GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: JFT 2B DIVISION: 50 ALSO LISTED AS:

TERM EFFECTIVE: Spring 2016 CURRICULUM APPROVAL DATE: 09/28/2015

SHORT TITLE: FIRE COMMAND 2B

LONG TITLE: Fire Command 2B Hazardous Materials On Scene Commander

Units	Number of Weeks		Contact Hours/Week		Total Contact Hours
1	18	Lecture:	.45	Lecture:	8.1
		Lab:	1.77	Lab:	31.86
		Other:	0	Other:	0
		Total:	2.22	Total:	39.96

COURSE DESCRIPTION:

This course is intended to provide Incident Commanders with the skills and competency necessary to mitigate an emergency incident, initiate remedial action, and ensure the restoration of normal services with a comprehensive resource management approach. PREREQUISITE: Has Mat First Responder Operations or Equivalent ADVISORY: Incident Command/Scene Management

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES
- L - Standard Letter Grade
- P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:
- 02 - Lecture and/or discussion
- 03 - Lecture/Laboratory
- 04 - Laboratory/Studio/Activity

STUDENT LEARNING OUTCOMES:

1. Demonstrate competency in making an initial hazard analysis and risk assessment of an incident scene, and in developing the strategy and tactics necessary to mitigate the emergency.

Measure: Role Play, Skills Demonstration

PLO: 1,2,7

ILO: 2, 1, 7

GE-LO:

Year assessed or anticipated year of assessment: 2015

2. Demonstrate competency in establishing and organizing the Incident Command System to effectively manage on-scene resources.

Measure: Skills Demonstration, Performance

PLO: 1,2,7

ILO: 2, 1, 3, 7

GE-LO:

Year assessed or anticipated year of assessment: 2015

3. Outline the various roles to be played by the local, state, and federal agencies having the responsibility to respond to a hazardous materials incident, and demonstrate how to operate within a Unified Command Structure.

Measure: Project, Skills Demonstration

PLO: 1,2,7

ILO: 2, 1, 7

GE-LO:

Year assessed or anticipated year of assessment: 2015

4. Demonstrate competency in establishing site control measures including incident isolation, evacuation, site-entry and incident mitigation.

Measure: Skills Demonstration, Performance

PLO: 1,2,7

ILO: 2, 1, 7

GE-LO:

Year assessed or anticipated year of assessment: 2015

5. Initiate the remedial actions necessary to restore services to normal, including knowing where to obtain funding and how to select a clean-up contractor

Measure: Skills Demonstration, Performance

PLO: 1,2,7

ILO: 2, 1, 7

GE-LO:

Year assessed or anticipated year of assessment: 2015

6. Demonstrate the competency in supervising an incident investigation, documenting the proceedings for credibility and initiating the criminal prosecution process.

Measure: Skills Demonstration, Performance

PLO: 1,2,7

ILO: 2, 1, 7

GE-LO:

Year assessed or anticipated year of assessment: 2015

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 09/28/2015

I. Hazard Recognition (1 hour)

A. MSDS Form (Materials Safety Data Sheet)

a. Manufactures' name

b. Address and telephone number

c. Chemical name

d. Trade name

e. Chemical family

f. Formula

B. CAS number (Chemical Abstract Service)

a. Composition

b. TLV (Threshold Limit Value)

c. PEL (Permissible Exposure Limits)

C. Physical Data

a. Boiling point

b. Specific gravity

c. Vapor pressure

D. Fire and Explosion Hazard Data

a. Flash point

b. Flammable Limits

c. Extinguishing agent

E. Health Hazard/s of the product

a. Exposure to material

1. chronic or acute

F. Reactivity Data

a. Stability

b. Condition to avoid

c. Incompatibility

d. Hazardous polymerization

e. Hazardous decomposition products

G. Spills and Leak Procedures

a. Spill and Leak procedure

b. Waste Disposal

c. Environmental Hazards

H. Special Protection Information

a. Respiratory protection

b. Ventilation

c. Eye protection

d. Other protective equipment

I. Special Precautions

a. Transportation Requirements

SPO: Review and identify various sources of product information such as MSDA, DOT Shipping Papers, Pesticide Labeling and Placards & Labels.

