

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Architecture</u>
COURSE RUBRIC AND NUMBER	<u>ARCH 2312</u>
COURSE TITLE	<u>Architectural Technology (F)</u>
COURSE CREDIT HOURS	<u>3 3 : 0</u> Credits Lec Lab

I. Catalog Description

Provides an introduction to materials and methods in the design and construction of buildings. Examines building materials, principles and methods of construction with emphasis on materials and techniques, introduction to varied building systems, alternative and new materials, sustainability, solar energy systems and introductory environmental systems. Requires outside assignments. **(3:0)**.

II. Course Objectives

This course provides the student with a basic understanding of codes, industry standards, material science, and methods of construction as they relate to building design and construction.

Upon successful completion of the following units, the student will be able to:

UNIT I. Introduction, Organization and General Requirements

1. Explain the objectives, intent and content of the course.
2. Describe the importance and purpose of building codes.
3. Explain how reference standards are used.

UNIT II. Site Analysis and Foundations

1. Describe the importance of storm drainage for a building site and the use of contour lines to develop site drainage.
2. Explain the importance of building orientation.
3. Describe why it is necessary for an architect to have some knowledge of soils and soil structure.
4. Discuss shallow and deep foundation systems.
5. Describe methods of increasing the bearing capacity of soils.

UNIT III. Wood, Wood Products and Framing Systems

1. Discuss tree growth and describe the differences between softwoods and hardwoods.
2. Explain how lumber is sawed, seasoned, surfaced and treated.
3. Describe how lumber is graded and what determines its strength.
4. Discuss laminated wood and wood panel products along with methods of manufacturing.
5. Describe heavy timber framing construction.
6. Describe platform framing construction.

UNIT IV. Openings, Exterior Surfaces and Interior Finishes

1. Describe methods and materials used in residential roofing.
2. List and describe window and door types used in construction.
3. Describe products and materials used for exterior surfacing.

4. Necessary considerations used to determine the proper mechanical, electrical and insulation systems for residential construction.

UNIT V. Masonry Products and Materials

1. Describe types and recommended uses of brick construction.
2. Discussed reinforced brick masonry construction.
3. Explain the characteristics of good masonry mortar.
4. Discuss stone masonry and list recommended applications.
5. Describe types and uses of concrete block construction.

UNIT VI. Steel Structural Systems

1. Describe the manufacturing process for making structural steel shapes.
2. Discuss the importance and types of steel connections used in construction.
3. Explain basic post and beam framing concepts.
4. Discuss materials and methods used for fireproofing steel.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:

1. Identify fundamental elements and key components of structural systems.
2. Identify different construction types for buildings.
3. Describe the properties and uses of building envelope systems and assemblies.
4. Recognize the different properties of major construction materials.
5. Describe the relationship between material properties and building form.
6. Recognize the sustainability and environmental impact of building material use and building performance.

IV. Evaluation

The grading criteria is based on unit exams, projects, construction report, etc.

Grading (See above note)

90-100	=	A
80-89	=	B
70-79	=	C
60-69	=	D
Below 60	=	F
Incomplete	=	I
Withdrawn or Withdrawn	=	W

V. Disability Statement (Americans with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to

see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.