
COURSE PREFIX/NO:	EGR 175
COURSE TITLE:	MANUFACTURING PROCESSES
LEC HRS/WK:	3.0
LAB HRS/WK:	0.0
CREDIT HRS/SEMESTER:	3.0

[Distance Learning Attendance/VA Statement](#)
[Textbook Information](#)

COURSE DESCRIPTION

This course includes the processes, alternatives, and operations in the manufacturing environment.

COURSE COMPETENCIES

Upon successful completion of this course, the student should be competent to perform the following tasks:

Module 1 – Properties of Metal

- Apply knowledge of atomic structure of matter in making material selections as required for industrial processes.
- Compare different aspects of heat treating such as hardening, annealing, quenching and tempering.
- Contrast the hardness measuring tools and the corresponding hardness scales, such as Rockwell, Brinell, Knoop, and Mohs.

Module 2 – Processing of Metals

- Discuss the practices involved in common casting processes such as sand casting, investment casting, and die casting.
- Explain metal working processes such as extrusion, forging, and rolling.
- Discuss the practices involved in metal punching and use of press brakes.
- Demonstrate understanding of powder metallurgy processes.

Module 3 – Machining of Metals

- Demonstrate understanding of modern machining operations and the corresponding production equipment for operations such as:
 - Sawing
 - Drilling
 - Broaching, shaping, and planing
 - Grinding
 - Turning (lathes) and milling
- Select the most appropriate process for manufacturing based on the type of raw material provided and the part being produced.

Module 4 – Basic NC Programming

- Demonstrate basic knowledge of NC programming and the construction and format of programs as they apply to common machines like lathes or mills.

Module 5 – Principles and Ethics

- Describe professional, ethical and social responsibilities as they relate to the engineering technology profession.
- Relate contemporary societal, global, and diversity (i.e., age, gender, race, ethnicity, etc.) issues to the engineering technology profession.

MINIMAL STANDARDS

All students must complete all modules and achieve a 60% average on quizzes, projects, reports, and any other required assignments to successfully complete the class. Students in certain majors (namely EGT and MET) are required to achieve a minimum grade of C (a minimum 70% average) for this course in order to graduate.

COURSE REQUIREMENTS

ATTENDANCE

Students will be bound by the policies stated in the York Technical College Student Handbook.

In case a student does miss a class, the student is responsible for obtaining the material that was covered during the absence. If a student is aware that a class will be missed, then the student should notify the instructor at the earliest possible date. If a student misses a test because of illness or urgent emergency, it is the responsibility of the student to notify the instructor prior to the class period or at the earliest possible date.

Students with absences during tests will be allowed to take a make-up test ***only at the discretion of the instructor***. The student has the burden to be sure that some arrangement was made with the instructor for a missed test or the student will automatically receive a zero for that test.

PARTICIPATION IN CLASS

It is expected that students will participate in class discussions and will take notes during lectures and presentations. It is expected that students will arrive on time for class and will turn off cell phones and similar devices before entering the classroom and leave them off for the duration of the class.

ACADEMIC HONESTY

York Technical College adheres to the the Student Code for the South Carolina Technical College System as approved by the State Board for Technical and Comprehensive Education. A copy of this code is available in the Library or from Student Services and says in part, "All forms of academic misconduct including, but not limited to, cheating on tests, plagiarism, collusion, and falsification of information will call for discipline."

EVALUATION CRITERIA / GRADING

The grading scale is as follows:

GRADE POINTS

- A 90-100
- B 80-89
- C 70-79
- D 60-69
- F 0-59

The class grade will be determined as follows:

Quizzes	90%
Attendance, Conduct, Participation	10%

Note: At the discretion of the instructor, a written report and oral presentation may be required in place of one or more quizzes.

ENTRY LEVEL SKILLS: None

PREREQUISITES: RDG 100 and ENG 100 with minimum grade of 'C' or equivalents

CO-REQUISITES: None

Disabilities Statement: Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Special Resources Offices (SR) at 803-327-8007 in the 300 area of Student Services. The SRO coordinates reasonable accommodations for students with documented disabilities.