



Community Risk Reduction Program Management

Course Plan

Course Details

Certification:	Fire Marshal
CTS Guide:	Fire Marshal CTS Guide (March 2018)
Description:	This course provides an overview of the knowledge and skills needed to evaluate target risks and emergency incident data; manage a data and information management program; interpret data and information to a conduct risk analysis; create, implement, and evaluate a risk management solution or program, integrate risk management solutions with community stakeholders, and design and implementing facilitation plans.
Designed For:	A current or future Fire Marshal pursuing SFT certification or anyone seeking an overview of community risk reduction program management.
Prerequisites:	None
Standard:	Complete all activities and formative tests. Complete all summative tests with a minimum score of 80%.
Hours:	Lecture: 11:30 Activities: 6:00 Testing: 2:00
Hours (Total):	19:30
Maximum Class Size:	30
Instructor Level:	Primary Instructor
Instructor/Student Ratio:	1:30
Restrictions:	None
SFT Designation:	CFSTES

Required Resources

Instructor Resources

To teach this course, instructors need:

- *Managing Fire in the Urban Wildland Interface*
 - Kenneth Blonski, Cheryl Miller, Carol L. Rice
 - Solano Press Books
 - ISBN: 978-0-923956-96-7
- One of the following:
 - *Fire and Life Safety Educator* (1st edition)
 - Marsha Giesler
 - Delmar Cengage Learning
 - ISBN: 13-978-1-4283-0541-0
 - *Fire and Life Safety Educator* (3rd edition)
 - IFSTA
 - Fire Protection Publications
 - ISBN: 978-087939396-0
- NFPA 1037 Standard for Fire Marshal Professional Qualifications (2016)
- Activity materials
 - Information about a sample planned unit development in a Very High Hazard Severity Zone (Activity 2-1)
 - Sample community risk profile (Activity 2-5)
 - Risk analysis template (Activity 2-6)
 - Data showing loss of life in residential occupancies (Activity 2-7)
 - Sample implementation plan (Activity 2-10)

Online Instructor Resources

The following instructor resources are available online at

<http://osfm.fire.ca.gov/training/resources>

- None at this time

Student Resources

To participate in this course, students need:

- *Managing Fire in the Urban Wildland Interface*
 - Kenneth Blonski, Cheryl Miller, Carol L. Rice
 - Solano Press Books
 - ISBN: 978-0-923956-96-7
- One of the following:
 - *Fire and Life Safety Educator* (1st edition)
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 - Delmar Cengage Learning

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- *Fire and Life Safety Educator* (3rd edition)
 - IFSTA
 - Fire Protection Publications
 - ISBN: 978-087939396-0
- NFPA 1037 Standard for Fire Marshal Professional Qualifications (2016)
 - Physical copy or digital access

Facilities, Equipment, and Personnel

The following facilities, equipment, or personnel are required to deliver this course:

- Standard classroom equipped for 30 students
- Projector with appropriate laptop connections
- Whiteboard or easel pads with appropriate writing implements
- Wifi/Internet access

Unit 1: Introduction

Topic 1-1: Orientation and Administration

Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements in the course syllabus.

Enabling Learning Objectives

1. Identify facility requirements
 - Restroom locations
 - Food locations
 - Smoking locations
 - Emergency procedures
2. Identify classroom requirements
 - Start and end times
 - Breaks
 - Electronic device policies
 - Special needs and accommodations
 - Other requirements as applicable
3. Review course syllabus
 - Course objectives
 - Calendar of events
 - Course requirements
 - Student evaluation process
 - Assignments
 - Activities
 - Required student resources
 - Class participation requirements

Discussion Questions

1. What is a formative test? What is a summative test?

Activities

1. To be determined by the instructor

Topic 1-2: Fire Marshal Certification Process

Terminal Learning Objective

At the end of this topic, a student will be able to identify different levels in the Fire Marshal certification track, the courses and requirements for Fire Marshal certification, and be able to describe the capstone task book and testing process.

