

TIDEWATER COMMUNITY COLLEGE

Official Course Outline

Course Prefix/Number/Title: ARC 133 Construction Methodology and Procedures I

Credit Hours: 3 **Lecture Hours:** 3 **Lab Hours:** 0 **Total Contact Hours:** 3

Pre-requisites: None **Co-requisite:** None

Course Description: Studies materials used in construction of buildings, covering foundations to structural framing systems. Includes appropriate use of materials for various construction types. Includes specification of materials and installation procedures; types of specifications and writing procedures; bidding procedures and, contract documents.

Course Objectives: This course is an examination of the building components and methods used in the construction industry. Topics include: overview of materials and building/structural types (historic, current); factors affecting choice of materials and structural form; mechanical and non-mechanical properties (strength, structural performance, physical properties, durability); individual building materials (manufacturing, properties, comparative behavior, applications in construction) - wood, stone, brick, concrete, metals, glass, plastics, etc; relation between materials and their applications in buildings (residential, commercial, special construction); case studies.

Upon completion of the course, students will gain:

- Compare and contrast material properties for most common and advanced building materials.
- Describe typical and potential applications of these materials.
- Identify relationships between material properties and structural form.
- Identify crucial problem areas in manufacture and applications of building materials.
- Identify and describe building structural systems.

Course Content:

- The Building Site
- The Building
- Foundation Systems
- Floor Systems
- Wall Systems
- Roof Systems
- Moisture and Thermal Protection
- Doors and Windows
- Special Construction
- Finish Work
- Mechanical and Electrical Systems

Textbook: Francis D.K. Ching, Cassandra Adams. Building Construction Illustrated. New York: John Wiley and Sons, Inc, 4th ed, 2008. ISBN-13: 978-0-470-08781-7