

**ARCH 82 Course Outline as of Spring 2010****CATALOG INFORMATION**

Dept and Nbr: ARCH 82 Title: NON-RES WORKING DRAWINGS

Full Title: Non-Residential Working Drawings

Last Reviewed: 11/20/2006

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	3.00	Lab Scheduled	3.00	10	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: CONS 80C

**Catalog Description:**

The development of working drawings for a complex non-residential building from preliminary data generated by student, including site analysis and site development, programming and adjacency diagrams, building planning, preliminary design, design development, and production of working drawings to meet Building Code requirements. Students will select appropriate structural system and other building materials, develop construction connections and details, and demonstrate the problem-solving skills needed to assess, analyze and solve common construction problems. Structural systems may vary each time the course is offered. Title 24, Building Code and zoning ordinance compliance will be included. Freehand and instrument or CAD drafting will be used.

**Prerequisites/Corequisites:**

Course Completion of ARCH 81 ( or CONS 80B) and Course Completion of ARCH 83 ( or CONS 83)

**Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:**

### **Schedule of Classes Information:**

Description: The development of working drawings for a complex non-residential building from preliminary data generated by student. Title 24, Building Code and zoning ordinance compliance will be included. Freehand and instrument or CAD drafting will be used. (Grade Only)

Prerequisites/Corequisites: Course Completion of ARCH 81 ( or CONS 80B) and Course Completion of ARCH 83 ( or CONS 83)

Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

### **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>		Effective:	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

### **CID:**

### **Certificate/Major Applicable:**

Certificate Applicable Course

### **COURSE CONTENT**

#### **Outcomes and Objectives:**

Upon successful completion of this course the student will be able to:

1. Develop preliminary drawings using freehand drafting skills.
2. Generate, research and analyze site data and prepare site planning documents.
3. Generate, research and analyze passive solar design requirements and apply to building design.
4. Generate, research and analyze client needs data and prepare programming documents and adjacency diagrams.
5. Research and analyze complex structural system and finish materials options, leading to choice of system and materials to be used in preliminary design decisions.
6. Analyze structural system and complex building configuration and develop appropriate details that meet Code requirements.
7. Solve foundation related problems through the development of foundation details.
8. Solve complex roof related design problems through the development of roof details.
9. Identify other problems and develop needed details.
10. Create the final working drawings that meet Code requirements using instrument or CAD drafting skills.
11. Demonstrate understanding of Code by completing Title 24 documents and

plan checking of drawings.

## **Topics and Scope:**

- I. Identification and use of initial project data
  - A. Site analysis
  - B. Programming
  - C. Preliminary building planning
- II. Passive solar design
  - A. Criteria
  - B. Requirements to meet Title 24
- III. Structural system options
  - A. Identification and review
  - B. Finish material attributes
- IV. Content and Code requirements for different drawing types
  - A. Site Plan
  - B. Floor Plan
  - C. Framing Plans
  - D. Sections and Details
- V. Preliminary design drawings
  - A. What is needed
  - B. Development of design
- VI. Common construction problems
  - A. Identification of problems
  - B. Solutions
- VII. Development of Details
  - A. Purpose
  - B. Content
- VIII. Evaluation of preliminary working drawings
- IX. How to integrate changes and suggestions for improvements through the development of selected final working drawings
- X. Requirements for final working drawings

## **Assignment:**

1. Research and preparation of initial project data for use in project design.
2. Lab (or as homework): Freehand preliminary drawings: site plan, floor plan, foundation plan, section, foundation details, roof details, and Title 24 documentation.
3. Lab (or as homework): Selected final working drawings: site plan, floor plan, sections and details - others as appropriate for project, and Title 24 documents. (Instrument or CAD drafting may be used for final drawings.)
4. Visits to construction sites to compare drawings with buildings.
5. Quizzes, midterm and final exam.
6. 20-30 pages of reading per week in assigned text.

## **Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.

Writing  
0 - 0%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Prelim and final working drawings; Title 24 docs.

Problem solving  
20 - 35%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Class performances, Project - working drawings

Skill Demonstrations  
50 - 65%

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion, Problem solving and drawings.

Exams  
15 - 30%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

CLASS PARTICIPATION

Other Category  
0 - 10%

**Representative Textbooks and Materials:**

BUILDING CONSTRUCTION ILLUSTRATED, Ching, Francis D.K. et al. John Wiley & Sons, 2001.

THE PROFESSIONAL PRACTICE OF ARCHITECTURAL WORKING DRAWINGS, Wakita, Osamu

A. John Wiley & Sons, 2002.