Arab Academy for Science, Technology & Maritime Transport
College of Engineering & Technology
Architectural Engineering and Environmental Design Department

Serial No. 1

University/Academy:	Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute:	College of Engineering & Technology
Program:	B.Sc. Architectural Engineering and Environmental Design

Form no. (12): **Course Specification**

1- Course Data

Course Code: **AR 313**	Course Title: **Architectural Design 3**		Academic Year/Level: **3**rd year / **6**th semester
Specialization: **Architecture**	No. of Instructional Units		Prerequisite
	Credit **4** Lecture **2**	Tutorial **6**	**AR312**

2- Course Aim

This course targets designing projects at an intermediate level, focusing on the ways in which the nature of **structural systems and building materials** affect and influence architectural design. Students begin by researching basic structural systems. The students should be able to select building materials as well as design projects with sound structural systems, to satisfy the requirements of building programs as an integral part of the design

The course aims to:
• Deepen the student's awareness of structural systems and building materials and their role in stimulating forms and design ideas enabling the translation of concepts into built form.
• Allow the student to enhance and express their knowledge of the different structure systems used in buildings.
• Assist the student to develop his/her concept into a structural form.

3- Intended Learning Outcomes

a- Knowledge and Understanding	**Through knowledge and understanding, students will be able to:** • Integrate histories and theories of physical and cultural contexts to inform their design process.(K1) • Select appropriate structural systems within an integrated context. (K5) • Associate structural systems and building materials with the requirements of programs.
b- Intellectual Skills	**Through intellectual skills, students will be able to:** • Proceed with the design process; preparing and developing briefs recognising user needs, space requirements and site conditions.(I4) • Analyze problems, find alternatives and choose the most appropriate solutions. (I6) • Modify conceptualize and develop the design of three-dimensional objects and spaces.(I1) • Create comprehensive architectural designs integrating research, analysis and context to include social, environmental, aesthetic and technical requirements.(I2)
c- Professional Skills	**Through professional and practical skills, students will be able to:** • Consider the impact of legislation, codes of practice and health & safety on design • Prepare and present architectural arguments and illustrative materials in a variety of written, graphic and oral formats and with a high level of competence. As well as producing hand-made 3D models. (P2) • Use appropriate construction techniques and materials to specify and implement different designs (P4). • Generate appropriate designs for societal problems and manage their working practices, independent and collaborative. (P1, P5)

d- General Skills	Through general and transferable skills, students will be able to:
	• Work in an interdisciplinary environment and collaborate with others as part of a team.(G1)
	• Gain the ability to exercise initiative, original thought, refelct upon own ideas and relate to the work of others within a system of personal values. (G3)
	• Independently seek knowledge, set aims, targets, objectives and plan to meet them with a deadline (time management).(G2)
	• Be aware of, listen to and critically respond to the opinions and values of others. (G7)
	• Appreciate and understand principles of building technology, sustainable design, theories and practice, and construction methods.

4- Course Content

Week No.1 Introduction, Project definition and research: Students are asked to collect the appropriate data concerning project type and the related structural problem providing analytical examples. Site analysis to be conducted according to the assigned site.

Week No.2 Data Presentation, Data Analysis& site analysis: Students are asked to synthesize and present their analysis.

Week No.3 Submission of research. Conceptual Design, Sketch design: Students are asked to think of the building, adjoined services and express their ideas through various diagrams in correspondence with an appropriate structural system and form.

Week No.4 A conceptual design is to be presented in response to the project's data and site analysis.

Week No.5 Design Development.

Week No.6 Design Development.

Week No.7 Submission of project (through well presented architectural drawings).

Week No.8 Introduction, Project definition and research: Students are asked to collect the appropriate data concerning project type and the related structural problem providing analytical examples. Site analysis to be conducted according to the assigned site.

Week No.9 Data Presentation, Data Analysis& site analysis: Students are asked to synthesize and present their analysis.

Week No.10 Submission of research. Conceptual Design, Design Development: Students are asked to think and express their ideas and solve the given structural problems through architectural drawings.

Week No.11 Design Development: Students are asked to express the proposed structural system and form through architectural drawings.

Week No.12 Design Development.

Week No.13 Submission of project (through well presented architectural drawings).

Week No.14 Finalisation of projects (Auto Cad)

Week No.15 Final Presentation and Submission: Students are asked to submit projects for evaluation.

5- Teaching and Learning Methods

The course comprises a combination of:
Lectures, class activities, information collection, analytical examples, research assignments and project work.

6-Teaching and Learning Methods for Students with Special Needs

- Consulting with lecturer during office hours.
- Consulting with teaching assistant during office hours.
- Private sessions for redelivering the lecture contents.
- For handicapped accessibility, please refer to program specification.

7- Student Assessment

Students must present: Two projects per semester, for each project students must present at least 2 sketches, a two-day duration sketch design and a six-hour exam.

Students have to present a portfolio during the final jury which will demonstrate the learning outcomes throughout the academic semester and a selection of previous phases of the projects in appropriate form of documentation and presentation. Methods of documentation may include: drawings; photographs; multi-media material; quantitative & qualitative data; 3D models or prototypes; web-based material. All materials and work should be recorded in graphic form and presented to a standard suitable for assessment purposes.

Asses No.	Procedures used		Start Week No.	Subm. Week No.	Weighting of Asses.
	Type	To assess			
1	Research	Knowledge and transferable skills	1	3	5%
2	studio design work	Knowledge and practical skills	4	7	5%
3	Project evaluation	All skills	7	7	15%
4	One day project	Knowledge and intellectual skills	7	7	5%
5	Research	Knowledge and transferable skills	8	10	5%
6	studio design work	Knowledge and practical skills	10	13	5%
7	One day project	Knowledge and intellectual skills	12	12	5%
8	Project evaluation	All skills	13	13	15%
9	Jury	All skills	14	15	30%
10	Drawing exam.	Knowledge and intellectual skills Practical skills			10%
Total					100%

8- List of References:

a- **Course Notes**	Notes are handed out to the students throughout the semester.
b- **Required Books** (Textbooks)	• BAKER Geoffrey H., *Design Strategies in Architecture: An Approach to the Analysis of Form*. 2nd Ed., London, Van Nostrand Reinhold, 1996.
c- **Recommended Books**	• CALLENDER John Hancock, *Time Saver Standards for Standards For Architectural Design Data.* 6th ed., McGraw Hill, Singapore, 1982. • NEUFERT Ernst, *Architect's Data.* 2nd Ed., Blackwell, Oxford, 1980. • ROBBIN Tony, *Engineering A New Architecture*, Newhaven Yale Univ. Pr., 1996. • ROSEN Harold J, *Architectural Materials For Construction*, McGraw Hill, N.Y, 1996. • MOORE Fuller, *Understanding Structures*, McGraw Hill, 1998.
d- **Periodicals, Web Sites, etc.**	N/A