

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: CONS 101

Credit Hours: 3-2-3

Course Title: Materials and Methods I and Laboratory

Course Prerequisites: CONS 100 and MATH 102

Textbook(s): Mehta, Madan et al; Building Construction – Principals, Materials and Systems, 2nd edition. Pearson, 2013. ISBN: 9780132148696

Course Description: The properties of most common construction materials are covered along with calculation methods for determining the suitability of materials for given applications. Properties covered include loads and load resistance; thermal; air and water vapor flow; fire-related; acoustical; expansion and contraction; and sustainable construction. A general overview of the construction process is also provided. Lab provides hands on opportunities for hands-on practice of learned methods.

Learning Outcomes:

At the end of this course, the student will:

- A. apply knowledge of project delivery methods and the regulations that govern the construction industry; (Ch 1 & 2)
- B. demonstrate understanding of physical properties of building materials; (Ch 3 – 9)
- C. demonstrate ability to correctly calculate loads, thermal resistance, sound levels, phase changes, and insulating properties in materials and assemblies; (Ch 4-9)
- D. demonstrate understanding of sustainable construction materials and methods; (Ch 10)
- E. recognize soil types and demonstrate understanding of their properties; (Ch 11) and
- F. identify and apply methods for sub-surface construction techniques. (Ch 12)

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. review and compare project delivery methods and associated terms; (A)
- 2. differentiate between building codes by sponsoring organization and by code type; (A)
- 3. develop understanding of and practice calculation of loads and load resistance of buildings; (B,C)
- 4. develop understanding of and practice calculation of thermal properties of building materials; (B,C)
- 5. develop understanding of and practice calculation of air leakage and water vapor control in buildings; (B,C)
- 6. understand the fire-related properties of materials; (B)
- 7. understand the use of sealants and caulks to allow for expansion and contraction of materials; (B)

8. practice the application of sustainable construction techniques & the part that material selection plays in sustainability; (D)
9. understand the chemical, physical and usage properties of soil types and their part in supporting the built environment; (E) and
10. understand and practice sub-surface construction methods. (F)

Course Requirements: CANVAS, Textbook, Scientific Calculator, Lab Materials as required.

Course Grading Scale:

90% to 100%	=	A
80% to < 90%	=	B
70% to < 80%	=	C
60% to < 70%	=	D
< 60%	=	F

A grade of “C” or better is required for all courses which are required in the certificate and degree programs.

Attendance Policy: The college attendance policy is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>

Course Fees: This course is accompanied with an additional fee for supplemental materials.

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.

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