

FUE - Future University in Egypt

Faculty of Engineering and Technology Department of Architectural Engineering

Course Specifications

ARC 342: Building Construction and Materials (4)

Programme (s) on which the course is given:	B.Sc. in Architectural Engineering
Major or minor element of programmes:	(Not Applicable)
Department offering the programme:	Architectural Engineering
Department offering the course:	Architectural Engineering
Academic year/Level:	Level Three – 6 th semester
Date of specification approval:	November 2017

A- Basic Information

Title: Building Construction and Materials (4)	Code: ARC 342
Credit Hours: 3 Cr. Hrs.	
Lectures: 2 Hrs.	
Tutorial: 4 Hrs.	
Total: 6 Hrs.	
Prerequisite: ARC 341: Building Construction and Materials (3)	

B- Professional Information

1- Catalog Course Description:

Contemporary finishing techniques, methods, Architectural /building works, Partitions, curtain walls, Panels, Finishing materials, bricks, timber, metals, plastics and synthetics, Plaster, cladding, suspended ceilings, raised floor...,etc.) Expansion and settlement joints, admixtures, thermal and damp proofing.

2- Overall aims of the course:

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

- Know the different ways of Thermal and damp proofing.
- Know the main types of expansion and settlement joints.
- Know the different types of flooring, wall and ceiling finishes.
- Recognize the different technics of executing floor, wall and ceiling finishes.

3- Intended learning outcomes of course (ILOs):

Program ILOs related to course:

3.1 **A01** Demonstrate knowledge and understanding of concepts and theories of basic applied and engineering sciences appropriate to architectural engineering.

A06 Demonstrate knowledge and understanding of different building construction systems and execution design methods and techniques.

A12 Demonstrate knowledge and understanding of Characteristics of engineering materials related to the discipline

A13 Demonstrate knowledge and understanding of site jargon, technical language and report writing styles and rules

A17 Demonstrate knowledge and understanding of the role of the architecture profession relative to the construction industry and the overlapping interests of organizations representing the built environment

B03 Solve architectural problems often on the basis of limited and possibly contradicting information

B05 Derive different alternative solutions and assess their expected performance to reach architectural decisions

B11 Integrate relationship of structure, building materials, and construction elements into design process.

C05 Prepare and present technical reports, working drawings, and construction documents for design projects

C13 Use appropriate construction techniques and materials to specify and implement different designs;

D05 Manage tasks and resources

D08 Search for information and adopt life-long self-learning

D11 Refer to relevant literatures

3.2 *Intended learning outcomes of course (ILOs):*

a- Knowledge and understanding:

B- By the end of this course the student should be able to:

- a1. Define the need for building insulation and joints.
- a2. List the different ways of and water, damp thermal proofing.
- a3. Define the main types of expansion and settlement joints.
- a4. List the different types of floor, wall and ceiling finishes.
- a5. Recognize the different types of executing floor, wall and ceiling finishes.

a- Intellectual skills:

C- By the end of this course the student should be able to:

- b1. Differentiate between the different types of thermal and damp proofing.
- b2. Differentiate between the different types of Expansion and settlement joints.
- b3. Weight the importance of building finishes.
- b4. Appraise the characteristics of different building materials
- b5. Select best finishing materials and fixation technics for floor, wall, ceiling and facades.

a- Professional and practical skills:

D- By the end of this course the student should be able to:

- c1. Draw details with appropriate materials for various interior and exterior finishing cases.
- c2. Draw details of deferent building's parts with thermal and damp proof
- c3. Draw details for Expansion and settlement joints.
- c4. Draw details to solve problem considering the use of different finishing materials side by side.

a- General and transferable skills:

E- By the end of this course the student should demonstrate fair ability to:

- d1. Manage tasks and resources
- d2. Search for information
- d3. Refer to relevant literatures

4- Course ILOs versus Program ILOs relation

See table [1]

5- Course Contents:

