

Degree Applicable
Course ID 001314

Glendale Community College
March 2016

COURSE OUTLINE

Architecture 106 Building Codes

Catalog Statement

ARCH 106 offers students fundamental instruction regarding the use of current, relevant codes and standards required to review and check plans and specifications in compliance with non-structural aspects of the International Building Code (IBC).

Total Lecture Units: 3.0

Total Laboratory Units: 0.0

Total Course Units: 3.0

Total Lecture Hours: 48.0

Total Laboratory Hours: 0.0

Total Laboratory Hours To Be Arranged: 0.0

Total Faculty Contact Hours: 48.0

Prerequisite: ARCH 101 or equivalent.

Recommended preparation: Eligibility for ENGL 120 or ESL 151.

Course Entry Expectations

Prior to enrolling in the course, the student should be able to:

- explain concepts related to the laws and rules governing the design, and construction of residential and commercial building projects;
- explain the basics of residential building construction;
- complete basic residential working drawings;
- explain technical vocabulary used in architecture.

Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:

- effectively apply the International Building Code when planning the design of a residential or commercial structure;
- determine construction methods by classification;
- compare and contrast combustible and non-combustible construction methods;
- describe methods of egress to meet requirements of local building departments;
- identify Americans with Disabilities Act (ADA) standards used in architecture.

Course Content

Total Faculty Contact Hours = 48.0

Introduction and overview (3 hours)

- Effective use of the International Building Code Administration
- Definitions

Use or occupancy and area separations (3 hours)

- Introduction to occupancy groups
- Concept of a mixed-occupancy building
- Occupancy separations vs. area separations

General building limitations (5 hours)

- Location on property
- Allowable floor area
- Allowable area increases
- Maximum height of buildings and increases
- Fire-resistive substitution
- Mezzanines
- Guardrail heights

Types of construction (3 hours)

- Classifications by type of construction
- Non-combustible construction
- Combustible construction

Fire-resistant material and construction (10 hours)

- Introduction and definitions
- Fire-resistive materials and systems
- Protections of structural members
- Projections
- Fire-resistive joint systems
- Insulation
- Fire blocks and draft stops
- Walls and partitions
- Floor ceilings or roof ceilings
- Shaft enclosures
- Usable space under floors
- Fire-resistive assemblies for the protection of openings
- Through-penetration fire stops

Fire protection systems (3 hours)

- Introduction and definitions
- Fire extinguishing systems
- Smoke control
- Smoke and heat venting

Means of egress (10 hours)

- General requirements
- Exit signs and exit illumination
- Doors and gates
- Stairways

Ramps

The exit access

Aisles

Hallways

Corridors

The exit

Exit enclosures

Exit passageways

Horizontal exits

Exit discharge components

Requirements based on building occupancy (**3 hours**)

IBC Code sections A, B, E, F, and M

IBC Code sections R, S, and U

IBC Code sections H and I

Special use and occupancy (**4 hours**)

Atria

Office buildings and hotels

Covered mall buildings

Stages and platforms

Motion picture projection rooms

Other

Accessibility (**4 hours**)

Americans with Disabilities Act

California Title 24

Methods of Instruction

The following methods of instruction may be used in this course:

- lecture;
- multimedia;
- guest speakers;
- discussion individual and group projects.

Out of Class Assignments

The following out of class assignments may be used in this course:

- field trip (e.g. a written summary or summaries describing tours of local construction sites, visits to city building departments.).

Methods of Evaluation

The following methods of evaluation may be used in this course:

- chapter quizzes;
- midterm examinations;
- final examination.

Textbooks

Ching, Francis and Steven R. Winkel. *Building Codes Illustrated: A Guide To Understanding the 2012 International Building Code*. Hoboken: John Wiley ,2012. Print.

10th Grade Textbook Reading Level. ISBN: 978-0470903575.

Student Learning Outcomes

Upon successful completion of the required coursework, the student will be able to:

- the Uniform Building Code (UBC) when planning the design of a residential or commercial structure;
- classify structures based on their method of construction methods;
- compare and contrast combustible and non-combustible construction methods;
- determine methods of egress (exiting) to meet requirements of local building departments;
- identify Americans with Disabilities Act (ADA) standards used in architecture.