

FUE - Future University in Egypt

Faculty of Engineering and Technology Department of Architectural Engineering

Course Specifications

ARC 211: Architectural Design (1)
"Creativity"

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 Two –3 rd semester
Date of specification approval:	September 2019

A- Basic Information

Title: Architectural Design (1)	Code: ARC 211
Credit Hours:	3 Cr. Hrs.
Lectures:	2 Hrs.
Tutorial:	<u>4 Hrs.</u>
Total:	6 Hrs.
Prerequisite:	GRA 141: Graphics 1 (Credit Hours 2) and GRA 142: Graphics 2 (Credit Hours 2)

B- Professional Information

1- Catalog Course Description:

The main concern and focus of this course will be about the "Creative Thinking" design process. The design process will focus mainly on methods of generating creative ideas considering simple functional needs, simple structures for small scale buildings, simple design problem solving. The course projects may be such as: a pavilion in a public garden, a bus station, a sightseeing kiosk, a small or medium span exhibition hall, and similar ones.

2- Overall aims of the course:

The main aims of this course are to:

1. Build student's awareness of the creative design process.
2. Train student to express ideas verbally and graphically.
3. Train student to think creatively.

3- Intended learning outcomes of course (ILOs):

3.1. Program ILOs related to course:

A04 Demonstrate knowledge and understanding of the principles and theories of architectural design and planning, as process and product.

A05 Demonstrate knowledge and understanding of design problems, list clients' needs & requirements and gather relevant information.

A13 Principles of architecture design, and preparation and presentation of design projects in a variety of contexts, scales, types and degree of complexity.

A20 Demonstrate knowledge and understanding of architectural physical and computer modeling, simulation, rendering and presentation techniques.

B02 Compare, analyze and criticize different engineering problems and case studies, evaluate design alternatives and conclude results based on analytical thinking

B14 Explore and think of design forms in two and three dimensions engaging images of places and time with innovation and creativity

B15 Derive different alternative solutions and assess their expected performance to reach architectural decisions.

C01 Ability to integrate knowledge and understanding of mathematics, science, art, information technology, design and engineering concepts to design and plan buildings and to solve problems.

C04 Use different expression techniques to visualize ideas verbally and graphically, either manually or digitally.

C07 Build architectural physical and computer models

C18 Display imagination and creativity.

D03 Communicate effectively.

D06 Manage tasks and resources

D07 Search for information and adopt life-long self-learning

3.2. Course Detailed ILOs:

a- Knowledge and understanding:

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

- a1. Define the theoretical bases upon which small scale Pavilions and exhibition halls are designed.
- a2. Define the design process as a particular set of sequential operations.
- a3. Define what is meant by design problem.
- a4. Define different architectural rendering techniques.

b- Intellectual skills:

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

- b1. Use analytical thinking methods to define design problems.
- b2. Use creative thinking methods to propose different design alternatives.
- b3. Evaluate design alternatives.

c- Professional and practical skills:

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

- c1. Design architectural projects in light of spatial and aesthetic requirements.
- c2. Apply creative concepts and methods to develop his/her design.
- c3. Create diagramming and conceptual 2D & 3D sketches to express and develop his/her design.
- c4. Use proper presentation techniques to represent his/her final design proposal.
- c5. Build simple physical study models.

d- General and transferable skills:

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

- d1. Express his/her ideas by visual, graphic, written and verbal means
- d2. Discuss and defend his/her ideas.
- d3. Manage time and meet deadlines.
- d4. Search for relevant information.

4- Course ILOs versus Program ILOs relation

See Appendix, table [1]

5- Course Contents:

#	Topics	Lec.	Tut.	Tot.
1	First Project Orientation Lecture. N th dimension experience. Group work project How to form a team and how to work cooperatively	4	0	6
	Project concept discussion, small group discussion	0	2	
2	Architecture Drafting Assignment (Plans)	1	2	6
	Architecture Drafting Assignment (Sections)	1	2	
3	Architecture Drafting Assignment (Elevation)	1	2	6
	First Project submission	0	3	
4	Second Project Orientation Lecture. How to define and prepare research items, project problem investigation.	3	0	6
	How to present your research outputs. Research data review	1	2	
5	Research Presentation.	1	2	6
	1 st sketch design: model: concept + keywords (individual work)	0	3	
6	Pin up & group discussion + design development	2	1	6
	2 nd sketch design: model: concept + keywords (individual work)	0	3	
7	Pin up & group discussion + design development	2	1	6
	Final submission of 1st project and evaluation	1	2	
8	Third Project orientation lecture	4	2	6
	Research data review (group work)	0	1	
9	Research final submission (group work)	1	2	6
	1 st sketch design: concept + keywords (individual work)	0	3	
10	Pin up & group discussion + design development + lecture	2	1	6
	Design development: plans + section + elevation + 3d view	1	2	
11	2 nd sketch design: plans + section + elevation or 3d view	0	2	6
	Pin up & group discussion + design development + lecture	2	1	
12	Design development	1	2	6
	3 rd sketch design: plans + section + elevation + 3d view	0	3	
13	Pin up & group discussion + design development + lecture	2	2	6
	Design development	0	2	
14	Project finishing	0	3	6
	Project finishing	0	3	
15	Project finishing	0	3	6
	Final submission of second project	0	3	
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's work:.....	50%
▪ Submission of N th Dimension Project	5 %
▪ Submission of Drafting Project	5 %
▪ Sketch Design (1): Model + Concept	5 %
▪ Submission of 2 nd Project	5 %
▪ Sketch Design (1) & One-day Esquisse	10%
▪ Sketch Design (2) & External Esquisse	10%
▪ Sketch Design (3) & One-day Esquisse	10%
• Participation "Submission of 3 rd Project".....	10 %
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• Total	100%