Out of Class Assignments: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

II. DOT Shipping Papers (.5 hours)

A. Information required on Shipping Papers

a. Type of packaging

b. Number of packages

c. Proper shipping name

d . Hazard class number

e . United Nations ID number

f. Weight or volume

g. Shippers name and address

h. Consignee's name and address

SPO: Identify the location and name of each shipping paper for the four (4) modes of transportation as well as naming key information contained in the shipping papers.

Out of Class Assignment: Review the section in the Command 2B Student Manual. Prepare for the Hazard Recognition quiz.

III. EPA Pesticide Labeling System (.5 hours)

A. Define the term "Pesticide" and list four basic classes

a . Insecticides

b. Fungicides

c . Herbicides

d . Rodenticides

B . Information listed on pesticide labels

a . Product name

b . Signal words

c . Ingredient Statement (active & insert)

d. EPA Registration number

e . Statement of physical or Chemical Hazards

SPO: Restate the importance of being able to locate and interpret the various pieces of information required by the EPA on their Pesticide Labeling System.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

IV. NFPA 704 Warning System (.5 hours)

A. Who are the intended users

a. Fire Agencies

b. Police Agencies

c. EMS Agencies, Organizations, Firms

d . Safety Engineers

e. Industrial Response Teams (CERT)

f . CalTrans and public works personnel

B. Where is the system found in use

a. Fixed Plant Facilities

b. Tank Firms

c. Storage Vessels

d. Industrial Buildings

e. Storage Areas

C. Where is the 704 System NOT used

a. Transportation

b. Packaging

D. Warning System Placard

a. Diamond configuration

b. Divided into four quadrants

c. Quadrant Coloring System

d. Numbering Identification

e. Special symbols and letters

SPO: State the purpose of the 704 System, who its

intended users are, where the system is used, list the various components of the system and identify color and numeral classification.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

V. DOT Placard & Labeling System (.5 hours)

A. List five Regulatory Agencies which the DOT administers the transportation of

Hazardous Materials

a. Federal Highway Administration

b. Federal Railroad Administration

c. U.S. Coast Guard

d. Federal Aviation Administration

e. Office of Pipeline Safety

B. Difference between placards & labels

C. Four pieces of information contained on placards and labels

a. Pictograph

b. Hazard class name

c. Hazard class number

d. Color

SPO: Describe the system, including administrators, the intended use, information contained in the system, and how to interpret hazardous materials transported over our highways.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

VI. Rail Car Container Recognition (.5 hours)

A. Railroad tank car profile recognition

B. "Specification" markings

C. "Tank Car" nomenclature

D. Stenciling of proper sipping names

E. " Intermodal" Tank Containers

a. Non-pressure

b. Tube-model

c. Specifications

d. Tank thickness

e. Design pressures

f. Reporting marks

SPO: Identify the type of tank car by interpreting the tank car's markings, lettering and specific plates.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

VII. Toxic Exposure (.5 hours)

A. LOCAL and TOXIC Exposure

a. Inhalation

b. Ingestion

c. Dermal Contact

d. Injection

B. Acute and Chronic toxicity

a. Immediate Exposure

b. Delayed Exposure

c. Long term Exposure

SPO: Define Local and Systemic toxic exposure and discuss the four basic methods of poisoning.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

VIII. Hazard Assessment (3 hours)

A. Hazardous materials problems in case studies of:

a. Morgan City, LA

b. Vancouver, BC

c. Texas City, TX

d. Bhopal, India

B. Safe response

a. Appropriate Response

b. Incident Size-up

c. Problem Identification

d. Report on Conditions

e. Identifying Immediate concerns

f. Development of initial Strategy & Tactics

C. Detailed & Specific Information & Various Sources

a. Chemical reference books

b. Emergency telephone services

c. Comprised chemical data bases

d. Direct on-scene advice

D. Define Terms;

a. Immediate concerns

1. Primary Objectives

2. Secondary Objectives

3. Level of Emergency

4. On-Scene Condition Report

Multiple-choice written exam and group exercise involving an incident scenario.

