

PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

**SHOP PRACTICES W/LAB
MET 1022**

Class Hours: 2.0

Credit Hours: 3.0

Laboratory Hours: 3.0

Revised: Spring 2011

Catalog Course Description:

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

Entry Level Standards:

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

Corequisites:

ENGT 1010 or ENGT 1100

Textbook(s) and Other Course Materials:

Textbook: 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, Inspection, & Set-Up
4-6	Milling & Set-Up
7-8	Turning & Set-Up
9	Screw Threads
10-11	Drilling, Boring, and Reaming
12	Sawing and Shaping
13-14	Grinding and Abrasives
15	Final Exam

II. Course Goals*:

The course will:

- A. Enhance understanding of basic inspection, measuring, and gaging concepts. (I, II, IV, V)
- B. Develop knowledge and skills to set-up, maintain, and functionally operate a standard milling machine. (I, II, IV, V)
- C. Develop knowledge and skills to set-up, maintain, and functionally operate a standard lathe. (I, II, IV, V)
- D. Enhance understanding of basic sawing, drilling, and grinding concepts. (I, II, IV, V)
- E. Enhance skills to communicate technical information. (III, V)

* Roman numerals after Course Goals reference Engineering Technology Program Goals.

III. Expectations for Student Performance*:

The student will be able to:

- 1. Identify a variety of gages and measuring instruments. (A)
- 2. Calibrate, operate, and maintain a variety of standard and electronic measuring equipment. (A)
- 3. Calculate allowance for mating parts. (A)
- 4. Calculate and set-up angles using gage blocks and a sine bar. (A)
- 5. Identify properties for a surface roughness tolerance (Metric & English). (A)
- 6. Identify a variety of milling machines, attachments, and cutters. (B)
- 7. Apply factors and calculate (Metric & English) feeds and speeds for a standard milling machine. (B)
- 8. Set-up, machine to tolerance, and inspect a part manufactured on a standard milling machine. (A, B, D)
- 9. Identify a variety of lathes, attachments, and cutters. (C)
- 10. Apply factors and calculate (Metric & English) feeds and speeds for a standard lathe. (C)
- 11. Identify and associate function of a variety of threads. (C)
- 12. Calculate thread depth and pitch. (C)
- 13. Set-up, machine to tolerance, and inspect a part manufactured on a standard lathe. (A, C, D)
- 14. Associate concepts and perform basic sawing, drilling, and reaming operations. (B, C, D)
- 15. Identify and associate the basic principles used in grinding. (D)
- 16. Document technical information in a neat and orderly format. (E)

17. Complete assignments based on oral and written instructions. (E)

* Capital letters after Expected Student Learning Outcomes reference the Course Goals listed above.

IV. Evaluation:

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

A. Testing Procedures:

Unit Exams (50 Points)

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:

Laboratory Projects

Project 1: Measuring (10 Points)
Project 2: Mill/Drill (10 Points)
Project 3: Lathe: Step Shaft (10 Points)
Project 4: Lathe: Plumb Bob (10 Points)
Lab Report (10 Points)

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

C. Field Work:

N/A

D. Other Evaluation Methods:

N/A

E. Grading Scale:

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

V. Policies:

A. 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 the Learning Division, 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 the Learning Division.

B. 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.

C. Accommodations for disabilities:

Students who 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 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, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at www.pstcc.edu/departments/swd/.

D. 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 will result in automatic failure of the course.