Enabling Learning Objectives

- Identify the different levels of certification in the Fire Marshal certification track
- Fire Marshal (standalone certification)

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2. Identify the courses required for Fire Marshal certification
 - Fire Marshal 1A: Administration and Professional Development
 - Fire Marshal 1B: Community Relations & Fire and Life Safety Education
 - Fire Marshal 1C: Fire Investigation Program Management
 - Fire Marshal 1D: Community Risk Reduction Program Management
 - Fire Marshal 1E: Regulatory Programs Management
 - Chief Fire Officer 3A: Human Resource Management
 - Instructor I: Instructional Methodology
 - Statutes and Regulations
 - G290 Basic Public Information Officer Course
3. Identify any other requirements for Fire Marshal certification
 - International Code Council (ICC) Fire Inspector II certification
4. Describe the capstone task book process
 - Complete all prerequisites and course work
 - Submit application and fees to request capstone task book
 - Complete all job performance requirements included in the task book
 - Must have identified evaluator verify individual task completion via signature
 - Must have Fire Chief or authorized representative verify task book completion via signature
 - Must be employed by a California Fire Agency in the position prior to submitting completed task book to State Fire Training
5. Describe the capstone testing process
6. Complete course work
7. Schedule online capstone test
8. Schedule skills evaluation test

Discussion Questions

1. Do you have any questions about the requirements for SFT Fire Marshal certification?

Activities

1. To be determined by the instructor

Unit 2: Community Risk Reduction

Topic 2-1: Community Risk Reduction Roles and Responsibilities

Terminal Learning Objective

At the end of this topic, a student, given definitions, will be able to define community risk reduction and its application to the role of the Fire Marshal.

Enabling Learning Objectives

1. Define “risk”
 - The possibility of loss or injury
 - Someone or something that creates an actual hazard or the perception of a hazard
2. Define “community risk reduction”

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- The process of identifying, assessing, and managing risks and making decisions that balance risk factors with mission benefits
 - “The essence of risk management lies in maximizing areas that we have some control over the outcome while minimizing the areas where we have absolutely no control over the outcome and the linkage between cause and effect is hidden from us.” (Peter L. Bernstein)
 - Programs, actions, and services used by a community, which prevent or mitigate the loss of life, property, and resources associated with life safety, fire, and other disasters within a community. (Vision 20/20)
3. Identify the purpose of risk reduction
 - Risk mitigation
 - Incident prevention
 - Code development
 4. Identify public education needs
 5. Identify the roles of the Fire Marshal in risk management
 - Gathering and examining data
 - Identifying funding sources for risk management programs
 - Developing a risk management program
 - Pre-fire planning
 - Fire loss
 - Hazardous materials
 - Wildland urban interface
 - Injury
 - Disaster preparedness (disaster resistance)
 - Youth Firesetter Intervention program
 6. Identify the roles for other fire service divisions within a fire department in risk management programs
 - Suppression
 - Emergency Medical Services (EMS)
 - Training
 - Administration
 - Management

Discussion Questions

1. What does risk management look like in your agency?
2. How does the fire prevention bureau influence fire and life safety risk?
3. What is “acceptable risk”?
4. What is “all risk”?
5. What is “special risk”?

Activities

1. Using information about a planned unit development in a Very High Hazard Fire Severity Zone (provided by instructor), have the students role-play a community policy committee meeting.

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- Have one student facilitate the meeting
- Have the remaining students take on different stakeholders (i.e., chamber representative, homeowners association member, environmental advocate, council/board members, fire chief, fire marshal, developer, etc.)

CTS Guide Reference: CTS N/A

Topic 2-2: Evaluating Target Risks and Emergency Incident Data

Terminal Learning Objective

At the end of this topic, a student, given community profile levels of protection, occupancy types, percent of responses by occupancy type, perspectives of risk, and available data and information including loss, will be able to evaluate target risks and emergency incident data in order to develop a community risk profile based on an acceptable level of risk.

Enabling Learning Objectives

1. Describe risks associated with occupancy types
2. Describe levels of protection
3. Describe emergency response capability
4. Evaluate loss history
5. Identify potential impact of unique hazards associated with the community
6. Compare hazards, probability of occurrence, and consequence to established risk
7. Rank risks based on the effect to and in the community
8. Identify the five E's and how they can be used to collaborate with other community resources, departments, and agencies
 - Emergency response
 - Engineering
 - Enforcement
 - Education
 - Economic incentives

Discussion Questions

1. How do you prioritize target risks in your community?

Activities

- To be determined by the instructor

CTS Guide Reference: CTS 3-1

Topic 2-3: Managing a Data and Information Management Program

Terminal Learning Objective

At the end of this topic, a student, given identified inputs and outputs, a data collection system, and personnel, will be able to manage a data and information management program that collects, processes, stores, and maintains data and information.

Enabling Learning Objectives

1. Describe target risks
2. Describe available input and output
3. Describe strengths and weaknesses of available data management systems

4. Identify available personnel
5. Identify organizational policies related to data and information management
6. Identify funding sources
7. Establish the parameters for data and information collection
8. Maintain data management and storage systems

Discussion Questions

1. How do you verify the accuracy of your data?
2. How can you ensure that the individuals providing or collecting data are consistent?

