

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: AMFG 110

Credit hours: 3-2-3

Course Title: Manufacturing Materials and Methods

Course Prerequisites: MATH 099 and AMFG 107 and AMFG 108 OR Instructor Permission

Textbook(s): Groover, Mikell P. Fundamentals of Modern Manufacturing: Materials, Processes, and Systems, 7th edition. Wiley. ISBN: 978-1119475316

Course Description: The course is designed for the manufacturing technologist. Topics include materials of manufacture, manufacturing processes, measurement and part inspection, and manufacturing automation.

Learning Outcomes:

At the end of the course, the student will:

- A. understand materials of manufacture including atomic structures, properties of metals, mining and extraction of materials, and selection and application of materials;
- B. understand manufacturing methods including casting, hot working, cold working, powder metallurgy, machining, machine tools, joining, and plastics and composites;
- C. demonstrate and understand measurement and inspection methods used in a manufacturing system; and
- D. understand automation techniques used in manufacturing systems.

To achieve the learning outcomes, the student will or will be able to:

(The letter designations at the end of each statement refer to the learning outcome(s).)

1. differentiate between the different types of common steels and materials used in products and attributes of each; (A)
2. use and understand a selection process to choose appropriate materials for different components within a manufacturing system; (A)
3. differentiate and understand the application of different metal fabricating technologies; (B)
4. develop basic CNC programs to machine components; (B)
5. differentiate and choose appropriately between manual, semi-automated, and computer controlled machining methods for different applications; (B)
6. measure typical key features of components to determine conformance with specification; (C)
7. demonstrate understanding of the application of sophisticated measurement methods (CMM, digitizing, function checking); (C) and
8. define common automatic processes and determine if appropriate for the application. (D)

Course Requirements: Complete all homework assignments, in-class equipment exercises, in class tests, and final exam.

Revised: 4/13/2022

Course Grading Scale:

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

Attendance Policy: The college attendance policy is available at <http://catalog.bpcc.edu/content.php?catoid=5&navoid=369>

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams and/or clinical fees.

Nondiscrimination Statement: Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

COORDINATOR FOR SECTION 504 AND ADA

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