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


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](http://www.bpcc.edu/catalog/current/academicpolicies.html)

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

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