

FIRE SCIENCE TECHNOLOGY

Associate of Applied Science Degree

Certificate of Completion: Basic Firefighter

(575) 528-7321

Every year, fire and other emergencies take thousands of lives and destroy property worth billions of dollars. Firefighters help protect the public against these dangers. They are frequently the first emergency personnel at the scene of a traffic accident or medical emergency and may be called upon to put out a fire, treat injuries, or perform other vital functions.

Employment of firefighters is expected to grow about as fast as the average for all occupations. According to the United States Fire Administration, nearly 70 percent of fire companies are staffed by volunteer firefighters. Most job growth will occur as volunteer fire-fighting positions are converted to paid positions. In addition to job growth, openings are expected to result from the need to replace firefighters who retire, stop working for other reasons, or transfer to other emergency service entities.

Doña Ana Community College provides training for firefighting personnel through its Fire Science Technology program, which is accredited by the International Fire Service Accreditation Congress (IFSAC). Students will receive training in the basic concepts of firefighting and will participate in live evolution that will give them real experience in the firefighting career field. This program provides classroom instruction leading to an associate of applied science degree in fire science technology or a certificate of completion in firefighting. It is suited to those who are new to the field, as well as incumbent firefighters.

- Career and volunteer firefighters and NMSU student firefighters will improve their job performance and prepare for higher level positions in the fire protection fields.
- Students who wish to enter the field of fire protection will benefit from the basic foundations provided in the technical courses as well as general education courses.

NOTE: An articulation agreement with the N.M. Firefighters Training Academy makes it possible to receive college credit for experience and IFSAC certification. All courses in this program may be applied toward a Bachelor of Applied Studies or Bachelor of Individualized Studies degree at NMSU.

NOTE: Students wishing to enter the fire service will benefit from the educational background provided and may receive certifications in various fire-related areas through the New Mexico Firefighters Training Academy in Socorro, N.M., and the IFSAC.

Program Accreditation

The Fire Science Program is accredited by the International Fire Service Accreditation Congress (<https://ifsac.org/>).

Medical Clearances and Background Checks

Several courses in the program may require the student to submit a medical clearance physical, mask fit test, and a background check. See a program advisor for details.

NOTE: A criminal history may prohibit students from being hired or certified by agencies. Students are encouraged to check with the

prospective agency and identify that agency's specific requirements prior to enrolling in this program.

Physical Abilities

This program requires that the student be able to:

- lift, carry and balance up to 125 pounds (250 pounds with assistance)
- assume a variety of postural positions and be capable of physical maneuvers ranging from crawling, kneeling, squatting, twisting, turning, and bending, to climbing stairs and ladders
- withstand varied environmental conditions such as extreme heat, cold, and moisture

Technology Competencies

In an effort to assist students with adequate preparation for their coursework at DACC, technology competencies have been identified and established. These competencies are in effect for all courses taken in the Fire Science Technology program. Students must possess the following minimum competencies. Additional competencies may be required for particular courses/programs:

- Access course and program material on the Web using CANVAS and an applicable web browser
- Correspond with DACC students and faculty using e-mail and the Web
- Read/print e-mail and attachments/files from students and faculty
- Complete, send, and receive assignments using e-mail and attachments/files
- Use the DACC Library e-books, e-journals, databases, or credible World Wide Web resources for research and completion of course assignments
- Prepare and conduct presentations in the classroom using presentation equipment as required.
- Use the appropriate software for a given course (DACC uses as standards Microsoft products, including MS Word, MS Project, MS Excel, and MS PowerPoint)
- Use an appropriate anti-virus application to ensure the files transmitted and received are virus free
- Use recommended plagiarism review software to ensure work is not plagiarized

Fire Science Technology - Associate of Applied Science (<https://catalogs.nmsu.edu/dona-ana/academic-career-programs/fire-science-technology/fire-science-technology-associate-applied-science/>)

Basic Firefighter - Certificate of Completion (<https://catalogs.nmsu.edu/dona-ana/academic-career-programs/fire-science-technology/basic-firefighter-certificate-completion/>)

FIRE 102. Fire Fighter I and II 12 Credits (12)

This course will train the student as outlined in NFPA 1001, Fire Fighter Professional Qualifications. Firefighter I & II Certification issued through the New Mexico Firefighter's Training Academy (NMFTA) upon successful completion [International Fire Service Accreditation Congress (IFSAC) & Pro Board accredited]. Consent of Instructor required.

