

National Fire Academy
ARFF Model
Curriculum
Bachelor's (Core)

May 2015

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Personnel Management for the Fire Service

Course Description: This course examines relationships and issues in personnel administration and human resource development within the context of fire-related organizations, including personnel management, organizational development, productivity, recruitment and selection, performance management systems, discipline, and collective bargaining.

Prerequisites: None

Course Objectives:

Module I: Introduction to Personnel Management and Organizational Development

The students will:

1. Analyze the societal influences and issues affecting personnel management.
2. Demonstrate and evaluate how the four values serve as benchmarks for public agencies.
3. Analyze and evaluate how their organizations measure up to the five values associated with a positive work environment.
4. Apply the major functions of personnel management to a program or project.
5. Illustrate a systems approach to solving fire and emergency services personnel and organizational problems.

Module II: Motivation and Productivity

The students will:

1. Compare, contrast, and evaluate the major theories of motivation.
2. Compare, contrast, and evaluate the three managerial approaches to motivation.
3. Research and analyze an issue that has an impact on organizational productivity and effectiveness.
4. Compare, contrast, and evaluate the different approaches to quality management and productivity.

Module III: Recruitment, Selection, Promotion, and Human Resource Development

The students will:

1. Compare and contrast the provisions associated with Equal Employment Opportunity (EEO) and Affirmative Action and analyze the potential impact of the American with Disabilities Act (ADA) on employment in the emergency services.
2. Create an environment for the prevention of sexual harassment and discrimination.
3. Analyze the impact of various legislation and case law on employment decision issues generally and especially those relating to recruitment and selection of personnel.

4. Analyze the importance of the job analysis and job description with reference to personnel management functions.
5. Analyze and critique an agency's program for recruitment, selection, human resource development, promotion, and training and offer recommendations for improvement.
6. Compare and contrast training and education, mandatory training versus discretionary training, and technical skills training versus organizational training.

Module IV: Performance Management, Performance Appraisal, Corrective Action, and Discipline

The students will:

1. Compare, contrast, and evaluate different approaches to performance appraisal.
2. Demonstrate the appropriate evaluation procedures for performance-based criteria.
3. Differentiate between the concepts of corrective action and discipline and analyze the appropriate administration of discipline.
4. Illustrate how corrective measures benefit fire and emergency services personnel and organizations.
5. Evaluate performance management, corrective actions, and disciplinary systems.

Module V: Employee and Labor Relations

The students will:

1. Analyze agency strengths and weaknesses regarding compensation and health and safety programs and how they relate to motivation, morale, and productivity.
2. Research the trends and issues in contemporary society that affect the labor-management climate.
3. Analyze the components of a collective bargaining agreement and determine what issues are negotiable and non-negotiable.
4. Compare and contrast position versus interest-based bargaining techniques in arriving at a collective bargaining agreement.
5. Analyze the impact of mediation and binding arbitration on the collective bargaining process.

Outcomes:

1. Identify and explain contemporary personnel management issues.
2. Explain potential personnel management issues.
3. Classify the collective rules, procedures, laws, and policies that relate to personnel management issues.
4. Analyze simple/complex personnel management issues from recruitment to retirement.
5. Formulate recommendations and solutions to personnel management issues.
6. Explore organizational development and leadership styles and how they relate to personnel relationships.

Available Texts:

Crew Resource Management: Principles and Practice, (2011); Dyar/Evans/LeSage, Jones & Bartlett <http://www.jblearning.com/catalog/9780763771782/>

Fire Service Personnel Management, 3rd Edition (2010); Steven T. Edwards, Brady Publishing (Pearson) <http://www.bradybooks.com/store/product.aspx?isbn=0135126770>

Human Resource Management for the Fire and Emergency Services, (2012); IAFC/Trauernicht, Jones & Bartlett <http://www.jblearning.com/catalog/9780763749385/>

Point of Contact:

Michael.McCabe@fema.dhs.gov

Course Outline: Personnel Management for the Fire Service

- I. The Importance of Personnel
- II. Personnel Management and Organizational Development
 - A. Functions of Management and Leadership
 - B. Human Resource Management
 - C. Systems Approach to Program and Personnel Planning
- III. Motivation and Individual Productivity
 - A. Personnel Orientation Roles
 - B. Classic Management Theories
 - C. Levels of Job Satisfaction
- IV. Recruitment and Selection of Personnel
 - A. Selection Processes
 - B. Affirmative Action and EEO Programs
- V. Promotion
 - A. The Relationship Between Motivation and Promotion
 - B. Promotion Practices
 - C. Interviewing

- VI. Training and Education
 - A. Training and Education as Personnel Management Functions
 - B. Standards and Training
 - C. Training Required Under Federal Law
 - D. Technical Training
 - E. Training Program Components
 - F. Higher Education (College Level)

- VII. Performance Measurement Objectives
 - A. Job
 - 1. Documentation
 - 2. Description and Specifications
 - 3. Performance Standards
 - 4. Evaluation

- VIII. Discipline
 - A. Purpose
 - B. Types
 - C. Application
 - D. Due Process
 - E. Appeals and Grievances

- IX. Organizational Productivity
 - A. Concept of Productivity
 - B. System Analysis
 - C. Indicators
 - D. Resource Allocation
 - E. Improvement

- X. Compensation and Benefits
 - A. Developing the Compensation Package
 - B. Mandatory Fringe Benefits
 - C. Fair Labor Standards Act
 - D. Shift Scheduling

- XI. Employee and Labor Relations
 - A. Defining "Management"
 - B. Trends
 - 1. Organizational Trends
 - 2. Societal Trends
 - C. Policy Development Labor Relations in Volunteer and Nonunionized Departments

XII. Collective Bargaining and the Labor Agreement

- A. The Negotiating Process
- B. Typical Contract Categories

XIII. Contemporary Issues and Trends in Managing People and Programs

- A. An Era of Human and Individual Rights
- B. Trends in Managing People

Managerial Issues in Hazardous Materials

Course Description: This course presents current issues in management of a department-wide hazardous materials program. It includes issues that are pertinent to officers and managers in public safety departments, including regulations and requirements for hazardous materials (hazmat) preparedness, response, storage, transportation, handling and use, and the emergency response to terrorism threat/incident. Subjects covered include State, local and Federal emergency response planning, personnel and training, and operational considerations such as determining strategic goals and tactical objectives.

Prerequisites: None

Course Objectives:

Module I: Introduction to Hazardous Materials

The students will:

1. Explain the correlation between trends in chemical use and emergency-release incidents.
2. Recognize and define common terms used in hazmat response and regulation.
3. Summarize the intent of major pieces of legislation and standards that affect hazmat planning and emergency response.
4. Explain the purpose of the State and local emergency-response commissions and their role in managing hazmat in the community.
5. Identify the Federal agencies that are responsible for enacting and enforcing hazmat regulations and explain each agency's specific area of concern.

Module II: Community-Centered Managerial Issues

The students will:

1. List and explain the basic components of emergency planning for hazmat response and management.
2. Explain the purpose of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) and their roles in managing hazmat.
3. Recognize the difference between protection-in-place and evacuation strategies.
4. Explain the legal basis for the requirement of using Incident Command.
5. Differentiate between public information and public education.
6. Explain the legal requirements governing public access to information.
7. Discuss current concerns about information access versus homeland security.
8. Describe the benefits of community education programs.
9. Identify at least one automated community information program currently in use.

Module III: Department-Centered Managerial Issues

The students will:

1. Compare the similarities and critical differences between a "normal" fire emergency and hazmat emergency.
2. Describe the capabilities and limitations of first responders with regard to equipment, protective clothing, training, and experience.
3. Explain the training and emergency response requirements mandated in regulation 29 CFR 1910.120(q) and compare them to standard NFPA 472.
4. Explain the certification-of-competency requirement and recordkeeping requirements specified in the regulations.
5. Describe regulated occupancies and activities related to hazardous materials.
6. Demonstrate methods of ascertaining code compliance for storage, handling, and use of hazmat.
7. Locate applicable codes and regulations pertaining to storage, handling, and use of hazmat.

Module IV: Incident-Response Managerial Issues

The students will:

1. Assess the strategic goals and tactical options for managing a hazmat incident.
2. List and describe the steps involved in the management process at a hazmat incident.
3. Explain additional risk and response considerations for a hazmat incident that is also a terrorist incident.
4. State the differences between a Command Post and an Emergency Operations Center.
5. Name the different interest groups in the Command Post and explain their goals and concerns.
6. Define the terms *recovery* and *termination*.
7. Discuss the necessary documentation to be produced in conjunction with incident management.
8. Explain debriefing, post-incident analysis, and after-action reports.
9. Explain the Federal precedents for cost-recovery legislation.
10. Describe the four phases of termination.
11. Make response decisions based on risk analysis.

Module V: Program Management

Outcomes:

1. Explain and apply local, State, and Federal regulations concerning hazmat.
2. Participate meaningfully in the process of planning, organizing, and training for response to hazmat/terrorist incidents.

3. Interpret and act on departmental responsibility for hazmat response preparedness, incident prevention, and incident response.
4. Identify and work with representatives of multiple services, levels of government, and organizations in an organized incident-management structure.
5. Discuss issues pertaining to terrorism and tactical violence, including terrorism preparedness, response, and planning issues.
6. Develop an incident command organizational structure for a hazmat response using the guidelines set forth in the National Incident Management System (NIMS).

Available Texts:

Fire Protection Handbook, 20th Edition (2008); Volumes I and II, Arthur E. Cote (Editor), National Fire Protection Association <http://www.constructionbook.com/nfpa-national-fire-protection-handbook-2008-edition-fph2008/nfpa-code/>

Hazardous Materials: Managing the Incident, 4th Edition (2012); Hildebrandt/Noll/Rudner/Schnepp, Jones & Bartlett <http://www.jblearning.com/catalog/9781449670849/>

Point of Contact:

Michael.McCabe@fema.dhs.gov

Course Outline: Managerial Issues in Hazardous Materials

- I. Preparing for the Incident
 - A. The Hazardous Materials Incident Management System
 - B. Health and Safety
 - C. Incident Command
- II. Responding to the Incident
 - A. Site Management
 - B. Identifying the Problem
 - C. Hazard Assessment and Risk Evaluation
 - D. PPE and Equipment Selection
 - E. Information Management and Resource Coordination
 - F. Implementing Response Objective
 - G. Decontamination
- III. Terminating the Incident
 - A. Post Incident Review
 - B. Liability Issues

Advanced Principles in Fire and Emergency Services Safety and Survival

Course Description: This course examines the 16 Firefighter Life Safety Initiatives (FLSI)--what they mean and how they can be adapted by every fire and emergency service organization. The 16 FLSI were developed by the National Fallen Firefighters Foundation (NFFF) with the support and consultation of virtually every major United States fire service organization. The goal of this course, set at the supervisory and managerial level, is to formulate and put into practice health and safety procedures that address firefighter injuries and fatalities. The course will also focus on the need for a culture change, especially regarding how decisions made at the managerial and operational levels can exert influence to ensure that “everyone goes home.”

Prerequisites: None

Course Objectives:

At the end of this course, the student should be able to describe through research findings an advanced safety and survival issue affecting the fire and emergency services leader. The student is expected to defend their findings with confidence to the instructor and classmates during questioning about their topic. This information will help the fire and emergency services administrator perform as an effective risk manager by recognizing the adaptive, cultural, legal and political issues affecting public safety.

The students will:

1. Defend orally or online the elements of their chosen topic.
2. Classify what resources and skills are needed to address the topic.
3. Analyze the value of the topic to the fire service community.
4. Outline the priorities of addressing the problem solution.
5. Assess the importance of positively influencing other public and community leaders by being able to explain the issue to the non-fire and emergency population.

Course Outline:

Module 1: Introductions to Fire Service Culture and Responsibility

Module 2: Data Collection and Problem Statements

Module 3: Performance Standards and Emergency Response

Module 4: Internal and External Risk Management

Module 5: Fatality and Injury Investigations

Module 6: Behavioral Health in Emergency Services

Module 7: Professional Development

Module 8: International Trends

Module 9: America’s Burning Best Practices

Available Texts:

Fire and Emergency Services & Survival, 1st Edition (2011); Travis M. Ford. National Fire Fighters. Prentice Hall/Pearson

Advanced Fire Administration, 1st Edition (2011); Randy R. Bruegman. Prentice Hall/Pearson

Aircraft Accident Investigation

Course Description: This course is a detailed evaluation of methods and procedures involved in aircraft accident investigation. The organization, duties and procedures of the Aircraft Accident Investigation Board are analyzed. The student explores procedures for determining accident causes through analysis for such elements as the function and techniques employed by the trained accident investigator and the role of the specialized laboratory. Analysis is also made of reporting procedures and the all-important follow-up work designed to avoid similar or related aircraft accidents.

Prerequisites: None Course Objectives:

The course will familiarize students with current practices and principles of aircraft accident investigation and will examine the roles and responsibilities of government agencies in the process, as well as other parties involved. The course will provide practical exercises in aircraft accident investigation and a review of accident reports and documentation.

The students will:

1. Identify in writing definitions, terms, principles and investigative concepts discussed in accident investigation.
2. Evaluate and analyze in writing, the organizations conducting aircraft accident investigations in the United States.
3. Explain the history of the National Transportation Safety Board and gauge the evolution of investigative technologies on determining mishap causations.
4. Compare and contrast in writing, the initial actions at an aircraft accident site of a first responder at scene and on-scene accident investigator.
5. Demonstrate verbally or in writing, the basic techniques and procedures for photographing an aircraft crash site and extrapolating key evidence.
6. Evaluate in writing and appraise cause and effect relationships in the various techniques to record evidence discovered at an aircraft crash site.
7. Demonstrate and analyze in writing, the various techniques applying both deductive and inductive logic to explain the rationale for determining error chain factors in an aircraft accident.
8. Prepare a written case study and presentation on a specific aircraft accident; applying course mishap modeling formats e.g., SHELL, 5M, Reasons' concepts or an instructor-designated matrix.

Course Module Outline:

Module 1: History of Aircraft Accident Investigations
Module 2: Accident Investigation—Logic and Causation
Module 3: Investigative Organizations and Regulations
Module 4: Field Investigation and Data Collection
Module 5: Photography
Module 6: Witness Interviewing
Module 7: Human Factors
Module 8: Fire Investigation
Module 9 Structural Investigation

Available Texts:

Aircraft Accident Investigation, 2nd Edition (2006); Richard H. Wood and Robert W. Sweginnis. Endeavor Books, a division of Mountain States Lithographing.

Aircraft Crash and Emergency Management

Course Description: Theory, practices and techniques utilized in the response phase of aircraft crashes and emergencies are examined. This course is designed as a “real world” introduction to the field of emergency response at the CFR agency level, the airport response and administration levels and the related and associated entities involved in aircraft mishaps.

Prerequisites: None

Course Objectives:

The course provides students with an understanding of aircraft crash and emergency response at the administrative and operating levels, an overview of the many agencies and entities responsible for aircraft emergency planning and response, and will acquaint students with both the organization and conduct of response programs.

The students will:

1. Identify definitions, principles and key concepts discussed in the selected textbook and associated materials.
2. Demonstrate knowledge of the various elements of the emergency response system utilized for an aircraft accident.
3. Identify the various agencies and organizations tasked with response and management of aircraft accidents and emergencies.
4. Compare and contrast various specific airport emergency plans.
5. Describe the basic fundamentals of Aircraft Rescue and Fire Fighting techniques and apply those techniques to an aircraft emergency response scenario.
6. Analyze the responsibilities of the Aircraft Rescue and Fire Fighting personnel and other responders to secure the aircraft accident site and preserve accident site evidence.
7. Analyze the appropriate regulations governing airport and aircraft security to prevent hijacking, sabotage or terrorist activities.
8. Understand, explain and analyze the national Search and Rescue (SAR) Plan as it is integrated into local and national agencies planning to assist in location and rescue of aircraft accident survivors.
9. Examine the legal responsibilities of the airport, local community and federal government as they involve aircraft emergency response.
10. Prepare an analysis of a specific aircraft emergency response effort or evaluate an Airport Emergency Plan.

Course Module Outline

Module 1: After the Accident—Importance of Aircraft Crash and Emergency Management Planning

Module 2: Development of Emergency Response Systems in Aviation

Module 3: Regulatory Requirements for Airports

Module 4: Airport Emergency and Disaster Planning

Module 5: Reaction and Response

Module 6: Incident Management

Module 7: Aircraft Rescue and Fire Fighting (ARFF)

Module 8: Emergency Medical Services

Module 9: Body and Property Management

Module 10: Accident Investigation

Module 11: Aircraft Recovery

Module 12: Search and Rescue

Module 13: Airport Security

Module 14: An Aircraft Accident Management System

Available Texts:

Aircraft Rescue and Fire Fighting, 5th Edition (2008) Jeff Fortney and Clint Clausing. Fire Protection Publications/IFSTA.

Aviation Safety

Course Description: This course covers all facets for an aviation safety program including both flying safety and safety of ground operations. Major problem areas in aviation safety, safety program evaluation, and impact of accidents on industry are covered. Focus is on human factors, basic accident prevention programs, and the roles of various government and industry organizations have in preventing accidents.

Prerequisites: None

Course Objectives:

The student will understand the problems that must be overcome to manage an effective aviation safety program. The student will be able to identify the safety problems associated with the management of aviation resources and develop programs to prevent accidents. The student will learn the management concepts associated with the flying and non-flying segments of the aviation industry, such as risk management. Appropriate regulatory requirements of the FAA, OSHA, and EPA will be addressed as well as ICAO guidance.

The students will:

1. Explain the evolution of Federal aviation safety laws and regulations and describe their effectiveness in improving the safety of flight in air carrier operations.
2. Evaluate the various methods of how safety is measured and the current safety data systems, and compare and contrast their capabilities and limitations in measuring safety.
3. Categorize the types of human errors that are causal factors in aircraft accidents and assess the effectiveness of what is being accomplished to reduce human error.
4. Identify and assess the many safety practices and procedures that are used in aircraft ground operations to reduce the number and type of accidents and injuries.
5. Design a risk management program that can be applied to the management of flying and non-flying segments of the aviation industry.
6. Explain how Occupational Safety and Health standards and Environmental Protection Agency regulations effect ground operations and their economical accomplishment.
7. Propose and explain the duties and responsibilities of safety managers within the airlines and defend the expense of this position within the aviation industry.
8. Compare and contrast the available key elements of a safety program and develop a basic effective aviation safety program for a flying organization including risk management

Course Module Outline:

- Module 1: The Regulatory Framework
- Module 2: Regulatory Organization and Rulemaking
- Module 3: The National Transportation Safety Board
- Module 4: The Occupational Safety and Health Administration
- Module 5: The Environmental Protection Agency
- Module 6: Reporting and Recording of Safety Data
- Module 7: Review of Safety Statistics
- Module 8: Accident Causation Models
- Module 9: Risk Management
- Module 10: Human Factors in Aviation Safety
- Module 11: Airport Safety
- Module 12: Aviation Security
- Module 13: Airline Safety

Available Texts:

Commercial Aviation Safety, 5th Edition (2012) Clarence C. Rodrigues and Stephen K Cusick.
McGraw-Hill Publishing.