

FUE - Future University in Egypt

Faculty of Engineering and Technology Department of Architectural Engineering

Course Specifications

ARC 311: Architectural Design (3)

"Site Considerations"

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 level/Semester:	Level Three –5 th semester
Date of specification approval:	September 2019

A- Basic Information

Title: Architectural Design (3)	Code: ARC 311
Credit Hours:	4 Cr. Hrs.
Lectures:	2 Hrs.
Tutorial:	<u>6 Hrs.</u>
Total:	8 Hrs.
Prerequisite: ARC 212: Architectural Design (2)	

B- Professional Information

1- Catalog Course Description:

The main concern and focus of this course will be about the "Environmental/Site Considerations" affecting the design decisions. The course will address urban projects to introduce urban spaces and landscape design. The course will also emphasize the importance of the setting: environmental and physical factors in the design process, introduction and experimentation with current trends and concepts through studio and design assignments. Course projects may be such as: Hostel, Youth Camp, Touristic Village, Gated Residential Communities, and other similar ones.

2- Overall aims of the course:

The main aims of this course are to:

1. Enhance student's awareness of creative design process within a set of moderate site limitations.
2. Train student to evaluate and compare between different solutions.
3. Encourage student to spell out thoughts and ideas.

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

A23 Demonstrate knowledge and understanding of the principles of sustainable design and climatic considerations in addition to the different elements of the natural environment, different energy types, appropriate environmental control techniques and different technical installations in buildings.

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

B07 Solve architectural problems often on the basis of limited and possibly contradicting information

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

B17 Integrate relationship of structure, building materials, and construction elements into design process.

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

C17 Demonstrate professional competence in developing innovative and appropriate solutions of architectural and urban problems

C18 Display imagination and creativity.

C19 Respect all alternative solutions; changes in original plan of the project, differences in style, culture, experience and treat others with respect

C22 Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community

D02 Work under stressful environments and within constraints of time and budget

D03 Communicate effectively

D06 Manage tasks and resources

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

D09 Refer to relevant literatures

3.2. Intended learning outcomes of course (ILOs):

a- Knowledge and understanding:

By Completing this course successfully the student should be able to:

a1. Explain architectural design and planning as process and product.

a2. Analyze climatic considerations and natural environment in design

a3. Recognize design problems, reporting clients' needs & requirements.

a4. Gather relevant information.

b- Intellectual skills:

By Completing this course successfully the student should be able to:

- b1. Critically Analyze different case studies and design alternatives achieving results.
- b2. Develop solution of an architectural problem incorporating different user and site considerations
- b3. Develop forms in two and three dimensions engaging images of places and time with innovation and creativity.
- b4. Develop project alternatives and evaluate their expected performance.
- b5. Consider appropriate materials, structural systems and construction elements in the design process.

c- Professional and practical skills:

By Completing this course successfully the student should be able to:

- c1. Use knowledge and understating of mathematics, science, art, information technology, design and engineering concepts to design and plan buildings and to solve problems.
- c2. Develop drawings representing project using different expression techniques to visualize ideas verbally and graphically, either manually or digitally.
- c3. Develop innovative and appropriate solutions for an architectural and urban problem.
- c4. Encourage students to think creatively and imagine their projects
- c5. Consider design alternative solutions, design changes, and differences in styles, opinions and evaluations based on others values, culture and experiences
- c6. Develop a project for FUE community, a hostel for FUE students and staff.

d- General and transferable skills:

By Completing this course successfully the student should be able to:

- d1. Present information effectively.
- d2. Communicate ideas commendably.
- d3. Manage design and presentation tasks.
- d4. Review literature and information.
- d5. Develop project according to schedule of requirements and submissions.
- d6. Refer to relevant literature.

4- Course ILOs versus Program ILOs relation

See table [1]

5- Course Contents:

#	Topics	Lec.	Tut.	Total
1	Introduction	8	-	8
2	Develop awareness of site considerations and urban design needs as applied to medium scale projects	8	18	26
3	Express ideas with self-confidence and manage teamwork	6	6	12
4	Enhance design process practice	-	10	10
5	Organize and articulate form and urban space that satisfy functional, environmental, and aesthetic requirements	4	22	26
6	Establish design and evaluation criteria	4	18	22
7	Test different design alternatives	-	8	8
8	Decide upon the most satisfying solution	-	8	8
Total		30	90	120

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

- Year's work:30%
- Submission of Final Project.....20 %
- Final exam:.....40%
- Participation.....10 %

9. List of references:

1. Text Book:

James A. LaGro Jr., **Site Analysis: A Contextual Approach to Sustainable Land Planning and Site Design**, 2007

2. Recommended Readings:

- 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: Dr. Samir Sadek Hosny

Date: September 2019

Course Instructor:

Appendix

Table [1]: Course ILOs/ Program ILOs Matrix

		Program ILOs																			
		A04	A05	A23	B02	B07	B14	B15	B17	C01	C04	C17	C18	C19	C22	D03	D02	D06	D07	D09	
Course ILOs	a1.	•																			
	a2.			•																	
	a3.		•																		
	a4.		•																		
	b1.				•																
	b2.					•															
	b3.						•														
	b4.							•													
	b5.								•												
	c1.									•											
	c2.										•										
	c3.											•									
	c4.												•								
	c5.													•							
	c6.														•						
	d1.															•					
	d2.																				
	d3.																	•			
d4.																			•		
d5.																	•				
d6.																				•	

Table [2]: Course Content/ILO Matrix

Topic	a1	a2	a3	a4	b1	b2	b3	b4	b5	c1	c2	c3	c4	c5	c6	d1	d2	d3	d4	d5	d6
Topic #2		•		•	•	•									•				•		
Topic #3	•												•			•	•	•		•	
Topic #4									•												•
Topic #5							•	•		•	•	•									
Topic #6			•					•													
Topic #7					•			•						•							
Topic #8					•																

Table [3]: learning/teaching Method/ILO Matrix

Topic	a1	a2	a3	a4	b1	b2	b3	b4	b5	c1	c2	c3	c4	c5	c6	d1	d2	d3	d4	d5	d6
Interactive Lecture		•																			
Project	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Physical Model						•	•			•											
Research	•		•		•											•			•		•
Group Discussion	•				•	•		•	•			•				•	•				

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

Topic	Mark	a1	a2	a3	a4	b1	b2	b3	b4	b5	c1	c2	c3	c4	c5	c6	d1	d2	d3	d4	d5	d6
Year's work	30%	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Final Project	20%	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Participation	10%														•		•	•				
Final Exam	40%	•	•	•			•	•		•	•	•	•	•	•		•		•			
Final Exam Mark Distribution		20%				30%					40%						10%					