ARCHITECTURE 205b

Architecture for Engineers

University of Southern California Department of Architecture

SYLLABUS

Spring 2012

James Tyler, Adjunct Professor – Coordinator
Undergraduate Building Science Program
ARCHITECTURE 205abl
OVERVIEW

Each semester the students are responsible for completing a series of projects to move on to the Architecture 405 classes. Students are required to develop an understanding of basic design in architecture. Although they are primarily trained in engineering and the pragmatic aspects of that study, they learn to develop confidence in evaluating good architecture. To accomplish this they need to walk through a process of fundamental design understanding and graduate to the application of this knowledge into the design and construction of a building.

Fall Semester guides them through lettering, composition, color, texture, material, space and construction. Mini assignments that teach them about lettering, sketching and photography assist them along the way to prepare them for their final assignment of the semester, which is a medium sized building type.

Spring Semester is consumed with the evaluation of a program that outlines the design of a building. The student is to do research on the building type, ie: Church, School or Office Building to prepare them for a full scale design of that particular building. Depending on the magnitude of the building type there will be one or two building studies during this semester. The student must prepare to design all aspects of the construction. This will include architectural, structural, mechanical and electrical layouts in schematic form to provide a complete theoretical study of a certain building type. The student is to provide the following for verbal and visual presentation to members of the school faculty.

the presentation will require the following:
- Site Plan
- Floor Plans
- Elevations
- Scale Model

There are no exams in the course. All work is visual. Homework is done by way of research and sketches that are reviewed by the instructor in class. Critiques are given to the student and they then re-work their concept for additional review until the student and instructor believe the project is an acceptable scheme to complete finished drawings and model. Grades are given at the completion of each project.

James Tyler, Instructor
BUILDING SCIENCE
Architecture for Engineers

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This is an interdisciplinary program with the School of Engineering and was established in the 1970s; the home base is the School of Civil and Environmental Engineering Studies. The three year program familiarizes the student with the disciplines of architecture, landscape architecture, planning, structural, mechanical and electrical engineering that are utilized to create the built environment for our society. It introduces the process of coordinating all of these aspects for the engineering student to help comprehend the nature of beauty in our surroundings. The goal is to create an appreciation and understanding of how and why this is established. The primary objective is to teach the student the intrinsic nature of architecture developed through principles based on clarity of construction.

Field trips and guest lecturers enhance the study by providing close contact with basic construction methodology. Each student is to go through the program and experience an appreciation for the arts and other senses that help them reinforce their understanding of the craft of building.

Students are required to participate in six semesters (two per year) of intensive afternoon design labs which are similar to the five year studios taken by architecture students; each class is in sequence and must be adapted to their knowledge of the preceding year. Each course, which provides four (4) units of credit, is an evolutionary process of developing prior information for refining their intellect toward the proper method of solving problems in a rational way. Each year is taught to assure continuity; students continue to perpetuate knowledge of the past year to integrate into their new projects. From time to time, projects of the previous class may be used as typology studies for utilizing newly gained information gained from the present year's study.

The Three Year Program will cover the following areas best suited to fit the needs of each student:

Architecture 205abl (each category of study is complimented with lectures)

MATERIALS
- Color
- Texture
- Pattern
- Form

DRAWING
- Pencil
- Ink
- Computer
- Presentation

VISUAL
- Axonometric
- Perspectives

FORCES
- Water
- Sound
- Sun
- Gravity (Horizontal and Vertical)

HISTORY
- Ancient and Modern Building Systems

DESIGN
- Preliminary - Design Development - Models - Workings Drawings - Construction
Required Drawing Equipment

Adjustable Triangle  
Scale (Architectural and Engineering)  
Mechanical Pencil (should have: H, 2H, 3H and F lead)  
Ink Pens - Rotring or Rapidograph  
Sketching Pen or Pencil  
Paper - Clearprint No. 1000 HP 8 1/2" by 11" size  
Pencil Pointer  
Eraser  
Erasing Shield  
Tracing Paper - Wesketch

Reference Books

Architectural Graphics - Frank Ching  
Building Construction - F. Ching
Architecture 205b
Spring Semester Schedule

**Project #1  ** *Historical Building*

First Week  Review Project in Library & determine your building / structure to study.
Second Week Outline Architect/Engineer Profile and his Work
Third Week Drawings and Sketches of Building, Photo Reproductions
Fourth Week Prepare Presentation and Drawings.

**Project #2  ** *Case Study House*

Fifth Week Determine Case Study House to Evaluate (see outline)
Sixth Week Floor Plan(s) in pencil and sketch paper
Seventh Week Framing Plans and Elevations with pencil and paper
Eighth Week Model preparation and Final Review w/Model & Plans
   Note: All drawings and model to be 1/8"=1'-0" scale (in lieu of 1/4")

**Project #3  ** *Construction Study (Wood, Masonry and Concrete)*

Ninth Week Evaluation of Building Types and Introduction of Project #4
Tenth Week Semester Break.............

**Project #4  ** *Major Building Design*

Eleventh Week Review Program Criteria for Building Type: Wood, Steel or Concrete
Twelfth Week Student to determine building type of construction for new project
Thirteenth Wk. Schematic Design of Site
Fourteenth Wk. Preliminary Floor Plans and Elevations
Fifteenth Wk. Framing System Drawings and Details
Sixteenth Wk. Finalize Drawings and Model
   Note: All Drawings and Model to be 1/8"=1'-0"
ARCHITECTURE 205

Presentation Boards and Layout

All presentation for 20”x30” boards (when required) will be designed and presented in the following manner:

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20"

30"

PROJECT TITLE    Student Name
Architecture 205a  Instructor
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The title block can be done with computer graphics or press on letters. If you desire you can print the title free hand, but your printing must be very good.

Each student has the option of drawing on the board or doing a paste up system and having your drawings reproduced at Blair Graphics, Universal Reprographics or the campus print store. All drawings must be reviewed by the Instructor prior to presentation to review quality of drawings and/or photographic material. The printing companies will block out your drawing to fit the 20x30 format. They will provide an extra two inches all around to allow you to wrap your drawing around the board.

All presentation can be done in black and white; if you desire to use color you can glue on photos or colored reproductions to better express the character of your proposal.

The layout above is shown vertically, however you may do your drawings horizontally, but the title block shall remain the same on the short (20”) side. For the most part presentation should be done vertically unless circumstances dictate otherwise....... GOOD LUCK!

James Tyler, Instructor