Word, and Excel. *Communication Outcome, Problem Solving & Decision Making Outcome, Technological Literacy Outcome, Numerical Literacy Outcome, Information Literacy Outcome, Active Learning Strategies*
5. Observe in class demonstrations on equipment, practice, and then demonstrate to instructor basic manipulative skills required to set up machine tool and part for manufacturing. *Problem Solving & Decision Making Outcome, Technological Literacy Outcome, Numerical Literacy Outcome*

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

IV. Expectations for Student Performance*:

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

1. Identify a variety of gages and measuring instruments. A
2. Operate and maintain a variety of standard and electronic measuring equipment. A
3. Apply and associate measuring concepts to machining processes. B
4. Perform competence in basic set-up operations. B
5. Perform basic gaging operations. B
6. Identify, explain, and associate milling terminology and concepts. C
7. Perform basic milling operations to given tolerances. C
8. Identify, explain, and associate turning terminology and concepts. C
9. Perform basic lathe set-up and operations to given tolerances. C
10. Identify basic screw threads and associate functions. D
11. Perform basic drilling operations. E
12. Perform basic sawing operations. E
13. Identify and associate the basic principles used in grinding E

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

V. Evaluation:

A. Testing Procedures: 40 points

Unit Exams

Approximately 5-7 exams will be administered during the course. They will include discussion questions, short answer questions, true/false questions, and problem solving.

B. Laboratory Expectations: 50 points

Laboratory Projects

Project 1: Measuring	(10 points)
Project 2: Mill/Drill	(10 points)
Project 3: Lathe	(10 points)
Project 4: Screw Threads	(10 points)
Lab Report	(10 points)

Guidelines and requirements for each project will be provided by the instructor.

C. Field Work: 10 points

Participation

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

requirements, and regular attendance.

D. Other Evaluation Methods:

N/A

E. Grading Scale:

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

A 92-100
B+ 88-91
B 83-87
C+ 79-82
C 74-78
D 65-73
F Below 65

VI. 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. Individual departments/programs/disciplines, with the approval of the vice president of Academic and Student Affairs, may have requirements that are more stringent.

B. Academic Dishonesty:

Cheating on a quiz or assigned project will not be tolerated. First offense will result in immediate dismissal and automatic failure of the course. Assistance from other students is encouraged during the learning stages of the course, but each student is responsible for completing their own course assignments.

C. Other Policies:

Make-Up Exams:

As a general rule, no make-up exams 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.

Counseling:

Counseling is available during posted office hours or by appointment.