

**ARCH 81 Course Outline as of Fall 2011****CATALOG INFORMATION**

Dept and Nbr: ARCH 81 Title: RESID WORKING DRAWINGS

Full Title: 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	7	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 80B

**Catalog Description:**

The development of preliminary working drawings for a simple residential building from preliminary data provided by instructor. Includes 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. Wood light frame, or light gauge steel, construction is featured. Freehand and instrument or CAD drafting will be used.

**Prerequisites/Corequisites:**

Course Completion of ARCH 80A and Course Completion of ARCH 56

**Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:****Schedule of Classes Information:**

Description: The development of preliminary working drawings for a simple residential building

from preliminary site and programming data. Wood light frame, or light gauge steel, construction is featured. Freehand and instrument or CAD drafting will be used. (Grade Only)  
Prerequisites/Corequisites: Course Completion of ARCH 80A and Course Completion of ARCH 56

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

## **Topics and Scope:**

- I. Identification and use of initial project data including
  - 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
  - B. Review of and 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. Developing preliminary design drawings
  - B. What's needed
- VI. Common construction problems
  - A. Identification of construction problems
  - B. Solutions
- VII. Details
  - A. Development of details
  - B. Purpose
  - C. 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 (optional).
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.

Drafting assignments

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:**

The Professional Practice of Architectural Working Drawings,  
by Wakita Osamu A. John Wiley & Sons, 2002.

Building Construction Illustrated, by Ching, Francis D.K. and Adams,  
Cassandra. Prentice Hall, 2001.

Sonoma County Residential Handbook, current edition.