FUTURE UNIVERSITY IN EGYPT جامعة المستقبل

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	Tamer Samir Mahmoud Hamza Omar	4
Assistant Lecturer	Mohamed Mahmoud Sayed Mahmoud Saleh	
Assistant Lecturer	Eman Essam Eldin Abdel Hafez Nagub	
Teaching Assistant	Aya Yehia Ibrahim Abdelmoaty	
Teaching Assistant	Kamal Abdeleziz Ali Selim	
Teaching Assistant	Mohamed Maher Mohamed Abd El Monem Ahmed	6
Teaching Assistant	Ahmed Mohamed Roshdy abdo ali soliman	1

Area Of Study :

The aims of this course are to:
 Build the students awareness regarding:
o The main conventional construction systems (load bearing walls and R.C. skeleton system)
o The main threats the building may experience and how to protect it against.
o The main structural rule of thumbs used to size the structural components.
o Some Arabic site jargon terms.
 Train the student to:
o Draw some architectural details.
o Propose solutions for some basic constructional problems.

Description :

General introduction, Drawing techniques, Abbreviation symbols, Dimensioning, Technical presentation, Understanding types of structures, Wall bearing & skeleton types. Traditional Construction Method; Load bearing walls. Using brick to build load bearing elements: foundation design, walls, jack arch floors, vaults and domes. Introduction to RC skeleton system.

Course outcomes :

a.Knowledge and Understanding: :

1 -	a1. List different types of shallow foundations.
2 -	a2. Explain the loads transferring method and effect in flat and curved surfaces.
3 -	a3. List some types of: water proofing and heat insulation materials.
4 -	a4. List different brick types according to their function and manufacturing components.

5 -	a5. List some of different brick bonding methods.
6 -	a6. Choose the proper site jargon that suits the scientific term.
b.Intellectual Skills: :	
1 -	b1. Differentiate between structural and non-structural building components.
2 -	b2. Select proper structural system accordingly with building needs, offering and limitations.
3 -	b3. Propose building problems causes.
c.Professional and Practical Skills: :	
1 -	c1. Construct different building structural elements in the load bearing system: foundations, walls, jack arch floors, vaults, and domes.
2 -	c2. Protect different building elements against some of the surrounding threats such as: storm water, ground water, and the thermal effect of the sun rays.
3 -	c3. Use freehand sketches and engineering drafting to draw building construction details.
4 -	c4. Build physical abstracted models to illustrate some constructional problems solutions.
d.General and Transferable Skills: :	
1 -	d1. Do simple Search for information.
2 -	d2. Manage time to meet deadlines.
3 -	d3. Refer to relevant literatures.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction	4	2	2
Terms & Structure Systems; traditional & conventional	4	2	2
English & Flemish Bonds	4	2	2
Foundations and Ground Floor.	8	4	4
Basement Floor and English court	8	4	4
Intermediate Floor: (Jack Arch)	4	2	2
Final Roof : (R.C. Slap)	4	2	2
Final Roof: Domes on Pendentives & on Squenches	8	4	4
Final Roof: Vaults	4	2	2
Skeleton System	8	4	4

Teaching And Learning Methodologies :

Lectures
Physical Maquette
Report
Class Work

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments/Studio work	40.00		
final exam	40.00		
In Class Quizzes	10.00		
Participation	10.00		

Books :

Book	Author	Publisher
Building with Earth Design and Technology of a Sustainable Architecture	Gernot Minke	Birkhaeuser

Course Notes :

Students Lecture Notes

Recommended books :

a) Ching, Francis D. K.; Building Construction Illustration, 4th Ed.
b) Mckay's, W. B. et ell; Building Construction, v. I
c) Ramsey, Sleeper; Architectural graphic standards.
d) Mitchell, George A.; Building Construction. v. I

Periodicals :

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Web Sites :

www.sweetscatscatalogue.com