Prerequisite(s)/Corequisite(s): FIRE 115, FIRE 252, OEEM 103. Restricted to Dona Ana campus only.

FIRE 112. Principles of Emergency Services 3 Credits (3)

This course provides an overview to fire protection and emergency services including career opportunities in fire protection and related

fields. The organization and function of public and private fire protection services is studied including how fire departments fit as part of local government. An overview of laws and regulations affecting the fire service is explored along with specific fire protection functions and responsibilities including basic fire chemistry and physics, introduction to fire strategy and tactics and life safety initiatives. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

FIRE 114. Fire Behavior and Combustion
3 Credits (3)

This course explores the theories and fundamentals of how and why fires start, spread, and are controlled. Restricted to: Community colleges only.

FIRE 115. Hazardous Materials Awareness and Operations
3 Credits (3)

This course will train the student to the Hazardous Materials Awareness and Operations level as outlined in NFPA 472, Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents and OSHA 29 CFR 1910.120. Hazardous Materials Awareness and Operations certification issued through the New Mexico Firefighter's Training Academy upon successful completion (IFSAC accredited). May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

FIRE 120. Fire Protection Hydraulics and Water Supply
3 Credits (3)

This course will train students on skill requirements for becoming a safe and effective fire apparatus driver/operator. The focus will be on pump operation, construction, testing, and mathematical calculation required for effective pump operation and fire control. Responsibilities of the driver/operator will be taught and assessed consistent with applicable NFPA standards and the New Mexico Firefighters' Training Academy (NMFTA) guidelines. Students who meet all course requirements will be eligible for International Fire Service Accreditation Congress (IFSAC) certification through the NMFTA. Consent of Instructor required. Restricted to Community Colleges campuses

Prerequisite(s)/Corequisite(s): FIRE 128.

FIRE 126. Fire Prevention
3 Credits (3)

This course will educate students about the principles and techniques of fire prevention and life-safety inspection and code compliance in accordance to NFPA 1031, Standard for Professional Qualifications for Fire Inspector and Plan Examiner, Level I. Students who meet all course requirements will be eligible for International Fire Service Accreditation Congress (IFSAC) certification through the New Mexico Firefighters' Training Academy (NMFTA). Restricted to Community Colleges campuses only.

FIRE 128. Apparatus and Equipment
2 Credits (2)

The course will train students on attitude and skill requirements for becoming a safe and effective fire apparatus driver/operator. The focus will be on apparatus inspection, operation, maintenance, and specification. Responsibilities of the driver/operator will be taught and assessed consistent with applicable NFPA standards and the New Mexico Firefighters' Training Academy (NMFTA) guidelines. Students pursuing certification must possess a current and valid New Mexico driver's license. Students who meet all course requirements will be eligible for International Fire Service Accreditation Congress (IFSAC) certification through the NMFTA. Restricted to Community Colleges campuses only.

FIRE 130. Principles of Fire and Emergency Services Safety and Survival
3 Credits (3)

This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. Consent of instructor required. Restricted to: Community colleges only.

FIRE 200. Special Topics
1-12 Credits (1-12)

Specific subjects to be announced in the Schedule of Classes. Course may be repeated for credit as topics change. May be repeated up to 12 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.

FIRE 201. Independent Study
1-3 Credits

Research on an approved topic to meet graduation requirements. Meets or exceeds NFPA standards. May be repeated for total of 9 credits.

Prerequisite: consent of instructor.

