



Course Specifications:
ARE7211 - Computer Applications in Architecture 1



1. Basic Information

Program Title	Architectural Engineering
Department offering the Program	Architectural Engineering
Department Responsible for the Course	Architectural Engineering
Course Title	Computer Applications in Architecture 1
Course Code	ARE7211
Year/ Level	Second Year - First Term
Specialization	Minor
Authorization date of course specification	2005

Teaching Hours	Lectures	Tutorial	Practical
	2	2	0

2. Course Attributes:

No.	Attribute
05	Use the techniques, skills, and appropriate engineering tools, necessary for engineering practice and project management.
09	Demonstrate knowledge of contemporary engineering issues.
11	Engage in self- and life- long learning.

3. Intended Learning Outcomes (ILOs):

a. Knowledge and Understanding:

No.	Knowledge and Understanding
A ₀₂	Basics of information and communication technology (ICT).
A ₁₃	Principles of architectural design, and the preparation and presentations of design projects in a variety of contexts, scales, types and degree of complexity.
A ₂₀	Physical modeling, multi-dimensional visualization, multimedia applications, and computer-aided design.

b. Intellectual Skills

No.	Intellectual Skills
B ₀₃	Think in a creative and innovative way in problem solving and design.
B ₀₄	Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.
B ₀₈	Select and appraise appropriate ICT tools to a variety of engineering problems.

c. Professional Skills

No.	Professional Skills
C ₀₆	Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs.



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C ₁₃	Produce and present architectural, urban design, and planning projects using an appropriate range of media and design-based software.
C ₁₄	Produce professional workshop and technical drawings using traditional drawing and computer-aided drawings' techniques.

d. General Skills

No.	General Skills
D ₀₁	Collaborate effectively within multidisciplinary team.
D ₀₂	Work in stressful environment and within constraints.
D ₀₃	Communicate effectively.
D ₀₄	Demonstrate efficient IT capabilities.
D ₀₆	Manage tasks and resources efficiently.
D ₀₇	Search for information and adopt life-long self learning.

4. Course Contents:

No.	Topics
1	Course Orientation.
2	Systematic Design.
3	Pattern Language.
4	Prevailing operating system.
5	Trainings (AutoCAD 2010, 2012).
6	Architectural drawing programs.
7	Applications on architectural-related cases.

5. Teaching and Learning Methods:

5.1 Normal Students:

No.	Teaching Method	Choice
1	Lectures	√
2	Discussion Sessions	√
3	Information Collection from Different Sources	×
4	Practical	×
5	Research Assignment	√
6	Field Visits	×
7	Case Studies	×
8	Smart Sessions	√

5.2 Disable Students:

No.	Teaching Method	Reason
1	Presentation of the course in digital material.	Better access any time.
2	Web communication with students	Better communication with certain cases.



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3	Asking small groups to do assignments; each composed of low, medium, and high performance students.	Knowledge and skills transfer among different levels of students.
4	Asking disabled students to do PowerPoint/Poster presentations.	Encouraging disabled students' engagement and interaction.

5.3 Excellent Students:

No.	Teaching Method	Reason
1	Developing course materials gradually to allow excellent students to receive teaching that meets their needs	Excellent students rely on excellent teaching
2	Encouraging students to participate in competitions with rewarded bonus marks.	Increasing excellent students' competitiveness

6. Student Assessment:

6.1 Student Assessment Methods:

No.	Assessment Method	Choice	ILOs
1	Mid Term Examination	√	B ₀₃ , B ₀₄ , D ₀₁ , D ₀₂ , D ₀₃ , D ₀₄ .
2	Oral Examination	×	-
3	Practical Examination	×	-
4	Semester work	√	A ₀₂ , A ₁₃ , A ₂₀ , C ₀₆ , C ₁₃ , C ₁₄ , D ₀₃ , D ₀₆ , D ₀₇ .
5	Other types of assessment	×	-
6	Final Term Examination	√	B ₀₈ , D ₀₃ , D ₀₄ , D ₀₆ , D ₀₇ .

6.2 Assessment Schedule:

No.	Assessment Method	Weeks
1	Mid Term Examination	08 th
2	Oral Examination	×
3	Practical Examination	×
4	Semester work	2 nd -7 th ; 09 th - 14 th
5	Other types of assessment	×
6	Final Term Examination	15 th

6.3 Weighting of Assessments:

No.	Assessment Method	Weights
1	Mid Term Examination	10%
2	Oral Examination	-
3	Practical Examination	-
4	Semester work	30%
5	Other types of assessment	-



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6	Final Term Examination	60%
Total		100%

7. List of References

No.	Reference List
1	Books, Notes on the synthesis of form
2	Books, Design methods in architecture
3	Books, A pattern language
4	Notes, The course notes are to be prepared by groups of students after constant reviewing by the course coordinator.
5	Notes
6	Websites, http://www.designmethods.com

8. Facilities Required for Teaching and Learning:

No.	Facility	Choice
1	Lecture Classroom	√
2	Lab Facilities	√
3	White Board	√
4	Data Show System	√
5	Visualizer	×
6	Smart Board	√

No.	Facility	Choice
7	Wireless Board	×
8	Presenter	×
9	Sound System	√
10	Wire-Internet	√
11	Wireless Internet	√
12	...	-

9. Matrix of Knowledge and Skills of the Course:

No.	Topic	Attributes	Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
1	Course Orientation.	05	A ₀₂	B ₀₃	-	-
2	Systematic Design.	05	A ₁₃	B ₀₄	C ₀₆ , C ₁₃	D ₀₁ , D ₀₂ , D ₀₃
3	Pattern Language.	09	A ₁₃	B ₀₃	C ₁₃ , C ₁₄	D ₀₄
4	Prevailing operating system.	09	A ₂₀	-	C ₁₄	-
5	Trainings (AutoCAD 2010, 2012).	11	A ₂₀	B ₀₈	-	D ₀₆
6	Architectural drawing programs.	11	-	B ₀₈	-	D ₀₆
7	Applications on architectural-related cases.	11	A ₂₀	B ₀₈	-	D ₀₇

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Date of Approval: