FIRE SCIENCE (FIRE)

FIRE F101 Principles of Emergency Services
3 Credits
Offered Spring
Overview of fire protection, career opportunities in fire protection and related fields, philosophy and history of fire protection/service. Fire loss analysis, organization and function of public and private protection services. Fire departments as part of local government, laws and regulations affecting fire services, fire service nomenclature, specific fire protection functions. Basic fire chemistry and physics, introduction to fire protection systems and introduction to fire strategy and tactics.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F105 Fire Prevention
3 Credits
Offered Spring
The history and philosophy of fire prevention, organization and operation of a fire prevention bureau. Use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F107 Strategy and Tactics
3 Credits
Offered Spring
The principles of fire control through utilization of personnel, equipment and extinguishing agents on the fire ground.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F110 Introduction to Hazardous Waste Operations and Emergency Response
3 Credits
Offered As Demand Warrants
Review of federal and state hazardous materials laws and regulations. Career opportunities related to the field of hazardous materials including transportation, emergency response, site clean up and Incident Command System (ICS).
Lecture + Lab + Other: 3 + 0 + 0

FIRE F115 Fire Apparatus and Equipment
3 Credits
Offered As Demand Warrants
Fire apparatus design, specifications and performance capabilities, effective use of apparatus in fire emergencies.
Prerequisites: FIRE F101.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F117 Rescue Practices
3 Credits
Offered Fall
Rescue situations and techniques including vehicle extrication, rescue carries, ventilation principles, structural rescue, use of portable hand and power tools, wildland/canine search and rescue, ice and water rescue and emergency life saving principles. All students are required to wear a complete set of fire department-approved protective clothing (turnout gear). Limited quantities are available for loan through the emergency services program coordinator. An eight-hour personal protective equipment and self-contained breathing apparatus safety orientation must be completed in order to participate in live fire exercises.
Prerequisites: EMS F170.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F121 Fire Behavior and Combustion
3 Credits
Offered Fall and Spring
Theories and fundamentals of how and why fires start, spread, and how they are controlled.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F123 Fire Investigations I
3 Credits
Offered As Demand Warrants
Fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the firesetter and types of fire causes.
Prerequisites: FIRE F101.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F127 Vessel Safety: Emergency Equipment, Procedures and Drills
1 Credit
Offered As Demand Warrants
Introduction to safe boating practices and skills including boat handling, rules of navigation, proper safety equipment, weather, boat trailering, lines and knots, first aid and emergency procedures.
Lecture + Lab + Other: 1 + 0 + 0

FIRE F131 Firefighter I, Series I
3 Credits
Offered Fall and Summer
The initial phase in a four-phase process for achieving State of Alaska Fire Fighter I certification. Fundamental knowledge of fire behavior, fire organizations, types of fire equipment emergency response services possess and methods of their use. Successful completion of all four phases will qualify the student for Alaska State Fire Fighter I certification. Limited quantities are available for loan through the Emergency Services Program coordinator.
Prerequisites: All students are required to wear a complete set of fire department approved protective clothing (turnout gear).
Lecture + Lab + Other: 3 + 0 + 0