Activities

1. To be determined by the instructor

CTS Guide Reference: CTS 3-2

Topic 2-4: Interpreting Data and Information to Conduct Risk Analysis

Terminal Learning Objective

At the end of this topic, a student, given output from a data/information management system, will be able to interpret data and information so that the data and information provide an adequate basis of knowledge to conduct risk analysis.

Enabling Learning Objectives

1. Describe types of data most often used to analyze risk
 - Annual reports and records
 - Emergency incident data
 - Facts
 - Trends
 - Target risks
 - Community input
 - Census data
 - Historical records
 - Financial records
 - Regulations
2. Identify facts, trends, and high-risk areas
3. Identify additional data sources available for analysis
 - Pandemics
 - Center for Disease Control (pandemic plans)
 - Storms/floods
 - Federal Emergency Management Agency (flood plain maps)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Earthquakes
 - US Geological Survey (USGS)
 - Terrorism (chemical, biological, radiological, nuclear)
 - Federal Bureau of Investigation (FBI)
 - Department of Homeland Security
 - Wildland urban interface

- Fire hazard severity zone maps
 - Hyperspectral imaging maps (fuel types and density)
 - Community wildfire prevention plans (CWPP)
4. Describe the probability vs. consequences model
 - High probability / High consequence (maximum hazard)
 - Emergency medical response, etc.
 - Low probability / High consequence (high hazard)
 - Pandemics, hazardous materials, major flooding, terrorism, earthquakes, WUI conflagration, etc.
 - High probability / Low consequence (moderate hazard)
 - Storms, heavy rains, trip and fall hazards, dumpster fires, yard trash fires, etc.
 - Low probability / Low consequence (remote hazard)
 - Isolated structure fire, ancillary building fire, etc.
 5. Analyze and interpret data and information

Discussion Questions

1. What are two very important data sources available to most fire agencies?
 - Computer Assisted Dispatch or communications records
 - Records management system or fire and EMS reports)
2. Where do target hazards fall in the probability vs. consequences model?
3. How does fuel management (or lack thereof) in the wildland urban interface alter the probability and consequences outcome?

Activities

1. To be determined by the instructor

CTS Guide Reference: CTS 3-3

Topic 2-5: Conducting Risk Analysis

Terminal Learning Objective

At the end of this topic, a student, given data and information trends, target risks, community input, and available resources, will be able to conduct risk analysis in order to develop a risk profile and management solutions.

Enabling Learning Objectives

1. Evaluate data and information trends
2. Identify community perceptions of risk
 - Community perception
 - Hot topics in the media at the time (earthquakes, abductions, terrorism, floods, etc.)
 - Can also be very micro (a traffic sign on their street)
 - Often don't recognize risks
 - Complacency ("That's why I have insurance.")
 - Fire service perception
 - Probability that a fire or emergency will occur
 - Risk is relative: low to extremely high

- Fire marshal perception
 - Leading community risk reduction is part of the job
 - Identification of risk helps define issues to address
 - Promote mitigation through engineering, education, and enforcement
- 3. Identify available resources
- 4. Define “risk profile”
- 5. Describe the types of risks faced by an organization and its exposure to those risks
- 6. Describe the components of a community risk profile
 - Protection levels
 - Loss history
 - Stakeholder, political, and community perceptions of risk
 - Topography, climate, geology, geography
 - Unique hazards within the community
 - Occupancy types
 - Percent of responses by occupancy types
 - Perception of risk
 - Demographics (age groups, cultural groups, socioeconomic groups)
 - Population density and anticipated growth
 - Construction types and features
 - Fire agency access
 - Water supply
- 7. Describe components of a community risk profile specific to a wildland urban interface
 - Fuel types and density
 - Influence fire behavior (speed and intensity)
 - Define how bad a fire will be
 - Topography and climate
 - Influence fire behavior (speed and intensity)
 - Define how bad a fire will be
 - Ignition-resistant construction features
 - Reduce the likelihood of flying embers igniting structures
 - Flying embers more likely to happen in WUI
 - Nature of the fuel burning is more susceptible to becoming airborne
 - Winds associated with these events cause embers to travel farther and find the fuels in non-ignition resistant structures
 - Emergency access egress
 - How easy it is for fire service to get in and people to get out
 - Water supply
 - Potential for no public water supply system
 - Need to use water from swimming pools, private water tanks, rivers, etc.
 - Fuel mitigation measures and effectiveness
 - Slows or limits fire spread and reduces likelihood of direct flame impingement on structures

8. Describe potential solutions and constraints
 - Urban environment
 - Wildland/urban interface environment
 - Plants and animals protected by environmental laws
9. Evaluate risk
10. Compare risk to an established or perceived level of risk
11. Identify potential solutions

Discussion Questions

1. How can the use of a Geographical Information System (GIS) assist in assessing community risk?
2. To what audience should you direct a community risk report?

Activities

1. Given a sample community risk profile (provided by instructor), have students prepare a realistic community risk profile for their jurisdiction.
 - Prepare at least one paragraph as an overall summary.
 - Describe the various levels of risk in the area ranging from commercial and industrial to generic problems.
 - Include a broad review of target hazards or special risks.

CTS Guide Reference: CTS 3-4

Topic 2-6: Creating and Implementing a Risk Management Solution or Program

Terminal Learning Objective

At the end of this topic, a student, given community risk data and organizational goals and objectives, will be able to create and implement the most beneficial and cost-effective risk management solution(s) or program.

Enabling Learning Objectives

1. Describe how to analyze data from a community risk profile
2. Describe how to evaluate the effectiveness of existing solutions
3. Describe how to classify risk (probability vs. consequence)
4. Describe how to prioritize risks
5. Describe potential solutions
 - Passive vs. active mitigation
 - Passive: take steps to reduce impacts of risk beyond your control
 - Tsunami evacuation route signs, building placement, fire walls, fuel modification, etc.
 - Active: take steps to reduce potential risks before they happen
 - Public education, immunizations, mechanical smoke control, sprinklers, etc.
6. Identify factors that influence solution selection
 - Political influence
 - Budget and resource constraints
 - Community values and risk tolerance

- Community and stakeholder buy-in (critical throughout entire process)
- 7. Describe and demonstrate establishing SMART performance objectives
 - SMART: specific, measurable, attainable, realistic, time sensitive
- 8. Describe and demonstrate implementing solutions, including:
 - Adopted codes, regulations, and standards
 - City/county general plan
 - Public awareness and media
 - Responder training
 - Citizen training
 - Community evacuation plans
 - Resource management
 - Post-incident repopulation

Discussion Questions

1. Who determines the final priority of the identified risks in your community?
2. Are there instances when a single solution can address multiple risks?

Activities

1. Given a risk analysis sheet (provided by instructor), have students complete a risk analysis for a county hospital, a development in the wildland urban interface, or a large venue assembly in their jurisdiction applying a probability vs. consequences matrix to the community risk profile.
 - Using the risk analysis sheet, identify potential solutions and discuss factors that may influence the selection of a recommended solution.
 - Develop an implementation plan for a risk management solution within their jurisdiction.

CTS Guide Reference: CTS N/A

Topic 2-7: Evaluating Risk Management Solutions

Terminal Learning Objective

At the end of this topic, a student, given a risk analysis, organizational and community constraints, regulatory requirements, available resources, and financial impacts, will be able to evaluate risk management solutions in order to establish the most beneficial and cost-effective solution(s).

Enabling Learning Objectives

1. Describe the effects of external and internal influences on risk management solutions
2. Identify available resources
3. Describe and demonstrate evaluating solutions
 - Conducting drills
 - Reviewing post-incident data
 - Conducting public surveys or meetings
 - Re-evaluating fuel density
 - Assessing compliance with performance objectives
4. Evaluate costs associated with risk management solutions

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5. Identify and evaluate the effects of internal and external influences on the risk management solutions
6. Describe and demonstrate modifying solutions
 - In an effective systems, cycle never stops: analyze, implement, evaluate, revise

Discussion Questions

1. Why is documentation critical to the evaluation process?
2. What are some negative concerns that may come up regarding chosen solutions?

Activities

1. Given data showing loss of life in residential occupancies (provided by instructor), prepare a comparison showing the effectiveness of residential sprinklers as they relate to fire death and dollar loss reduction.
 - Example: Automatic Sprinklers: A 10 Year Study, Scottsdale, AZ, www.homefiresprinkler.org

CTS Guide Reference: CTS 3-5

Topic 2-8: Evaluating Risk Management Programs

Terminal Learning Objective

At the end of this topic, a student, given existing risk analysis, implemented solutions, and data and information applications, will be able to evaluate the risk management program in order to monitor and achieve continued improvement of program goals and objectives.

Enabling Learning Objectives

1. Describe risk management program goals and objectives
2. Identify available information
3. Identify established level of risk
4. Describe evaluation methodologies
5. Interpret and analyze data on the impact of the risk management program

Discussion Questions

1. How often should a risk management program be updated?
2. What next steps can you take when evaluation determines that solutions are too costly or there is not enough staff to address the issue?

Activities

1. To be determined by the instructor

CTS Guide Reference: CTS 3-9

Topic 2-9: Integrating Risk Management Solutions with Community Stakeholders and Related Organizational Groups

Terminal Learning Objective

At the end of this topic, a student, given organizational structure and constraints and interface with community individuals and organizations, will be able to integrate the risk management solutions with community stakeholders and related organizational groups in order to use the analysis and solution(s) for organizational planning, development, and implementation.

Enabling Learning Objectives

1. Describe the roles and responsibilities of community stakeholders and other organizational groups
2. Describe how the proposed risk management solution(s) affect those other units
3. Recognize the applicability of risk management solution(s) to the roles and responsibilities of community stakeholders and other organizational groups

Discussion Questions

1. What are differences and overlaps exist between public relations, public information, and public education?
 - How is this beneficial when working with community stakeholders?
2. What considerations should be made when applying the five E's to community stakeholders and/or organizational groups?

Activities

1. To be determined by the instructor

CTS Guide Reference: CTS 3-6 and 3-7

Topic 2-10: Designing and Implementing Facilitation Plans

Terminal Learning Objective

At the end of this topic, a student, given an identified fire safety problem, will be able to design and implement a plan in order to facilitate a new program, piece of legislation, or fire safety code.

Enabling Learning Objectives

1. Identify applicable codes, standards, and jurisdictional requirements and their development process
2. Describe how to develop an implementation plan
3. Describe consensus-building techniques
4. Use evaluative methods
5. Use consensus-building techniques
6. Use verbal and written communication skills
7. Organize plans
8. Develop an implementation plan
 - Timeframes
 - Budget
 - Resource allocation
 - Events and meetings
 - Publications
9. Use consensus-building techniques

Discussion Questions

1. A Risk Management program should be inclusive throughout an entire fire department; how can each division of suppression, EMS, prevention, training, and administration contribute to a community risk reduction program?
2. At what point should you start the consensus-building process?

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Activities

- Given a sample implementation plan (provided by instructor), have students develop an actual implementation plan for a new program, piece of legislation, form of public education, or fire safety code.

CTS Guide Reference: CTS 3-8

Time Table

Segment	Lecture Time	Activity Time	Total Unit Time
Unit 1: Introduction			
Topic 1-1: Orientation and Administration			
Lecture	0:30		
Activity 1-1: Determined by instructor		0:00	
Topic 1-2: Fire Marshal Certification Process			
Lecture	0:30		
Activity 1-2: Determined by instructor		0:00	
Unit 1 Totals	1:00	0:00	1:00
Unit 2: Community Risk Reduction			
Topic 2-1: Community Risk Reduction Roles and Responsibilities			
Lecture	1:00		
Activity 2-1: See recommended activity		1:30	
Topic 2-2: Evaluating Target Risks and Emergency Incident Data			
Lecture	1:00		
Activity 2-2: Determined by instructor		0:00	
Topic 2-3: Managing a Data and Information Management Program			
Lecture	1:30		
Activity 2-3: Determined by instructor		0:00	
Topic 2-4: Interpreting Data and Information to Conduct Risk Analysis			
Lecture	1:30		
Activity 2-4: Determined by instructor		0:00	
Topic 2-5: Conducting Risk Analysis			
Lecture	2:00		
Activity 2-5: See recommended activity		1:30	
Topic 2-6: Creating and Implementing a Risk Management Solution or Program			
Lecture	1:00		
Activity 2-6: See recommended activity		1:00	
Topic 2-7: Evaluating Risk Management Solutions			
Lecture	1:00		
Activity 2-7: See recommended activity		1:00	

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Segment	Lecture Time	Activity Time	Total Unit Time
Topic 2-8: Evaluating Risk Management Programs			
Lecture	0:30		
Activity 2-8: Determined by instructor		0:00	
Topic 2-9: Integrating Risk Management Solutions with Community Stakeholders and Related Organizational Groups			
Lecture	0:30		
Activity 2-9: Determined by instructor		0:00	
Topic 2-10: Designing and Implementing Facilitations Plans			
Lecture	0:30		
Activity 2-10: See recommended activity		1:00	
Unit 2 Totals	10:30	6:00	16:30
Lecture, Activity, and Unit Totals:	11:30	6:00	17:30

Course Totals

Segment Type	Time
Total Lecture Time (LT)	11:30
Total Activity Time (AT)	6:00
Total Testing Time (TT)	2:00
Total Course Time	19:30