

Montgomery County Community College
FSC 104
Building Construction for Fire Science
3-3-0

COURSE DESCRIPTION:

The topics covered include: the functional and structural aspects of construction, constructional features, fire resistive and fire retardant materials, and ways in which occupancy affects construction requirements.

REQUISITES:*Previous Course Requirements*

- FSC 100 - Introduction to Fire Science

Concurrent Course Requirements

None

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Analyze building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
2. Classify major types of building construction.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
3. Analyze the hazards and tactical considerations associated with the various types of building construction.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
4. Explain the different loads and stresses that are placed on a building and their interrelationships.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
5. Identify the principal structural components of buildings and demonstrate an understanding of the functions of each.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
6. Differentiate between fire resistance and flame spread, and describe the testing procedures used to establish ratings for each.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
7. Classify occupancy designations of the building codes.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
8. Identify the indicators of potential structural failure as they relate to firefighter safety.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
9. Identify and analyze the causes involved in line-of-duty firefighter deaths related to structural firefighting, training and research, and the reduction of emergency risks and accidents.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria*.

SEQUENCE OF TOPICS:

1. Overview of Building Construction: History; Governmental functions; Fire Risks and Protections; Loss Management and Safety; Pre-fire Planning and Fire Suppression Strategies
2. Principles of Construction
3. Principles of Fire Resistance
4. Fire Behavior vs. Building Construction: Flame Spread; Smoke and Fire Containment
5. Wood Construction

6. Ordinary Construction
7. Truss Construction
8. Steel Construction
9. Concrete Construction
10. Garden Apartments
11. Mid-Rise Construction
12. High Rise Construction
13. Collapse
14. Ventilation

LEARNING MATERIALS:

Brannigan, Francis and Corbett, Glenn. (2013). *Brannigan's Building Construction for the Fire Service* (5th ed.). Jones & Bartlett.

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

COURSE APPROVAL:

Prepared by: Don Nypower	Date: 6/1995
Revised by: Benn Prybutok and Robert Drennen	Date: 2/2/2009
VPAA/Provost Compliance Verification: Dr. John C. Flynn, Jr.	Date: 9/11/2009

Revised by: Benn Prybutok	Date: 2/2013
VPAA/Provost or designee Compliance Verification: Victoria L. Bastecki-Perez, Ed.D.	Date: 2/27/2013

Revised by: Jayden Sampson	Date: 12/16/2017
VPAA/Provost or designee Compliance Verification:	Date: 12/18/2017



This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.