FIRE F133 Firefighter I, Series II
3 Credits
Offered Fall and Spring
The second phase in a four-phase process for achieving State of Alaska Fire Fighter I certification. Fundamental knowledge of fire behavior, fire organizations, types of fire equipment emergency response services possess and methods of their use. Successful completion of all four phases will qualify the student for Alaska State Fire Fighter I certification. Limited quantities are available for loan through the emergency services program coordinator. An 8 hour Personal Protective Equipment (PPE) and Self-Contained Breathing Apparatus (SCBA) safety orientation offered each semester must be completed in order to participate in live fire exercises.
Prerequisites: All students are required to wear a complete set of fire department approved protective clothing (turnout gear).
Lecture + Lab + Other: 2 + 2 + 0
FIRE F135  Firefighter I, Series III  
3 Credits  
Offered Fall and Spring  
The third phase in a four-phase process for achieving State of Alaska Fire Fighter I certification. Fundamental knowledge of fire behavior, fire organizations, types of fire equipment, emergency response services possess and methods of their use. Successful completion of all four phases will qualify the student for Alaska State Fire Fighter I certification. Limited quantities are available for loan through the Emergency Services program coordinator. An 8 hour Personal Protective equipment (PPE) and Self-Contained Breathing Apparatus (SCBA) safety orientation is offered each semester and must be completed in order to participate in live fire exercises.  
Prerequisites: All students are required to wear a complete set of fire department approved protective clothing (turnout gear).  
Lecture + Lab + Other: 2 + 2 + 0  
FIRE F137  Firefighter I, Series IV  
3 Credits  
Offered Fall and Spring  
The final phase in a four-phase process for achieving State of Alaska Fire Fighter I certification. Fundamental knowledge of fire behavior, fire organizations, types of fire equipment, emergency response services possess and methods of their use. Successful completion of all four phases will qualify the student for Alaska State Fire Fighter I certification.  
Lecture + Lab + Other: 3 + 0 + 0  
FIRE F143  Firefighter Internship, Series 1  
1 Credit  
Offered As Demand Warrants  
Practical experience in fire operations and training by arrangement through local fire departments.  
Lecture + Lab + Other: 0 + 2 + 0  
FIRE F145  Firefighter Internship, Series 2  
1 Credit  
Offered As Demand Warrants  
Practical experience in fire operations and training by arrangement through local fire departments.  
Prerequisites: FIRE F143.  
Lecture + Lab + Other: 0 + 2 + 0  
FIRE F147  Firefighter Internship, Series 3  
1 Credit  
Offered As Demand Warrants  
Practical experience in fire operations and training by arrangement through local fire departments.  
Prerequisites: FIRE F145.  
Lecture + Lab + Other: 0 + 2 + 0  
FIRE F149  Firefighter Internship, Series 4  
1 Credit  
Offered As Demand Warrants  
Practical experience in fire operations and training by arrangement through local fire departments.  
Prerequisites: FIRE F147.  
Lecture + Lab + Other: 0 + 2 + 0  
FIRE F151  Wildland Firefighter I  
3 Credits  
Offered As Demand Warrants  
Designed to provide entry-level wildland firefighters the skills and knowledge to safely function as a member of a firefighting crew. Includes fundamental knowledge of wildland fire organization, fire behavior, suppression methods, safety and the incident command system. This course is based on a number of individual National Wildfire Coordinating Group (NWCG) courses. Successful course completion combined with national age and physical fitness requirements will qualify the student for an interagency fire qualification card (red card) with a rating of Firefighter (FFT2). NWCG courses for F151 include: S-130 Firefighter Training S-190 Introduction to Wildland Fire Behavior L-180 Human Factors in Wildland Fire Service L-200 Basic ICS, ICS for Single Resource and Initial Action Incidents.  
Cross-listed with WFS F151.  
Lecture + Lab + Other: 3 + 0 + 0  
FIRE F154  Basic Wildland Fire Safety  
1.5 Credits  
Offered As Demand Warrants  
Designed to meet the training needs of the Advanced Wildland Firefighter. The course includes development of a personal safety program and creating a list of performance standards based on the LCES mnemonic. This course is based on National Wildfire Coordinating Group (NWCG) courses.  
Prerequisites: FIRE F151.  
Special Notes: NWCG courses include: S-134 LCES.  
Lecture + Lab + Other: 1.5 + 0 + 0  
FIRE F155  Wildland Fire Behavior I  
2 Credits  
Offered As Demand Warrants  
This course is a classroom-based skills course designed to prepare the prospective fireline supervisor to undertake safe and effective fire management operations. It serves to develop fire behavior prediction knowledge and skills. Fire environment differences are discussed as necessary; instructor will stress local Alaskan conditions. This course is based on a National Wildfire Coordinating Group (NWCG) course.  
Prerequisites: FIRE F151.  
Special Notes: NWCG courses include: S-290 Intermediate Wildland Fire Behavior.  
Lecture + Lab + Other: 2 + 0 + 0  
FIRE F159  Wildland Fire Urban Interface Operations  
2 Credits  
Offered As Demand Warrants  
Designed to assist both structural and wildland firefighters who will be making tactical decisions when confronting wildland fire that threatens life, property and improvements in the wildland/urban interface. Instructional units include interface awareness, size-up, initial strategy and incident action plan, structure triage, structure protection tactics, incident action plan assessment and update, follow up and public relations, and firefighter safety in the interface. This course is based on a National Wildland Coordinating Group (NWCG) course.  
Prerequisites: FIRE F151 and WFS F153.  
Special Notes: NWCG courses include: S-215 Fire Operations in the Wildland/Urban Interface.  
Lecture + Lab + Other: 2 + 0 + 0
Lecture + Lab + Other:

Prerequisites:

Introduction to Incident Information.
Based on National Wildfire Coordinating Group (NWCG) courses: S-203 special situations, and long term planning and strategy. This course is internal and external audiences, working with the news media, handling maintaining an incident information operation, communicating with PIOF on an incident or event. The course covers establishing and knowledge needed to serve as an entry-level public information officer. The purpose of this course is to provide students with the skills and offered as demand warrants. 2 credits

FIRE F165 Incidents and the Incident Planning Function
2 Credits
Offered As Demand Warrants
An overview of the Incident Command System principles and planning processes, organizational relationships with other functions, use of planning matrix board, resource management, documentation, demobilization, use of technical specialist and components of an incident action plan. This course is based on Federal Emergency Management Agency (FEMA) courses: I-200 Basic ICS: ICS for Single Resources and Initial Action Incidents; I-300 Intermediate ICS: ICS for Supervisors.
Prerequisites: FIRE F151.
Lecture + Lab + Other: 2 + 0 + 0

FIRE F176 Wildland Fire Ignition Operations
1 Credit
Offered As Demand Warrants
This course introduces the roles and responsibilities of a firing boss (FIRB), common firing devices, and general firing operations and techniques. The course provides students with important information concerning general tasks required to be successful. This course is based on a National Wildfire Coordinating Group (NWCG) course: S-234: Ignition Operations.
Prerequisites: FIRE F155.
Lecture + Lab + Other: 1 + 0 + 0

FIRE F202 Fire Protection Hydraulics and Water Supply
3 Credits
Offered As Demand Warrants
Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and their application to analyze and solve water supply problems.
Prerequisites: MATH F055 or placement into MATH F105; FIRE F101.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F203 Hazardous Materials Chemistry I
3 Credits
Offered As Demand Warrants
Basic fire chemistry relating to most categories of hazardous materials including problems of recognition, reactivity and health risks encountered by firefighters.
Prerequisites: Satisfactory demonstration of basic chemistry knowledge (pretest).
Lecture + Lab + Other: 3 + 0 + 0

FIRE F206 Building Construction for Fire Protection
3 Credits
Offered Spring
The components of building construction that relate to fire and life safety. Focuses on fire fighter safety. Includes elements of construction and design of structures shown to be key factors when inspecting buildings, preplanning fire operations and operating emergencies.
Prerequisites: FIRE F101 or employment or experience in related field, such as fire protection, insurance, construction architecture, or engineering.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F207 Hazardous Materials Technician
3 Credits
Offered As Demand Warrants
Advanced information for protection and safety of personnel engaged in response and field cleanup of hazardous materials and substances at the hazardous materials technician level (EPA course #165.15).
Lecture + Lab + Other: 3 + 0 + 0