SPO: Demonstrate competency in making an initial risk assessment to evaluate the hazards presented by an incident scene, determine the level of emergency, and delivering initial condition reports.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

IX. Incident Command System (2 hours)

A. Six (6) Basic Management Concepts

a. Organization

b. Chain of Command

c. Unity of Command

d. Span of Control

e. Division of labor

f. Supervision and Leadership

B. Five (5) Major Sub-Systems Contained in ICS

a. On-scene management structure (ICS)

b. Standardized training

c. Qualifications process

d. Materials development

e. Utilization of technologies

C. Eight (8) Basic System Design Components used in ICS

a. Common terminology

b. Modular organization
c. Integrated communications
d. Consolidated action plans
e. Manageable span of control
f. Predesigned incident facilities
g. Comprehensive resource management
h. Unified Common structure
D. ICS is organized into five (5) major sectional areas
a. Command Section
b. Operations Section
c. Planning Section
d. Logistics Section
e. Finance Section
SPO: Identify the five major functional areas of the Incident Command Structure.
Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.
XI. Notification Requirements & Interagency Involvement (3 hours)
A. Mandatory reporting requirements
a. Level II & III Emergencies
b. State Emergency Notification Center
c. National Response Center
e. Incident Command
d. Local Agencies
e. State Agencies
f. Federal Agencies
B. Various local agencies that can be used as a resource to the Incident Commander
a. County Office of Emergency Services
b. Local Law Enforcement
c. Public Works Department
d. Health Departments
e. County Agricultural Commissioner
f. Sanitation & Flood Control Districts
g. Air Pollution Control Districts
C. Various state agencies that can be utilized as a resource to the Incident Commander
a. State Scene Management System
b. State Agency Coordinator
c. State Operating Team
d. California Highway Patrol
e. CALTRANS
f Office of Emergency Services
g. Department of Fish and Game
h. Department of Health service
i. Water resources control Board
D. Various federal agencies that can be utilized as a resource to the Incident Commander
a. Federal On-Scene Coordinator
b. National Response center
c. Environmental Protection Agency
d. United States Coast Guard

e. NOAA

E. Establishing a United Command Structure Illustrating the Concept of Matrix Management

a. Response of various agencies

b. Need of a unified management system

c. Final authority

d. The organization of Matrix Management

SPO: Demonstrate competency in implementing local, state and federal emergency response plans.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

XII. Site Control, Site Entry & Containment Operations (4 hours)

A. Need for establishing site control measures at a hazardous materials emergency

a. Deny entry to the public and other emergency responders

b. Methods of establishing initial isolation

c. Establishing parameter with reference sources

B. Concept of using work safety zones and describe each of the various zones

a. Exclusionary Zone (Hot Zone)

b. Contamination Reduction Zone (Warm Zone)

c. Support Zone (Cold Zone)

C. Considerations and aspects related to Mandatory Evacuation, Advisory Evacuation

a. Delay rescue attempts

b. Civil liberties

c. Refusal to evacuate

d. Sheltering in place

e. Use of evacuation templates and maps

D. Hazards and risks associated with personnel wearing specialized protective clothing

a. Physiological stressors

b. Psychological stressors

c. Conditioning of personnel

E. Three basic types of protective clothing

a. Structural Firefighting clothing

b. Specialized high temperature

c. Chemical resistant clothing

F. Emergency containment and the seven (7) basic methods of containment

a. Dikes

b. Dams

c. Absorption

d. Covering

e. Containerizing

f. Plugging and patching

g. Isolation & diversion

SPO: Demonstrate competency in establishing site-control measures and in determining work zones for the safety of response personnel.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

XIII. Clean-Up and Restoration (4 hours)

A. Importance of clean-up at a hazardous material incident

a. Aspects of financing clean-up efforts

1. primary responsibility
2. responsible parties
3. state superfund
4. federal superfund

B. Criteria that must be met to obtain funds from state or federal superfunds

a. alternative sources of obtaining funding

b. Selecting an appropriate clean-up contractor

C. Requirements for disposal of hazardous materials

D. Completing a Uniform Hazardous Materials Waste Manifest

E. Restoring of normal services

F. Terminating an incident

a. debriefing the incident

b. Post-incident analysis

c. Critiquing the incident

SPO: Complete a Uniform Hazardous Waste Manifest

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

IX. Liability & Risk Management (3 hours)

A. Criminal Liability and Civil Liability

a. Criminal Liability defined

b. Civil Liability defined

c. State Level Courts

d. Federal Level Courts

e. Compensatory Damages defined

f. General Damages defined

g. Punitive Damages defined

B. Develop good defenses against civil suits

a. Training

b. Documentation

c. Pre-planning

d. Standard Operating Policies & Procedures

e. Testing and maintenance of equipment

SPO: Demonstrate competency when conducting Risk Assessment and Risk Management Techniques.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

X. Documentation & Investigation (3 hours)

A . Purpose of documentation

a. Protect the agency

b. Protect the personnel

c. Claiming restitution from state or federal clean-up funds

d. Protect from criminal prosecution

B. Investigation of Incident

a. Requirements of the California Health& Safety Code

b Legal requirement of incident investigation contained in the:

1. California Haz Mat Incident Contingency Plan & Oil Spill Contingency Plan
2. Criminal Investigations
3. Ensuring safety of investigator

C. Standard Operating Procedure for Incident Commanders to follow while

conducting an investigation

a. Contact the DA's Office

b. Provision of expertise

c. Maintain security of incident scene

d. Preservation of evidence

e. Continue to document

f. Assess to special investigators

SPO: Describe the Standard Operating Procedure for conducting an incident investigation from the Incident Commander's point of view, and how to maintain the chain-of-custody for evidence collected.

Out of Class Assignment: Review the section in the Command 2B Student Manual and be prepared for the Hazard Recognition quiz.

XI. Student group exercises (scenarios) involving an incident simulation and multi-choice exams given after each section of training. (14 hours)

METHODS OF INSTRUCTION:

Skills Demonstration, Lecture, Scenario Training

This course has been designed to be presented in a combination lecture/application format with heavy emphasis on the participation of the student in guided study group excercises. The group excercises are intended to reinforce the main points of the text, and also to provide students with an opportunity to demonstrate competency in using incident command techniques in simulated incident scenarios.

METHODS OF EVALUATION:

Category 1 - The types of writing assignments required:

Percent range of total grade: 0 % to %

If this is a degree applicable course, but substantial writing assignments are not appropriate, indicate reason

Course primarily involves skill demonstration or problem solving

Category 2 -The problem-solving assignments required:

Percent range of total grade: 20 % to 30 %

Quizzes

Exams

Other: Group Exercises/ Scenarios

Category 3 -The types of skill demonstrations required:

Percent range of total grade: 50 % to 90 %

Class Performance/s

Performance Exams

Category 4 - The types of objective examinations used in the course:

Percent range of total grade: 30 % to 50 %

Multiple Choice

True/False

Completion

Other: Skills Demonstration Exam

REPRESENTATIVE TEXTBOOKS:

Required:

Emergency Training Services. Haz Mat On-Scene Commander, CA: Emergency Training Services, Inc., 2015. Or other appropriate college level text.

Reading level of text, Grade: 12Verified by: Doug Achterman

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Transferable CSU, effective 199870

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 1 Program Applicable

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department: JFT

CSU Crosswalk Course Number: 2B

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: C

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000173072

Sports/Physical Education Course: N

Taxonomy of Program: 213300