**DEPARTMENT OF ARCHITECTUREENGINEERING**
**ARCHITECTURE ENGINEERING PROGRAM, BSC.**

## Course Syllabus

1. **Course number and name**
   AR 237Building Construction I

2. **Credits and contact hours**
   (2+2) 3 credit hours, 4 contact hours

3. **Coursetype**
   Blended Learning

4. **Instructor's or course coordinator's name**
   Arch. Amani Sawalha

5. **Textbook information**
   1. Ching, F. D. K.2001. "Building construction Illustrated".3r edition. New York, 2001.
   2. Allen, Iano. 2013. Fundamentals of Building Construction: Materials and Methods 6th Edition.
   3. Ching, F. D. K. 2001 "A visual Dictionary of Architecture" 2nd edition 1997.
   4. Mehta Scarborough, Armpriest, "Building Construction: Principles, Materials, and Systems, Second Edition ". Pearson, Prentice Hall.

a. **Other supplemental materials**
   Instructor's notes.

6. **Specific course information**

a. **Catalog description**
   To acquaint the student with the role of architect in building industry, including building materials whether natural or produced notation, terminology, properties, potential) and the standard procedures employed to achieve the optimum use of these materials such as concrete, natural stone, wood, bricks, metals and polymers. This course covers in addition to materials; deep understanding of building components; whether primary or secondary; soil investigation, excavation works, site mobilization and foundations, masonry walls, and flooring systems, the course covers various techniques of stone, concrete, steel and brick studio will address exercises related to mentioned topics.

b. **Prerequisites or co-requisites**
   Prerequisite: AR 112 Introduction to Architecture Design (2)

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**c. The course is:**
Required in the Architecture Engineering Program.

**7. Specific goals for the course**

**a. Intended Learning Outcomes:**
After completion of the course, students are expected to be able to:

**A. Knowledge and Understanding (student should):**
A.1 Understand the main structural systems, technologies and methods which are being used in building construction.
A.2 Be familiar with the factors impacting the choice of the structural system; physical properties, cost and durability and materials characteristics responding to the sustainability issues.
A.3 Have an overview of waterproofing, sound and heat insulation).

**B. The following student outcomes are addressed by the courseCognitive and Intellectual Skills:**
B.1 Identify the importance of soil testing, insulation and maintenance.
B.2 Discuss the criteria of structural system selection.

**C. Subject specific skills:**
C1. Describe the process of selecting, constructing and maintaining structural elements in a building.

**8. Intended Learning Outcomes and their Alignment with Program learning Outcomes (PLO's) Methods of Delivery, and Assessment Methods:**

| Learning Outcomes | Program PEOs | Method of Delivery | Assessment Method |
|---|---|---|---|
| **Course Outcomes** | | | |
| A1. Ability to produce initial and comprehensive working plans | ARC-1.1.4.2 | Lectures + studios | Home Works, Mid & Final Exams |
| A2. Knowledge in building material; types, physical characteristics, systems, and environmental impact. | ARC-2.2.1.1 | Lectures | Home Works, Mid & Final Exams |
| A3. Knowledge in basic principle of structural behavior for different construction systems. | ARC-2.2.1.2 | Lectures + studios | Home Works, Mid & Final Exams |

| | | | |
|---|---|---|---|
| A4. Ability to research and select structural and construction systems, and materials that are related to the proposed architectural design | ARC-2.2.1.4 | presentation | project |
| A5. Ability to design projects that assist to reuse and conserve natural or built resources, that assist users and reduce environmental impact resulting from building construction and occupancy through providing means of processing carbon emissions. Environmental-friendly and energy saving design. | ARC-2.2.3.1 | Lectures + studios | Home Works, & Final Exams |
| A6. Knowledge of reusing and recycling building material and site material | ARC-2.2.3.3 | Lectures + studios | Final Exams |

## 9. Weekly Teaching Plan

| Week No. | Lec. | Topic | Method of Delivery |
|---|---|---|---|
| 1 | | Course Introduction | Lecture |
| | | Relation between design process and construction process. | Lecture |
| 2 | | Building Materials and characteristic of Building Materials. | Lecture |
| | | Building components and construction process starting from soil Investigation, site preparation. | Online Lecture/ synchronous active learning |
| 3 | | Building components and construction process starting from soil Investigation, site preparation. | Lecture |
| | | Building Materials and characteristic of Building Materials. | Asynchronous active learning Field trips |
| 4 | | Mobilization and Excavation works. | Lecture |
| | | Mobilization and Excavation works. | Online Lecture/ synchronous active learning |
| 5 | | Substructure and Foundation types. | Lecture |
| | | Substructure and Foundation types. | Online |

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| | | | |
|---|---|---|---|
| | | | Lecture/ synchronous active learning |
| **6** | | Studio works, an exercise for foundation. | Lecture |
| | | Building System, Structural System and Super - Structure. | Online Lecture/ synchronous active learning |
| **7** | | Super - Structure and Structural Slabs. | Lecture |
| | | Structural Joints and Expansion Joints | Online Lecture/ synchronous active learning |
| **8** | | Midterm | 30% |
| | | Structural Joints and Expansion Joints, Studio Work | Online Lecture/ synchronous active learning |
| **9** | | Super-Structure – Structural Beams | Lecture |
| | | Super-Structure – Structural Beams | Online Lecture/ synchronous active learning |
| **10** | | External and internal walls Concrete walls. | Lecture |
| | | Masonry walls and columns | Online Lecture/ synchronous active learning |
| **11** | | Masonry walls and columns | Lecture |
| | | External and internal walls Concrete walls, Masonry walls and columns. | Asynchronous active learning |
| **12** | | Stair and Elevator details | Lecture |
| | | Stair and Elevator details studio work. | Asynchronous active learning |

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| | | | |
|---|---|---|---|
| **13** | | Wood construction. And Metal construction. | Lecture |
| | | Wood construction. And Metal construction. | Asynchronous active learning |
| **14** | | Moister insulations and thermal insulations and details. | Lecture |
| | | Insulation Materials and discussion | Asynchronous active learning |
| **15** | | **Final exams 40%** | **40%** |
| | | | |

1. **Grade Distribution:**

| Assessment | Grade | Week No. |
|---|---|---|
| Midterm Exam | 30% | 8th Week |
| Assignments (Reports, Quizzes, Seminar, Attendance,Homework's.) | 30% | 1-14th Week |
| Final Examination | 40% | 15th Week |

**Note:** Make-up exams will be offered for valid reasons. It may be different from regular exams in content and format.