

Common Course Numbering System

Your current Institution is CCCS

Searching Current Courses For Spring 2015

Course: EGT 201

Title: Engineering Materials

Long Title:

Course Description: Investigates the physical and mechanical properties of engineering materials used within industry. This course will also include the study of ferrous and nonferrous metals, polymers (plastics), woods, ceramics, composites, and other advanced materials.

Min Credit: 3

Max Credit:

Origin Notes: FRCC

Course Notes: Revised prefix was TEC, dsctrptn, cmptnccs, outln 11/1/12

STANDARD COMPETENCIES:

1. Describe and differentiate between basic types of chemical bonding, chemical reactions, and mixtures and solutions.
2. Distinguish between solids, liquids, gases and plasmas.
3. Define and apply the concepts of stress and strain as engineering terms.
4. Calculate simple normal stress and strain.
5. Calculate simple shear stress and strain.
6. Define and apply the concept of material elasticity.
7. Calculate the modulus of elasticity from stress-strain data.
8. Define, apply, and describe how the following is used in material selection and design: hardness, creep, fatigue, toughness, corrosion resistance, electrical conductivity, thermal conductivity, thermal expansion, and service temperature.
9. Distinguish between types of ferrous and nonferrous metals and their properties.
10. Describe mining, ore extraction and refining processes.
11. Name the types and describe the results of the annealing and hardening processes.
12. Name and describe material shaping and removal processes.
13. Name and describe applications of coatings and uses of powder metallurgy.
14. Distinguish between classifications and types of polymers and their properties.
15. Name and describe material shaping and removal processes.
18. Distinguish between classifications and types of woods and their properties.
16. Distinguish between classifications and types of concretes and ceramics and their properties.

17. Describe classifications and applications for composites, coverings/finishes, adhesives, and superconductors.

TOPICAL OUTLINE:

- I. Properties of Materials: Basic Properties of Matter, and Properties of Materials.
- II. Material Processing:
Metals, Polymers (plastics), Woods, Concretes/Ceramics, Advanced Materials and Processes

Course Offered At:

Arapahoe Community College ACC
Front Range Community College FRCC

RELEASE: 8.5.3

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