FIRE F210 Fire Administration I
3 Credits
Offered Fall
Organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis on fire service leadership from the perspective of the company officer.
Prerequisites: FIRE F101.
Lecture + Lab + Other: 3 + 1 + 0
FIRE F212  Building and Fire Codes
3 Credits
Offered As Demand Warrants
Introduction to life safety aspects of the uniform building code. Emphasis on uniform fire code for fire inspections on existing buildings, flammable liquids, hazardous materials and special processes. Preparation for the uniform fire code exam administered by the International Conference of Building Officials.
Prerequisites: FIRE F101; FIRE F206.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F214  Fire Protection Systems
3 Credits
Offered Fall
Features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection and portable fire extinguishers.
Prerequisites: FIRE F101.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F215  Advanced Hazardous Materials Technician
3 Credits
Offered As Demand Warrants
Provides increased hands-on skills for personnel with a hazardous materials technician rating. Emphasis will be placed on task proficiency in spill containment, plugging, patching, diking and valve shut-offs on large commercial transporters. Stabilization of large and small chlorine leaks and decontamination will also be covered.
Prerequisites: FIRE F207.
Lecture + Lab + Other: 2 + 2 + 0

FIRE F216  Methods of Instruction for Emergency Services Training
3 Credits
Offered As Demand Warrants
Skills necessary to instruct emergency service courses including adult education techniques, classroom setup, use of audiovisual equipment, presentation, and evaluation methods of students and instruction.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F217  Hazardous Materials Technician Refresher
1 Credit
Offered As Demand Warrants
Information and skills required for protection and safety of personnel engaged in response and field cleanup of hazardous materials and substances at the hazardous materials technician level.
Prerequisites: FIRE F206 or equivalent with certification that may not be expired for more than one calendar year.
Lecture + Lab + Other: 1 + 0 + 0

FIRE F218  Advanced Rescue Practices
3 Credits
Offered As Demand Warrants
Provides instruction in four of the most common rescue situations that fire departments encounter in an Interior Alaska rescue: vehicular extrication, rope rescue, confined space rescue and ice/water rescue. Class stresses basic knowledge and hands-on experience. All students are required to wear a complete set of fire department-approved protective clothing (turnout gear). Limited quantities are available for loan through the Emergency Services Program Coordinator.
Prerequisites: EMS F170; FIRE F117.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F219  Rapid Intervention Company Operations
3 Credits
Offered As Demand Warrants
Provides firefighters with the knowledge and skills necessary to work safely and respond appropriately to life-threatening situations. Includes rapid intervention team building skills, self rescue techniques and the knowledge to handle a mayday or high risk/threat situation. Completion of course will qualify students for the state of Alaska certification testing process. All students are required to wear full firefighter personal protective equipment. Limited quantities of PPE are available for loan through the program coordinator.
Prerequisites: FIRE F117, FIRE F131, FIRE F133, FIRE F135 and FIRE F137, or department head approval.
Lecture + Lab + Other: 2.5 + 1 + 0

FIRE F220  Emergency Services Safety, Health and Survival
3 Credits
Offered Fall
This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior changes throughout the emergency services. This interactive course will examine current and future issues in emergency services including close calls, near misses, line of duty deaths, risk management, mitigation, and personal and organizational accountability.
Prerequisites: FIRE F101, FIRE F131, FIRE F133, FIRE F135 and FIRE F137.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F232  Firefighter II
3 Credits
Offered Spring
Advanced technical study of fire alarms, communications, fire behavior, self-contained breathing apparatus, rescue, safety, ladders, fire hose, nozzles and appliances, fire streams, water supplies, sprinklers, overhaul and inspections. All students are required to wear a complete set of fire department approved protective clothing (turnout gear). Limited quantities are available for loan through the emergency services program coordinator.
Prerequisites: FIRE F131; FIRE F133; FIRE F135; FIRE F137.
Special Notes: An eight-hour personal protective equipment and self-contained breathing apparatus safety orientation must be completed in order to participate in live fire exercises.
Lecture + Lab + Other: 2 + 2 + 0

FIRE F244  Firefighter Internship, Series 4
1 Credit
Offered As Demand Warrants
Practical experience in fire operations and training by arrangement through local fire departments.
Prerequisites: FIRE F145 or FIRE F147.
Lecture + Lab + Other: 0 + 2 + 0

