

College of San Mateo
Official Course Outline

1. **COURSE ID:** BLDG 710 **TITLE:** Advanced Building Inspection
Units: 4.5 units **Hours/Semester:** 72.0-81.0 Lecture hours; 144.0-162.0 Homework hours; 216.0-243.0 Total Student Learning hours
Method of Grading: Grade Option (Letter Grade or Pass/No Pass)

2. **COURSE DESIGNATION:**

Degree Credit
Transfer credit: none

3. **COURSE DESCRIPTIONS:**

Catalog Description:

Study of the fire and life safety provisions of the International Building Code. This includes navigation of the code, building use and occupancy, building heights and area, types of construction and means of egress for commercial and multi-family residential construction.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**

Upon successful completion of this course, a student will meet the following outcomes:

1. Demonstrate competency in the following components of a Building inspection and plan Check: structure, roofing, heating, electrical, exterior, cooling, plumbing, insulation and interior.
2. Demonstrate an understanding of installation and inspection procedures involved within the California Building Code as addressed within course lecture, text and supplemental materials (e.g. navigation of the code, use and occupancy, building heights and area, types of construction and means of egress.)
3. Describe the features of adequate design, installation and recognize their application to current code.
4. Identify type of building and the construction means and methods in a manner that is consistent with the International Code Conference.

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**

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

1. Demonstrate competency in the following components of a Building inspection and plan Check: structure, roofing, heating, electrical, exterior, cooling, plumbing, insulation and interior.
2. To both recognize and comprehend installation and inspection procedures involved within the California Building Code as addressed within course lecture, text and supplemental materials (e.g. navigation of the code, use and occupancy, building heights and area, types of construction and means of egress.)
3. Describe the features of adequate design, installation and recognize their application to current code.
4. Identify type of building and the construction means and methods in a manner that is consistent with the International Code Conference.

6. **COURSE CONTENT:**

Lecture Content:

1. OCCUPANCIES: Overview and definitions of the occupancies A thru U+ Introduction to Special Occupancies (Malls/Atriums / Motor Vehicle occupancies)
2. OCCUPANCIES: Definition of Special Occupancies continued (High Rise / Health Care (I-2) / Detention (I-3) / Transit Terminals / H / S / U / Ancillary Occupancies
3. FLOOR AREA: Definition and determination (BOCA definitions as they apply, what gets counted and how; CBC Chapter. 5, Tables 503)
4. CONSTRUCTION TYPES: Type I thru V and how they relate to the various occupancies and why (CBC Chapter. 6, Table 601, 602)
5. FIRE RESISTANT ASSEMBLIES: Fire and Smoke protection and control as they relate to the various occupancies (CBC Chapter. 7)
6. FIRE PROTECTION SYSTEMS: Fire Sprinklers and Alarms as they relate to the various occupancies (CBC Chapter. 9)
7. OCCUPANT LOAD CALCULATIONS: Why Occupant loads are important and how to calculate occupant loads and where to find them in a set of drawings.
8. EGRESS: Introduce concept of Exiting (Exit/Exit Access/Exit Discharge). Importance of providing adequate egress components. How egress is used and its importance to the Fire Department
9. EGRESS: Egress components continued; signage, lighting, door width/quantity and placement. How to

calculate egress widths.

10. EGRESS: Special occupancy egress requirements (Exiting from a High Rise, Exiting from a subterranean Transit (use of Escalators)
11. WOOD: Wood design types and requirements. Minimum standards and quality of wood members, conventional light framing.
12. WOOD: Conventional light framing
13. WOOD: Conventional light framing continued.
14. STRUCTURAL DESIGN: Construction documents, General design requirements, SAP program, Dead loads, Live load
15. STRUCTURAL DESIGN: Snow, wind, flood and earthquake loads.
16. SOILS AND FOUNDATIONS: Design basis, Geotechnical reports, grading, waterproofing, foundations adjacent to slopes, Peirs-shallow foundation, Piles-deep foundations.
17. CONCRETE: Plain /reinforced concrete, ACI 318, Construction documents, Testing, Durability, Quality mixing and placement
18. CONCRETE: Structural plain concrete, slab provisions, shotcrete
19. CONCRETE: Concrete reinforcement, review
20. MASONRY: Masonry reinforcement. Masonry construction materials, construction, quality assurance.
21. MASONRY: Glass unit masonry, Fireplaces, heaters, chimneys and additional requirements.
22. STEEL
23. SPECIAL INSPECTIONS

Lab Content:

N/A

7. REPRESENTATIVE METHODS OF INSTRUCTION:

Typical methods of instruction may include:

- A. Lecture
- B. Activity
- C. Discussion
- D. Guest Speakers
- E. Individualized Instruction
- F. Observation and Demonstration
- G. Other (Specify): Small group discussion, materials demonstrations, written examination, reading assignments, handouts from the Uniform Building Code Study Guide

8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

Writing Assignments:

Written homework assignments related to class material.

Reading Assignments:

The reading assignments are centered in sections of the official handbooks and in hand-outs the instructor provides from recent articles published in the Building Inspection industry.

9. REPRESENTATIVE METHODS OF EVALUATION

Representative methods of evaluation may include:

- A. Class Participation
- B. Class Performance
- C. Class Work
- D. Exams/Tests
- E. Final Class Performance
- F. Group Projects
- G. Homework
- H. Quizzes
- I. Simulation
- J. Written examination

10. REPRESENTATIVE TEXT(S):

Possible textbooks include:

- A. International Code Council. *2018 International Building Code*, 6 ed. Hoboken: John Wiley & Sons, 2018
- B. John Wiley and sons. *International Code Council 2021*, 2021 ed. ICC, 2022

Other:

A. Uniform Building Code

Origination Date: October 2023
Curriculum Committee Approval Date: November 2023
Effective Term: Fall 2024
Course Originator: Brent Hipsher