FIRE 203. Fire and Emergency Services Administration
3 Credits (3)

This course will provide students entry-level training in company operations and administration at the first-line supervisory level. The student will learn how to effectively manage human resources and community/public relations. Students will learn about fire department organization and administration; including budgets, reports, and planning. Students will learn the process involved in fire inspection, investigation, public education, emergency service delivery, and safety, per NFPA Standard 1021, Fire Officer Professional Qualifications. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

FIRE 210. Building Construction for Fire Protection
3 Credits (3)

This course provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. Restricted to: Community colleges only.

FIRE 214. Hazardous Materials Technician
3 Credits (3)

Knowledge and skills about hazardous materials mitigation needed to certify as a Hazardous Materials Technician Level III. Meets or exceeds NFPA 471, 472, 473 standards, and OSHA 1910.102 part Q, and New Mexico HMER plan. May be repeated up to 3 credits. Restricted to: Community Colleges only.

Prerequisite: FIRE 115.

Learning Outcomes

1. Acquire the skills and knowledge required to perform the functions of a firefighter.
2. Apply the appropriate critical thinking skills necessary to develop an incident action plan using appropriate strategies and tactics to safely manage incidents.

FIRE 216. Hazardous Materials Chemistry
3 Credits (3)

This course provides basic chemistry relating to the categories of hazardous materials including recognition, identification, reactivity, and health hazards encountered by emergency services. Restricted to: Community colleges only. May be repeated up to 3 credits.

Learning Outcomes

1. Acquire the skills and knowledge required to perform the functions of a firefighter.

FIRE 220. Cooperative Experience I**1-3 Credits**

Supervised cooperative work program. Student is employed in an approved occupation and rated by the employer and instructor. May be repeated for a maximum of 6 credits. Graded S/U.

Prerequisite: consent of instructor.

FIRE 221. Cooperative Experience II**3 Credits (3)**

Apply advanced firefighting knowledge and skills while working with fire protection agencies. Meets or exceeds NFPA standards. Consent of instructor required. Graded: S/U. Restricted to: Community Colleges only.

Prerequisite(s): FIRE 220.

FIRE 223. Fire Investigations I**3 Credits (3)**

This course meets the requirements set forth in NFPA 1033 Professional Qualifications for Fire Investigator. This course will give a comprehensive understanding of the principles of fire investigation, scene examination, documentation, evidence collection/preservation, interview techniques, and post-incident investigations. Student who meet all course requirements are eligible for International Fire Service Accreditation Congress (IFSAC) certification through New Mexico Firefighters' Training Academy (NMFTA). Restricted to Community Colleges campuses only.

FIRE 224. Strategy and Tactics**3 Credits (3)**

Provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment and extinguishing agents on the fire ground. Covers the development of systematic action plans for emergency situations. Includes recognizing and prioritizing emergency scene needs and developing related strategies, tactics and contingencies. Educates students on how resources should be deployed to implement those plans. Restricted to Community Colleges campuses only.

FIRE 225. Fire Protection Systems**3 Credits (3)**

This course provides information relating to the features and design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers. Restricted to: Community colleges only.

FIRE 230. Fire Service Instructor**3 Credits (3)**

Provides the instructor candidate with methods and techniques of instruction including oral communications, preparing lesson plans, writing performance objectives, use of audio and other training aids, and the selection, evaluation and preparation of performance tests. Meets and exceeds NFPA 1041 Level I standards. Restricted to: Community Colleges only.

FIRE 232. Firefighter Internship**3 Credits (3)**

Application of knowledge, skills and abilities in a fire service department, as a firefighter intern and integrated member of a fire affiliated agency. Restricted to majors.

Prerequisites: FIRE 101, FIRE 102, FIRE 115, FIRE 202 and EMT-B and consent of instructor.

FIRE 252. Vehicle Extrication**2 Credits (1+2P)**

This course will train the student to the Vehicle & Machinery Extrication level I as outlined in NFPA 1006, Standard for Technical Rescuer Professional Qualifications. Vehicle & Machinery Extrication certification issued through the New Mexico Firefighter's Training Academy upon

successful completion (IFSAC accredited). May be repeated up to 2 credits. Restricted to Community Colleges campuses only.

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