

King Fahd University of Petroleum & Minerals
College of Environmental Design
Department of Architecture

ARC 305: DESIGN STUDIO V

Intelligent Design Studio (IDS)

Spring Semester 2007-2008 (072)

Sat., Mon., & Wed.: 1:10- 5:00 PM.

Instructor: Yahya J. Al-Najjar

Teaching Assistant: Omar Al-Mahdi

COURSE OUTLINE

This design studio continues in the solving process with programs of greater complexity. Primary emphasis is to be on the integration of systems in building design. In addition, this course provides a stronger exploration of the building envelope in terms of form, massing, fenestration and materials. Building types will be suggested in urban context. Three projects combination will be given.

COURSE OBJECTIVES

ARC 305 continues to emphasize the analytical approach to explore ideas and methods for analyzing and solving architectural problems of increasing levels of complexity and scale. The building types explored will be more complex functionally as well as spatially and technically. Additionally, the sites and contexts for the projects will be challenging. Special emphasis will be placed on the building envelope in terms of Form, Massing, Articulation and Facade Organization. Attention will be oriented towards the integration of related architectural systems: Structural, Mechanical and Construction.

A corollary, the main goal of the studio is to apply Information Technology to the design and exploration of the studio projects. Our specific objectives are to use these technologies initially as tools of visualization and representation that are an extension of, and complement to, conventional paper based modes of design exploration but, subsequently as the principal means of design thinking.

Specific IT applications that the course covers include:

- Computer methods of modelling space, light, color, texture, and environment.
- Computer animation and simulation including different forms of transformation including virtual reality.
- Digital presentation concepts and methods in project design.

SUGGESTED COURSE CONTENTS

Suggested building types preferably in an urban context:

- Housing -urban density.
- Educational park.
- Medical facility.
- Municipal buildings.
- Commercial/office buildings.
- Museum/cultural complex.
- Transport terminal.
- Restoration of an existing traditional buildings.

COURSE DESCRIPTION

The efforts in this design studio are to reinforce and build upon your past design experience; and at the same time to create opportunities for you to prepare for senior project work.

The complexity and nature of design projects, as well as the digital methods of analysis and presentation will challenge and test your ability to organize, analyze, think and design from vaguely defined set of parameters and requirements. The content and theme of the semester will be based on programming, analyzing and designing of projects which are functionally complex. Such problems will demand orientation on problem identification, efficient utilization of resources and appropriate interface with contextual activities.

You are heading to achieve maturity as a designer; this will be supported through very keen interest, Self evaluation and self critique, study and evaluation of your peers work, following diligently the requirements set for the studio, and monitoring your own efficiency as a designer through time management procedures. As an enrichment of individual learning, the search for self organization, sharing of information, healthy competition with your peers; are especially important opportunities and responsibilities.

You are to note the following as very important issues to look into:

1. Problem identification and programming

Research, analysis, and ordering of information to identify the nature and opportunities of an unfamiliar, ambiguous task - a problem seeking effort.

2. Site Potentials

- Context - designing for interconnected contextual systems in evolution and assimilation.
- Circulation - response to vehicular, pedestrian and public transportation patterns.

3. Building Systems

- Space planning and design of buildings that creatively accommodate their program with efficient resource utilization.
- Activities grouping and zoning on site.
- Thorough analysis of activity interface in space and time.
- Design for multiple users and complex functional types.
- Envelope and structural system.
- Demonstration of effective use of materials.
- Environmental control; mechanical system, lighting system, and design.
- responsive to climatic context.

INFORMATION TECHNOLOGY HARDWARE & SOFTWARE:

Software Systems

- State of the art computer graphics modelling and animation programs including form•Z, 3D Studio Max, Light Space, ... etc.
- Current versions of image and video post-processing software such as Adobe Premier, Adobe Photoshop, Microsoft Media Player, and Quick Time.

Hardware Systems

- A well- equipped Intelligent Design Studio with current computers connected to the department and university intranet and network systems.
- State of the Art input output devices, including digitizers, scanners, printers, plotters, and mass storage systems linked to the computers via a LAN or Internet setup.
- A computer and video projection setup in the laboratory for instructions.

STUDIO ACTIVITY SCHEDULE

Three projects will be given during the semester as follows:

Project 1: Design analysis and presentation for an architectural project

Assigned: Mon. Feb. 18, 2008

Jury: Wed. March 19, 2008

Project 2: 7-Cube House

Assigned: Sat. March 22, 2008

Jury: Wed. April 09, 2008

Project 3: Design Project (will be tetermined later)

Assigned: Sat. April 19, 2008

Jury: Mon. June 2, 2008

The three projects will be juried by a committee of the design faculty members, along with the studio instructors, and amount up to 85% of the total grade. The remaining 15% will be allocated for attendance, participation in discussions and work attitude. The weight of the jury evaluation will account for 30% of the grade of each project.

Project 1	25	%
Project 2	15	%
Project 3	45	%
Attendance	10	%
Personal Quality	5	%
TOTAL	100	%

ATTENDANCE

Students are required to attend all studios promptly and be present, alert, and participate fully at all times. Two un-excused absences will result in a warning letter to the student requiring him to confer with the Department Chairman. A total of nine un-excused absences Will result a DN grade, according to University regulations. Students will be expected to work until the end of the studio sessions. ***One half of a grade point will be deducted for every late attendance; one grade point for every un-excused absence.***

STUDIO WORK

All work should be done in the studio. Within regular studio hours there will be no visitors, radio, food, drink, or smoking. Prayer times will be observed. The regulations of the ARC Intelligent Design Studio must be carefully followed.

TOPICS FOR WEEKLY LECTURES

A weekly lecturing series will be conducted to cover the following topics that are closely related to the course contents and objectives:

- Digital methods of analysis and design; 2D, 3D, modelling, walkthroughs, animation, virtual reality, ... etc.
- Digital multimedia and presentation techniques; PowerPoint, KeyNote, Video-clip visualization, ... etc.
- Visual analysis of building components in three dimensional space.
- Programming; program development, analysis, and interpretation.
- Site considerations; potentials, contextual systems, and circulation patterns.
- Design process; concept generating criteria, conceptual analysis, evaluation and criticism.
- Functional analysis; zoning, and spatial organization.
- Environmental control; orientation, energy efficiency in buildings, natural lighting.
- Integration of building systems; structural, mechanical, and lighting.

GOOD LUCK.