FIRE F246  Firefighter Internship, Series 5
1 Credit
Offered As Demand Warrants
Practical experience in fire operations and training by arrangement through local fire departments.
Prerequisites: FIRE F244.
Lecture + Lab + Other: 0 + 2 + 0
FIRE F248  Firefighter Internship, Series 6
1 Credit
Offered As Demand Warrants
Practical experience in fire operations and training by arrangement through local fire departments.
Prerequisites: FIRE F246.
Lecture + Lab + Other: 0 + 2 + 0

FIRE F251  Wildland Firefighter IV
3 Credits
Offered As Demand Warrants
This course is intended to meet the training needs of the first line leadership positions in wildland fire suppression. Lessons are designed to produce student proficiency in the performance of duties from initial dispatch through demobilization back to the home unit. Topics include operational leadership, preparation and mobilization, assignment preparation, size up, developing a plan of action, risk management, entrapment avoidance, safety and tactics, offline duties, demobilization, and post incident responsibilities. Portions of the course will be blended learning with some lessons online. This course is based on National Wildlife Coordinating Group (NWCG) courses: S-200 Initial Attack Incident Commander; S-230 Crew Boss (Single Resource).
Prerequisites: FIRE F151; WFS F153 and FIRE F155.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F252  Wildland Fire Prevention I
3 Credits
Offered As Demand Warrants
Designed to enhance the basic skill and knowledge of personnel assigned responsibilities for wildfire prevention. Additionally, this course will teach sound wildland fire observations and scene of origin protection practices that enable the first responders to identify and preserve evidence of fire cause. An introduction to Alaskan wildland fire prevention statutes, regulations and enforcement procedures will be included. This course is based on National Wildlife Coordinating Group (NWCG) courses: P-101 Fire Prevention Education I; Fi-110 Wildland Fire Observation and Origin Protection.
Prerequisites: FIRE F151.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F253  Wildland Fire Investigation I
3 Credits
Offered As Demand Warrants
Consistent fundamentals and technical knowledge base needed for the wildland fire origin and cause determination investigator (INVF). The concepts taught will include recognizing and conducting origin and cause determination, preservation of evidence and documentation, which will aid an investigator to perform at a professional level on a national basis. This course is based on a National Wildlife Coordinating Group (NWCG) course: Fi-210 Wildland Fire Origin and Cause Determination.
Prerequisites: FIRE F151; FIRE F155 and FIRE F252.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F254  Incident Finance and Administration
1.5 Credits
Offered As Demand Warrants
Incident business management objectives, including duties and responsibilities of the Incident Command System (ICS) finance/administration section relating to management practices and programs. Parts of this course are presented in a blended learning format. This course is based on a National Wildfire Coordinating Group (NWCG) course: S-260 Interagency Incident Business Management.
Lecture + Lab + Other: 1.5 + 0 + 0

FIRE F255  Wildland Fire Behavior II
2 Credits
Offered As Demand Warrants
This course will give students an understanding of the determinants of fire behavior through studying input datum for fire (weather, slope, fuels and fuel moisture). Operation of fire behavior prediction tools, assessing and selecting proper inputs, interpreting the results in terms of rate of spread, fire line intensity, potential for extreme fire behavior, and documentation processes. This course is based on a National Wildlife Coordinating Group (NWCG) course: S-390 Introduction to Wildland Fire Behavior Calculations.
Prerequisites: FIRE F155.
Lecture + Lab + Other: 2 + 0 + 0

