

COURSE INFORMATION

COURSE PREFIX/NO: **MTT 215**

COURSE TITLE: **Tool Room Machining I**

LEC HRS/WK: 2.0

LAB HRS/WK: 6.0

CREDIT HRS/SEMESTER: 4.0 [DL ATTENDANCE/VA STATEMENT](#) [TEXTBOOK INFORMATION](#)

COURSE DESCRIPTION

This course covers advanced machine tool operations, including complex die operations.

COURSE COMPETENCIES

Upon successful completion of this course, the student will perform the following:

- select proper material for work project
- set up surface grinder for various grinding
- set up milling machine for various milling
- student will know the difference in a blanking or piercing die
- the student will know how to determine cutting clearance for a die punch
- the student will know how to determine the dimensions for a simple V die.

MINIMAL STANDARDS/PERFORMANCE OBJECTIVES

- A. The student will be able to select the proper material for each machine shop project with 100% accuracy.
- B. The student will set up a surface grinder for each project to be ground in accordance to the blueprint specifications.
- C. The student will be able to set up a milling machine for each project to be milled in blueprint specifications.
- D. The student will be able to distinguish a blanking die from a piercing die.
- E. The student will be able to determine cutting clearance for a die punch.
- F. The student will be able to determine the dimensions for a simple V die.

COURSE REQUIREMENTS

ATTENDANCE

The student should adhere to the attendance policy set forth in the York Technical College Student Handbook. "Students must attend 80% of the hours assigned the class for a semester to receive credit for the course." In case a student does miss a class he/she is responsible for obtaining the material that was covered during the absence.

If a student is aware that he/she will miss class, then the student should notify the instructor at the earliest possible date.

If a student misses a test because of illness or urgent emergency, then he/she should do the following:

Notify the instructor prior to the class period, or at the earliest possible date. At that time a new date for a make-up test will be scheduled.

Student with unexcused absences during test time will be allowed to take a make-up test at the instructor's discretion.

The student has the burden of making sure that some arrangement was made with the instructor to take a make-up test.

ACADEMIC HONESTY

"York Technical College adheres to the South Carolina TECH Student Code, approved by the State Board for Technical and Comprehensive Education on March 13, 1974 (revised last April 25, 1984). Copies of this code are available in the Library and from Student Services. Any student caught cheating or involved in any other academic dishonesty will be given a grade of zero and will be subject to further disciplinary action".

CLASSROOM AND SHOP PROCEDURES

- Roll will be called at the beginning of each class.
- Students are responsible for assigned reading on: horizontal surface grinding, plain cylindrical grinding grinder operating and maintenance, milling machines: indexing, machining gear teeth, milling spur gear. Shaper: head adjustment adjusting the clapper box, adjusting vise to ram, and angular shaping. Cylindrical Grinder: plain cylindrical grinding.
- Tools and equipment that are used will be returned to their proper place.
- At the end of each class the student will be responsible for cleaning his/her work area. Brushes, brooms, and mops will be provided for this purpose.

LAB REQUIREMENTS

During the lab, students may work in pairs or individually. The instructor must see the completed project. A performance test will be given to ascertain if the student can successfully make the project.

EVALUATION STRATEGIES/GRADING

Students will be expected to complete 3 written test, 14 projects, and homework. Minimum score of 60% will be required on each test, project, and homework. Students who score below 70% may request a re-test at the instructor's discretion. Maximum re-test score will be 80%.

The final grade for MTT 215 will be determined as follows:

Shop Projects 70%
Test 20%
Homework/QA 10%

Grading scale is as follows:

A 90-100
B 80-89
C 70-79
D 60-69
F 0-60

CRITERIA FOR LAB PROJECTS

A = Student completed all projects correctly, without assistance.

B = Student completed all projects correctly, with minimal assistance from instructor.

C = Student completes all projects with constant assistance from instructor.

D = Student does not complete all projects, with or without assistance.

F = Student does not attempt to complete projects with or without assistance.

REQUIREMENTS FOR SHOP PROJECTS

1. Projects must be machined within specified tolerance.
2. Projects must be neat in appearance.
3. Projects must be free of burrs.

ENTRY LEVEL REQUIREMENTS:

Students should be able to demonstrate how to set up and operate surface grinders, milling machines, shapers, and cylindrical grinders.

PREREQUISITES

None

CO-REQUISITES

None

TOPICS/CONTENT OUTLINE

Surface Grinder Milling Machine

Shaper

Cylindrical Grinder

METHODS OF INSTRUCTION

Classroom instruction will include lectures and discussions.

Alternate instructions: If extra help is desired by the student, he/she should:

1. Ask the instructor for additional help in the shop.
2. Review units in the textbook.