Course Prefix and Number:  ARC 131  
Credits:  3

Course Title:  Materials and Methods of Construction I

Course Description:  Covers use of wood as a building material in all phases of construction. Deals with species used, growth characteristics, hygroscopic properties and applications of lumber and plywood. Includes wood framing systems, pre-manufactured components, modular systems, windows, doors, cabinets, and flooring. Lecture 3 hours per week

General Course Purpose:  To give the student a comprehensive understanding of wood-based construction systems as one of the primary components used in architectural design projects.

Course Prerequisites and Co-requisites:  None

Course Objectives:
Upon completing the course, the student will be able to
a. Identify the important commercial species and sources of production;
b. Demonstrate an understanding of the differences in hardwoods and softwoods;
c. Identify the growth patterns of wood;
d. Identify the physical properties of major species and the appropriate use of each;
e. Demonstrate an understanding of the importance of moisture content in wood and wood products;
f. Identify the structural properties of wood;
g. Prescribe the preservative treatments that can be used on woods and wood products;
h. Identify the “standards of quality” and grading of wood;
i. Demonstrate an understanding of the processing of lumber, forest to finished product;
j. Identify plywood and plywood products and understand its manufacture, grading, and use;
k. Demonstrate an understanding of the nomenclature of home and building and construction practices, including platform frame, trusses, and engineered systems;
l. Identify wood products usage in window, doors, flooring, shakes, and cabinets;
m. Apply finish procedures and materials (paints, stains, protective coatings);
n. Demonstrate an understanding of the usage of gypsum products and insulation; and
0. Identify the basic construction process associated with wood construction.
Major Topics to Be Included:

a. Wood
b. Wood products
c. Paints and protective coatings
d. Aluminum products
e. Gypsum products
f. Specialized foundation systems
g. Pole construction
h. Floor ceiling systems
i. Wood-framed floors
j. Wall systems
k. Roof ceiling systems
l. Shingle roofing
m. Shingle siding
n. Painting and finishing
o. Building codes
p. Construction standards
q. Moisture control

Effective Date of Course Content Summary: August, 2008