FIRE F256  Wildland Fire Planning and Multiple Use Management
3 Credits
Offered As Demand Warrants
Fire management and its role in a multiple use resource program. Includes prescribed wildfire practices, environmental concerns, management goals and objectives, and pre-fire planning.
Prerequisites: FIRE F151; WFS F153; FIRE F155.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F257  Wildland Fire Helicopter Management
2 Credits
Offered As Demand Warrants
A comprehensive examination of interagency government helicopter operations to prepare the student to perform the job of Helicopter Manager. Topics covered include: agency policy, flight manuals, helicopter capabilities and communications, flight following, fueling procedures, contract administration and pay documents, pre and post-use inspections, risk management and required safety procedures, general and specialized helicopter operations such as qualifying landing areas, transportation of passengers and cargo, initial attack operations, and sustained support to incidents. This course is based on a National Wildlife Coordinating Group (NWCG) course: S-372 Helicopter Management.
Prerequisites: WFS F157.
Lecture + Lab + Other: 2 + 0 + 0

FIRE F258  Wildland Fuels Management
3 Credits
Offered As Demand Warrants
Use of fire as a resource management tool. Natural and prescribed fire planning. Development and procedures to meet management objectives, components for conducting safe, prescribed burning.
Prerequisites: FIRE F151; FIRE F155; FIRE F262; WFS F153.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F262  Wildland Fire Tactical Operations
2 Credits
Offered As Demand Warrants
This course is intended to produce proficiency in the selection and implementation of wildland fire suppression tactics necessary at the strike team/task force leader level. Topics include fire line construction, use of hand tools, heavy equipment, water and engines, firing operations and using combinations of resources. This is an advanced level course for trained and experienced wildland firefighters. This course is based on a National Wildfire Coordinating Group (NWCG) course: S-336 Tactical Decision Making in Wildland Fire.
Prerequisites: FIRE F155 and FIRE F251.
Lecture + Lab + Other: 2 + 0 + 0
FIRE F264  Incident Business Practices
1.5 Credits
Offered As Demand Warrants
Incident business procedures required in entry level staff positions
including financial management of a large complex incident. This course
is based on a National Wildlife Coordinating Group (NWCG) course: S-261
Applied Interagency Incident Business Management.
Prerequisites: FIRE F254.
Lecture + Lab + Other: 1.5 + 0 + 0

FIRE F270  Wildland Fire Command Function
3 Credits
Offered As Demand Warrants
An overview of the command function including use of single and
unified command, roles and responsibilities of the incident commander
and staff, development and implementation of strategic decisions,
providing information to the media, and managing the incident from initial
attack of small, non-complex fires to larger, more complex initial attack
suppression organizations dealing with escape attack situations.
Prerequisites: FIRE F151; FIRE F155; FIRE F252; WFS F153.
Lecture + Lab + Other: 3 + 0 + 0

FIRE F276  Prescribed Fire I
2 Credits
Offered As Demand Warrants
Provide a thorough familiarization with the Interagency Prescribed Fire
Planning and Implementation Procedures Reference Guide. Students will
develop the knowledge and skills needed to prepare a prescribed fire plan,
in accordance with the guide, ready for technical review and approval.
This course is based on a National Wildlife Coordinating Group (NWCG)
course: RX-341 Prescribed Fire Burn Plan Preparation.
Prerequisites: FIRE F255.
Lecture + Lab + Other: 2 + 0 + 0

FIRE F277  Prescribed Fire II
2 Credits
Offered As Demand Warrants
This course is designed to introduce students to the tools and techniques
used to perform in the role of a prescribed fire burn boss. It leads the
students through the duties and responsibilities associated with the
position including evaluation and implementation of a prescribed fire
plan. This course is based on a National Wildlife Coordinating Group
(NWCG) course: RX-301 Prescribed Fire Implementation.
Prerequisites: FIRE F251; FIRE F255.
Lecture + Lab + Other: 2 + 0 + 0

FIRE F278  Prescribed Fire III
2 Credits
Offered As Demand Warrants
This course is designed to provide students with the knowledge and skills
necessary to recognize and communicate the relationships between
basic fire regimes and first order fire effects, the effects of fire treatments
on first order fire effects, and to maintain fire treatments to achieve
desired first order fire effects. This course is based on a National Wildlife
Coordinating Group (NWCG) course: RX-310 Introduction to Fire Effects.
Prerequisites: FIRE F255.
Lecture + Lab + Other: 2 + 0 + 0