

ARE-100: INTRODUCTION TO ARCHITECTURAL ENGINEERING

Course Outline

Course : Introduction to Architectural Engineering, ARE 100
Semester : 2006-61
Instructor : Sabeer Hamid
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Course Timings: Monday 11.00 AM to 11.50 AM
Location : 19-452-4

1. Course Description

The course focuses on providing an overview of the Architectural Engineering discipline and the role of an Architectural Engineer in facilitating the development and operation of an efficient built environment. Various building functions, their components and the integration of building systems in the design, construction and operation stages are introduced. Simple understanding of the building environmental requirements and the impact of socio-economic factors on the building development is initiated in this course. The latest trends in the building industry and the incorporation of modern technology and building materials in design and construction are discussed. The need for Architectural Engineer as an essential member of a building development and operation team is also highlighted.

2. Course Objective

	Program Objective	Objective
<i>Course Objectives:</i>	#1	<ul style="list-style-type: none">Introduce students with the Architectural Engineering field as an important constituent of building design and development
		<ul style="list-style-type: none">Familiarize students with the role of Architectural Engineer in the building industry, their need and potential opportunities towards a promising carrier.

		<ul style="list-style-type: none"> • Provide an overview of the occupant requirements, occupant expectations from the building, building functions, types, building components and systems
		<ul style="list-style-type: none"> • Illustrate the environmental and social needs of buildings and their associated systems.

4. Course Outcomes

<i>Course Outcomes:</i>	Program outcome	Description
	#A	<ul style="list-style-type: none"> ▪ Be able to have a basic understanding of buildings, their function and types of buildings.
		<ul style="list-style-type: none"> ▪ Be able to appreciate the historic evolution of the built-up environment in various regions of the world.
		<ul style="list-style-type: none"> ▪ Be able to differentiate between the various key participants of a building design and construction and the role of Architectural Engineer in this process.
		<ul style="list-style-type: none"> ▪ Be able to classify various building systems of the building and understand their basic requirements.
		<ul style="list-style-type: none"> ▪ Be able to make decision regarding the selection of Architectural Engineering as a major area of graduation.

4. Course Syllabus

1. Basic understanding of buildings, their need, function, systems & Architecture
2. Brief history of Architecture
3. Introduction to ARE & the role of Architectural Engineers
4. How to build; process, materials and construction
5. Architectural Graphics and communications
6. Building Structure and its envelope
7. Building systems;
 - ❖ Structural System
 - ❖ HVAC System
 - ❖ Electrical System
 - ❖ Plumbing System

- ❖ Circulation System
 - ❖ Safety System
 - ❖ Connectivity
8. Environmental Aspects
 - ❖ Indoor Air Quality (IAQ)
 - ❖ Acoustics & noise control
 - ❖ Building Illumination
 9. Computer Aided Building Design
 10. Building operation & maintenance
 11. Overview on Intelligent Buildings
 12. Future of Architectural Engineering

4. Course Evaluation

Break-up of course evaluation

✓ Class assignments	20
✓ Quizzes	10
✓ Major Exam	10
✓ Final Assignment	15
✓ Final Exam	40
✓ Class participation	05

Note:

- As engineering students and future professionals, students are required to be responsible and be present in all the classes. A class missed is knowledge lost. All the students should be present in class before the instructor arrives and thus minimize the wastage of time. Attendance will be taken as the class begins and will not be repeated.
- Two un-excused absences will result in a warning letter. Further absence requires the student to withdraw from the course (W) or (DN) will be reported to the registrar office.
- Late submission of assignments is not expected and will result in reduced grades.
- To complete your work and do a good job, you are expected to put extra efforts and time at your own convenience.

Good Luck