

Faculty of Engineering & Technology

Building Construction & Materials 1

Information :

Course Code : ARC 241

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Department of Architectural Engineering

Instructor Information :

Title	Name	Office hours
Lecturer	Nader Ibrahim Ismael Ibrahim	2
Lecturer	DINA EID SAID KHATER	1
Assistant Lecturer	AMANY MEDHAT HUSSEIN KHALIL MOHAMED	1
Teaching Assistant	AYA TAREK IBRAHEM ABDELHADY AHMED	3
Teaching Assistant	Kamal Abdeleziz Ali Selim	2

Area Of Study :

Upon successful completion of the course, the student should be able to:

- 1- Develop understanding of the nature of loads and load transfer mechanisms in different building systems.
- 2- Develop understanding of Drawing techniques, Abbreviation symbols and Technical present Select proper structural systems depending on building type.
- 3- Develop understanding of effects on the building.
- 4- Understanding types of structures; Bearing Walls , Skeleton System and Surface Construction
- 5- Develop understanding of principles of construction as related to construction materials.
- 6- Differentiate between structural and non-structural building components.
- 7- Develop understanding of the aim & principles of working drawings.
- 8- Develop understanding of Traditional Construction Method; Bearing Walls.
 - Using Brick, Rubble or Stones to build bearing elements.
 - Bridging wall openings by brick, steel, wood and stone
 - (Lintel & Arches).
 - Introduction to foundation design.

Description :

General introduction, Drawing techniques, Abbreviation symbols, Dimensioning, Technical presentation, Understanding types of structures, Wall bearing & skeleton types, Traditional construction, Masonry, Raw bricks & brick masonry, Detailing, Introduction to foundation design, Construction buildings types & techniques.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Define different building systems
2 -	Describe the nature of loads and load transfer mechanisms in different building systems
3 -	Define different construction methods and materials that may be used in different building types
4 -	Effects on the building.

5 -	Distributing loads according to the soil bearing capacity.
6 -	Transferring loads by single/double curvature surfaces.
b. Intellectual Skills: :	
1 -	Select proper structural systems depending on building type and spans.
2 -	Compare and differentiate between structural and non-structural building components.
3 -	Criticize and evaluate different construction systems for different design alternatives.
c. Professional and Practical Skills: :	
1 -	Design suitable structural systems and elements to be within proper technical framework.
2 -	Use appropriate graphic techniques for representation.
3 -	Submit professional and technical good looking complete drawings.
d. General and Transferable Skills: :	
1 -	Communicate effectively with other people using visual, graphic, written and verbal means.
2 -	Work in a self-directed manner
3 -	Work coherently and successfully as a part of a team in researches and assignments.
4 -	Manage time and meet deadlines.
5 -	Use the internet in searching for information about specific building materials, finishing and structural systems.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Working Drawing introduction	8	4	4
English Bond	8	4	4
Flemish Bond (Single& Double)	8	4	4
Foundations and Ground Floor	8	4	4
Basement Floor & English Court (Retaining Walls; brick and stones)	4	2	2
Roofs (Jack Arch)	4	2	2
Roofs (Domes and Vaults)	4	2	2
Lintels and Arches	4	2	2
Research Projects and Presentations	4	2	2

Teaching And Learning Methodologies :

Lectures
Drawing exercises in the Design studios.
Research assignments and presentations.
Information collection from different sources .
Site visits and field trips.

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments and Projects	50.00		
Attendance	5.00		
Final- term examination	20.00		
In Class Quizzes	20.00		
Participation	5.00		

Course Notes :

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Recommended books :

- 1-McKay, W. B. et al; Building Construction, Vol.:1
- 2-Chudley, R. & Greeno, R.; Building Construction Handbook, 7th ed., Elsevier Ltd., 2008
- 3-Ramsey, Sleeper; Architectural Graphic Standards
- 4-Mitchell, George A.; Building Construction, Vol.:1

Periodicals :

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Web Sites :

www.sweetscatalogue.com