

Associate of Applied Science - Fire Science

Program Description

The Fire Science degree program is an interdisciplinary program of study which prepares students for a broad range of employment opportunities including Firefighter, Hazardous Materials Technician, Fire Marshal/Inspector, Fire Investigator, and Fire Service Supervisor/Manager.

In addition to preparing students for employment, this degree program is appropriate for individuals already employed in the Public Safety field who are seeking skill upgrade and promotional opportunities, and individuals preparing to transfer to a four-year college/university.

Students interested in a transfer program in fire science should see an academic advisor for an educational plan.

Program Contacts

- Program Director: Kenny Krebbs (kkrebbs@instructor.yc.edu), telephone: (928) 717-7911
- Associate Dean: Kim Ewing (kim.ewing@yc.edu), telephone: (928) 717-7923
- Dean: Scott Farnsworth (scott.farnsworth@yc.edu), telephone: (928) 776-2234

Program Outcomes

Upon successful completion of the Fire Science Degree program, the learner will be able to:

1. Develop conditioning strategies, lifelong fitness, nutritional guidelines, and prepare for pre-employment agility tests. (FSC102)
2. Explain issues related to fire prevention and the components and steps of inspection and enforcement. (FSC135)
3. Describe principles and characteristics of hydraulics and operate fire hydraulic pumps currently in use in the fire service. Compute nozzle pressures and characterize related hydraulics problems. (FSC137)
4. Discuss various materials and their relationship to fires as fuel. Describe characteristics of water as a fire suppression agent and identify other suppression agents and strategies. Compare methods and techniques of fire extinguishments. (FSC210)
5. Define types of laws and explain the purpose and roles of national codes and standards and the scope of the Civil Rights Act, the American Disabilities Act, Fair Labor Standards Act, and Family Medical Leave Act. Outline the organizational and legal structure and differentiate forms of discrimination in the Fire Service. (FSC225)
6. Describe fire detection systems and applications, and operate and test fire protection and detection systems. (FSC235)
7. Employ accident control, safety standards, analyze safety hazards, develop inspection safety procedures, evaluate training simulations, and prescribe safety procedures for personnel. (FSC236)
8. Direct firefighting operations to achieve maximum property conservation. (FSC238)
9. Lead functions and processes as the emergency scene commander. (FSC239)
10. Incorporate and manage cost containment, budgeting, data analysis, personnel evaluation, community planning, and departmental and public organization. (FSC240)
11. Determine factors and principles related to fire resistance, building codes and fire suppression issues. (FSC241)
12. Describe the theory of fire behavior, phases of fire, types of fires, and methods of fire control. (FSC100, FSC105)
13. Explain the role and functions of fire protection organizations within the community. (FSC100, FSC 105)
14. Identify the main elements determining fire behavior, fuels and fuel properties. (FSC234)
15. Analyze arson, conduct fire investigations, and present evidence and testimony in court. (FSC234)
16. Determine hazardous materials through the identification of placarding, labeling and shipping manifests. Respond and control flammable, reactive and toxic hazardous materials incidents and match the type of control options for each response objective; absorption, damming, diking, dilution, diversion, retention, vapor dispersion, remote valve shut-off. (FSC100, FSC104)
17. Perform standard hose rolls, carries, drags, lifts, wall breaching, narrow-space manipulation and hoisting techniques directly related to firefighter safety and self-survival. Explain the need for proper ventilation, the method and theory of fire cause determination, and the components and value of automatic sprinkler systems. (FSC100, FSC105)

Program Requirements

A minimum of 61 credit hours is required to complete the Fire Science Degree.

Course	Course Title	Credit Hours
I. General Education		
A. Foundation Studies (12 credits)		
1. College Composition or Applied Communication - Select Option a or b		
a. Writing (6 credits)		
Choose two courses from list - if preparing for transfer, complete College Composition		
b. Writing AND Communication (6 credits)		
Choose one course from each list		
2. Numeracy (3 credits)		
Choose from approved list - If preparing for transfer, choose MAT 152		
3. Critical Thinking (3 credits)		
B. Area Studies (7 credits)		
1. Physical and Biological Science (4 credits)		
2. Behavioral OR Social Science (3 credits)		
Choose one course from either list		
II. Fire Science Requirements		
FSC100	Principles of Emergency Srvc	3
OR		
FSC104	Haz Mat First Responder Op	3
AND FSC105	Firefighter I & II Cert Acad	12
And all of the following:		
FSC102	Prin of Fire/Emerg Serv Safety	3
FSC135	Fire Prevention	3
FSC137	Fire Protection Hydraulics/Wat	3
FSC210	Adv Fire Behavior & Combustion	3
FSC225	Legal Aspects of Emerg Serv	4
FSC234	Fire Investigation	3
FSC235	Fire Protection Systems	3
FSC236	Occupational Safety/Hlth Emer	3
FSC238	Strategy and Tactics	3
FSC239	Fire Department Co Officer	3
FSC240	Principles of Fire/Emerg Serv	3
FSC241	Bldg Const for Fire Protection	3
III. Related Requirements		
BSA102	Career Search and Success	1