

Prepared by the Department of Natural Sciences & Applied Technology
Date of Departmental Approval: February 10, 2015
Date approved by Curriculum and Programs: March 29, 2017

Effective: Fall 2017

1. **Course Number:** CON105
Course Title: Methods and Materials of Construction
2. **Description:** Students learn about basic construction materials including properties and limitations, fabrication processes, and their effect on the fabrication of buildings. Field procedures are used to study qualitative and quantitative technological characteristics along with the proper use, selection, specifications, strength and limitations, fire resistance, and code conformity of materials. Students develop a working knowledge of zoning, site plans, FEMA flood zones, insurance and contract documents.
3. **Student Learning Outcomes (instructional objectives, intellectual skills):**
Upon successful completion of this course, students are able to do the following:
 - Identify the commonly used building materials.
 - Develop criteria for proper selection and use of those materials
 - Assess material failure modes and the consequences of improper selection or application techniques.
 - Rationalize the effect that building codes have on material selection
 - Discuss the impact on sustainability of material selection
 - Compare and contrast current practices in moisture, water vapor and air infiltration control.
4. **Credits:** 3 credits
5. **Satisfies General Education Requirement:** No
6. **Prerequisite:** None
7. **Semester Offered:** Spring
8. **Suggested General Guidelines for Evaluation:** Letter grades will be assigned on the basis of quality of class work, participation and outside assignments. Quizzes, special assignments, extra credit optional work and final examination.
9. **General Topical Outline (Optional):**
 - A. Simplified Engineering and strength of materials
 - B. Key properties, A.S.T.M., fire resistance
 - C. Wood and manufactured lumber
 - D. Cement, aggregates, concrete and bituminous materials
 - E. Concrete masonry units
 - F. Brick, clay, tile, and stone
 - G. Steel and non-ferrous metals
 - H. Gypsum, lime and other fire proofing materials
 - I. Glass and glazing systems
 - J. Building paper, boards
 - K. Synthetic material in building
 - L. Exterior wall, floor, and insulation material
 - M. Insulating, acoustical, and roofing material
 - N. Protective and decorative coating, glues, sealers, glazing and caulking compounds