9- List of references:

1. Text Book:

Unwin, Simon.:

Exercises in Architecture: Learning to Think as an Architect, Routledge; 2012.

2. Recommended Readings:

- Neufert, E.;; Architects' Data; The Handbook of Building Types, Third Edition, Blackwell Publishing, 2002, The Alden Group Ltd., Oxford & Northampton, metric edition.
- Ramsey, C.; Ray, J. & Hoke, Jr.: *Architectural Graphic Standards*, Tenth Edition - metric, AIA. John Wiley & Sons Inc., 2000, NJ. USA
- Chiara, J.: *Time Saver Standards for Architectural Design*, Most recent metric version
- Francis D.K. Ching: Architecture: Form, Space and Order.
- Architectural Magazines and Projects
- Periodicals & Web sites:
 - Architecture
 - Architectural Record
 - Architectural Review
 - Architecture d'aujourd'hui
 - www.architecturalrecord.com
 - www.greatbuildings.com

10- Facilities required for teaching and learning:

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

Course coordinator: Prof. Dr. Samir Sadek Hosny

Head of Department: Prof. Dr. Samir Sadek Hosny

Date: September 2019

Course Instructor:

Appendix (1)

Table [1]: Course ILOs/ Program ILOs Matrix

		Program ILOs													
		A04	A05	A13	A20	B02	B14	B15	C01	C04	C07	C18	D03	D06	D07
Course ILOs	a1.	•		•											
	a2.	•		•											
	a3.		•												
	a4.				•										
	b1.					•									
	b2.						•								
	b3.							•							
	c1.								•						
	c2.											•			
	c3.									•					
	c4.									•					
	c5.										•				
	d1.												•		
	d2.												•		
	d3.													•	
	d4.														•

Table [2]: Course Content/ILO Matrix

Topic	a1	a2	a3	a4	b1	b2	b3	c1	c2	c3	c4	c5	d1	d2	d3	d4
First Project Orientation Lecture. 4 th dimension experience. Group work project How to form a team and how to work cooperatively		•	•		•			•	•	•	•		•			
Project concept discussion, small group discussion		•	•			•	•	•	•	•	•		•	•	•	
Architecture Drafting				•						•	•					
1 st Project Orientation Lec. How to present your research outputs	•		•								•		•			•
Research Presentation	•										•		•	•	•	•
design sketches (1&2)	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
Pin up & group discussion + design development	•	•	•		•	•	•	•	•	•	•	•	•	•	•	
2 nd Project orientation Lec. Research Presentation	•		•		•	•							•	•	•	•
design sketches (1,2&3)	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
Pin up & group discussion + design development	•	•	•		•	•	•	•	•	•	•	•	•	•	•	
3 rd Project orientation Lec. Third Project submittal (One day sketch Design)			•	•	•	•		•	•	•	•		•		•	•

Table [3]: Teaching Method/ILO Matrix

Teaching Method	a1	a2	a3	a4	b1	b2	b3	c1	c2	c3	c4	c5	d1	d2	d3	d4
Interactive Lecture	•	•	•		•	•			•							
One to One Discussion	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
Small Groups Discussion		•	•		•	•	•	•	•	•	•		•	•		
Public Group Discussion	•	•	•	•	•	•	•	•	•	•	•		•	•		
Physical Maquette				•							•	•				
Search for Data (Self-study)	•				•		•								•	•
Research Presentation											•		•	•	•	
Sketch Designs & Projects			•	•	•	•	•	•	•	•	•		•		•	

Table [4]: Assessment Method/ILO Matrix and Final Exam Blueprint

Assessment Method	Mark	a1	a2	a3	a4	b1	b2	b3	c1	c2	c3	c4	c5	d1	d2	d3	d4
Research Document	10	•		•		•		•						•	•	•	•
Presentation/Participation	10	•	•	•		•	•	•						•	•	•	
Sketch Designs & Projects & Model	40	•	•	•	•	•	•	•	•	•	•	•	•	•		•	
Final exam	40	•		•			•		•	•	•	•		•		•	
Final Exam Mark Distribution		30%				20%			40%					10%			