
Course:	EGR 170
Course Title:	ENGINEERING MATERIALS
Lecture Hours/Week:	2.0
Lab Hours/Week:	3.0
Credit Hours/Semester:	3.0

[Distance Learning Attendance/VA Statement](#)

[Textbook Information](#)

COURSE DESCRIPTION

This course is a study of the properties, material behaviors, and applications of the properties, behaviors and applications of materials used in engineering products.

COURSE COMPETENCES

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

Module 1 – Construction Specifications Institute (CSI) Format

- Describe the various divisions of the Construction Specifications Institute (CSI) format and identify the types of work and materials covered in each.
- Explain the six stages of material lifecycle and its relation to the environment.
- Define an ideal engineering material and use the algorithm in the selection process.

Module 2 – Nature and Family of Materials

- Investigate the nature and family of materials using materials and civilization time-line.
- Name the five main groups that make up the family of materials.
- Analyze materials microstructure including crystal structures, defects, and impurities using a metallograph.

Module 3 – Evaluation of Mechanical Properties

- Identify and evaluate the common mechanical properties of major construction and engineering materials such as wood, composites, concrete, masonry, steel, aluminum, copper, and plastics.
- Select materials appropriate for specific engineering applications.

Module 4 – Production of Construction Materials

- Identify and describe the production processes for major construction and engineering materials such as wood, concrete, steel, aluminum, masonry, and plastics.

Module 5 – Diversity, Societal and Global Issues

- Demonstrate an understanding of diversity in the context of race, color, culture and ethnicity and their significance in contemporary workplace and the global economy.
- Recognize the importance and strength in diversity in the modern workplace.

STANDARDS

Assignments and attendance must be completed as designated in "Evaluation Strategies/Grading." Criteria for minimal acceptable performance will be provided by the instructor.

COURSE REQUIREMENTS

The student is responsible for attaining course competencies through completion of the following course requirements:

ATTENDANCE

Students will be bound by the policies stated in the latest edition of York Technical College Student Catalog and Handbook. Unexcused absence from a lab will result in a grade of ZERO for that lab. Missed labs cannot be made up. 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. At that time a new date for a make-up test can be scheduled. Students with unexcused absences during tests will be allowed to take a make-up test at the discretion of the instructor. It is the student's responsibility to ensure that some arrangement was made with the instructor for taking a make-up test on time.

MAINTAINING A COURSE NOTEBOOK

Students will maintain a class notebook. Notes should be made during study, during class, and while performing assignments. The instructor will periodically review the notebook during the semester for quality and content.

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. **NO BEEPERS OR CELL PHONES WILL BE ALLOWED IN THE CLASSROOM.**

EVALUATION STATEGES/GRADING

Grades will be assigned based on the following scale:

Points Grade

90-100 A

80-89 B

70-79 C

60-69 D

Below 60 F

Evaluation method

Quiz average (min. 4) 40%

Comprehensive exam 20%

Lab reports 30%

Oral Presentation 10%

METHOD OF INSTRUCTION

Two hours of lecture will be delivered per week. Lab time is devoted to lecture, demonstration and lab experiments. About one-fifth of class time is reserved for coaching as students solve problems related to lab work and exams. The instructor may use all available means, including video, DVD, and CD-ROM, necessary to ensure proper transfer of knowledge in the classroom and lab.

ENTRY LEVEL SKILLS

The student must be capable of reading/comprehending/retaining written technical material as contained in the textbooks, encyclopedias and periodicals.

PREREQUISITES: Reading 100 or equivalent

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.