

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
Professor	Alaa Eldin Elsayed Faried Hassan	2
Lecturer	Nader Ibrahim Ismael Ibrahim	1
Teaching Assistant	Omar Magdy Ahmed Ibrahim Elbahrawy	
Teaching Assistant	Dina Ahmed Abdelsalam El Gharib	
Teaching Assistant	Salma Mohamed Eltohamy Elgendy	
Teaching Assistant	Ahmed Khaled Selim Mohamed Faggal	
Teaching Assistant	Aya Osama Ahmed Kamal Aly	
Teaching Assistant	Aya Osama Ahmed Kamal Aly	
Teaching Assistant	Sara Said Abdelrahman Awaadallah Haikal	

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's 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.sweetscatscatalogue.com