#	Topics	Lec.	Tut.	Total
1	Introduction and overview	2	4	6
2	Water and damp proofing	2	4	6
3	Thermal proofing	2	4	6
4	Expansion and settlement joints	2	4	6
5	Research submission	-	6	6
6	Floor Finishes: Marble/ Granite	2	4	6
7	Floor Finishes: Wooden / Ceramic / Tiles	2	4	6
8	Floor Finishes: Raised floor	2	4	6
9	Introduction to wall Finishes: Partitions / Plaster work/ wall paper	2	4	6
10	Wall Finishes: Cladding / Partitions	2	4	6
11	Wall Finishes: Curtain walls	2	4	6
12	Introduction to Ceiling Finishes: Ceiling finishes, Plaster work/ Suspended & False Ceiling/ Metal lath	2	4	6
13	Ceiling finishes: Aluminum Strips / Gypsum Tiles / Gypsum Boards / Acoustic Tiles	2	4	6
14	Ceiling finishes: Aluminum Strips / Gypsum Tiles / Gypsum Boards / Acoustic Tiles	2	4	6
15	Revision	2	4	6
Total		30	60	90

For the relation between the course contents and "Intended Learning Outcomes" (ILOs) see Appendix, table [2]

6- learning/teaching methods:

See Appendix, table [3]

7- ILOs Teaching & Assessment Method

See Appendix, table [4]

8- Weighting of assessments

- Final exam: 40%
- Year work:
 - Mid-term exam 20%
 - Assignments/Studio work 30%
 - Participation 10%

9- List of references:

1. Text Book:
Chudley, Roy & Greeno, Roger
Building Construction Handbook, 10th Ed, Routledge, NY, 2014
2. محمد أحمد عبدالله، الرسومات التنفيذية والتفاصيل المعمارية، القاهرة، 2004.
3. Students Lecture Notes & Handouts
4. Recommended Readings:
 - a) Ching, Francis D. K.; Building Construction Illustration, Wiley , 4th Ed.
 - b) McKay's, W. B. et ell; Building Construction, v. I
 - c) Ramsey, Sleeper; Architectural graphic standards. American Institute of Architects and Dennis J. Hall
 - d) Mitchell, George A.; Building Construction. v. I

10- Facilities required for teaching and learning:

- Design Studios
- White board
- Computer
- Data show for presentations
- Internet connection
- Architectural Library

Course coordinator: Associate. Prof. Dr. Sahar Morsi

Head of Department: Prof. Dr. Samir Sadek Hosny

Date: November 2017

Course Instructor:

Appendix (1)

Table [1]: Course ILOs/ Program ILOs Matrix

		Program ILOs												
		A1	A6	A12	A13	A17	B03	B05	B11	C5	C13	D5	D8	D11
Course ILOs	a1.	•			•									
	a2.		•	•		•								
	a3.		•	•		•								
	a4.	•		•										
	a5.			•	•	•								
	b1.						•	•						
	b2.						•	•						
	b3.							•	•					
	b4.								•					
	b5.						•	•	•					
	c1.									•				
	c2.										•			
	c3.										•			
	c4.										•			
	d1.											•		
	d2.												•	
	d3.													•

Table [2]: Course Content/ILO Matrix

Topic	a1	a2	a3	a4	a5	b1	b2	b3	b4	b5	c1	c2	c3	c4	d1	d2	d3
Introduction and overview	•							•									
Thermal and damp proofing		•				•						•					
Expansion and settlement joints			•				•						•				
Research submission & discussion				•	•				•	•	•				•	•	•
Floor Finishes: - Marble/ Granite				•	•			•	•	•	•						
Floor Finishes: - Wooden / Ceramic / Tiles					•				•	•	•						
Floor Finishes: - Raised floor					•				•	•	•			•			
Introduction to wall Finishes: Partitions / Plaster work/ wall paper				•	•			•	•	•	•			•			
Wall Finishes: - Cladding / Partitions					•				•	•	•			•			
Wall Finishes: Curtain walls					•				•	•	•			•			
Introduction to Ceiling finishes - Plaster work/ Suspended & False Ceiling/ Metal lath				•	•			•	•	•	•			•			
Ceiling finishes: - Aluminum Strips / Gypsum Tiles / Gypsum Boards / Acoustic Tiles					•				•	•	•			•			

Table [3]: Learning Method/ILO Matrix

Learning Method	a1	a2	a3	a4	a5	b1	b2	b3	b4	b5	c1	c2	c3	c4	d1	d2	d3
Lecture	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
Research				•	•				•	•	•			•	•	•	•
Class Work											•	•	•	•			

Table [4]: Assessment Method/ILO Matrix

Assessment Method	a1	a2	a3	a4	a5	b1	b2	b3	b4	b5	c1	c2	c3	c4	d1	d2	d3
Assignment											•	•	•	•			
Research				•	•				•	•	•			•	•	•	•
Midterm & Final Exam	•	•	•	•	•	•	•	•	•	•	•	•	•	•			