Course Specifications:
ARE7226 - Computer Applications in Architecture 2

1. Basic Information

Program Tile	Architectural Engineering
Department offering the Program	Architectural Engineering
Department Responsible for the Course	Architectural Engineering
Course Title	Computer Applications in Architecture 2
Course Code	ARE7226
Year/ Level	Second Year - Second 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.
13	Demonstrate investigative skills, attention to details, and visualize/conceptualize skills

3. Intended Learning Outcomes (ILOs):

a. Knowledge and Understanding:

No.	Knowledge and Understanding
A_{02}	Basics of information and communication technology (ICT).
A_{20}	Physical modeling, multi-dimensional visualization, multimedia applications, and computer-aided design.

b. Intellectual Skills

No.	Intellectual Skills
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.
B_{14}	Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration of design.

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.
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_{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	Study the series of methods followed by the pioneers of CAAD during the sixties of 20 century.
3	Study the series of methods that were applied during the seventies and the eighties of the 20th century.
4	Study the expert system model.
5	Trainings (3d Max).
6	Architectural drawing programs and 3d models.
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.
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_{04}, D_{01}, D_{03}, D_{04}.
2	Oral Examination	×	-
3	Practical Examination	×	-
4	Semester work	√	A_{02}, 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}, B_{14}, 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	-
6	Final Term Examination	60%
Total		100%

7. List of References

No.	Reference List
1	Books, Computerized Approaches to Circulation
2	Books, Computer Aided Design
3	Books, Computer-Aided Techniques for Synthesis of Layout and form with Respect to Circulation
4	The course notes are to be prepared by groups of students after constant reviewing by the course coordinator
5	Notes
6	Websites, Architects Journal
7	Websites, Building Science
8	Manuals, Autocad

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_{04}	-	-
2	Study the series of methods followed by the pioneers of CAAD during the sixties of 20 century.	05	A_{02}	B_{04}	C_{06}, C_{13}	D_{01}, D_{03}
3	Study the series of methods that were applied during the seventies and the eighties of the 20th century.	09	A_{02}	B_{08}	C_{13}, C_{14}	D_{04}
4	Study the expert system model.	09	A_{20}	-	C_{14}	-
5	Trainings (3d Max).	11	A_{20}	B_{14}	-	D_{06}
6	Architectural drawing programs and 3d models.	11	-	B_{14}	-	D_{06}
7	Applications on architectural-related cases.	13	A_{20}	B_{14}	-	D_{07}

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Date of Approval: