

### MASTER COURSE OUTLINE

A. FIRE 1110 Hazardous Materials Operations

B. COURSE DESCRIPTION:

This course introduces the basic skills necessary to safely and effectively manage on-scene operations involving the uncontrolled release of dangerous chemicals. It focuses on those individuals in local jurisdictions who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. Those individuals respond in a defensive fashion without actually trying to stop the release as their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. **(2 Cr – 1.5 lect, .5 lab)**

C. \*\*Core Theme: Critical Thinking

D. MAJOR CONTENT AREAS:

- Hazardous Materials (hazmat) overview
- Properties and effects
- Recognizing and identifying the hazards
- Implementing a response
- Personal Protective Equipment (PPE), scene safety, and scene control
- Responses priorities and actions
- Decontamination techniques
- Terrorism awareness

E. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

<u>GOAL</u>	<u>OBJECTIVES</u>	<u>OUTCOMES</u>
** <u>Critical Thinking</u>	Students will be able to gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.	The student will successfully <ol style="list-style-type: none"> <li>1. define a hazardous material (hazmat).</li> <li>2. explain the need for a planned response to a hazardous materials incident.</li> <li>3. explain the difference between hazardous materials incidents and other emergencies.</li> </ol>
<u>CS</u>	understand the actions to be taken to protect themselves and others, to control access to a hazmat scene, and predict the likely behavior of a material and its container.	1. demonstrate the ability to properly utilize the current edition of the Department of Transportation (D.O.T.) Emergency Response

		<p>Guidebook.</p> <ol style="list-style-type: none"> <li>2. describe chemical and physical properties and their significance and impact on the behavior of the container and/or its contents.</li> </ol>
<u>CS</u>	understand how to survey an incident to identify the containers and materials involved.	<ol style="list-style-type: none"> <li>1. describe specific containers and container shapes that might indicate hazardous materials</li> <li>2. describe the NFPA 704 hazard identification system.</li> <li>3. describe material safety data sheets (MSDS) and shipping papers.</li> </ol>
<u>CS</u>	estimate the potential harm within the endangered area at each incident.	<ol style="list-style-type: none"> <li>1. describe how to plan an initial response.</li> <li>2. describe resources available for determining the concentrations of a released hazardous material.</li> <li>3. demonstrate initiating an Incident Command System (ICS) for hazardous materials incidents.</li> </ol>
<u>CS</u>	understand importance of and properly donning and doffing personal protective equipment (PPE).	<ol style="list-style-type: none"> <li>1. demonstrate the ability to don and doff appropriate personal protective equipment (PPE).</li> <li>2. describe the physical capabilities required and the limitations of personnel working in PPE.</li> </ol>
<u>CS</u>	understand establishing and enforcing scene control, including control zones and emergency decontamination, and communications between responders and to the public.	<ol style="list-style-type: none"> <li>1. describe search and rescue missions at hazardous materials incidents.</li> <li>2. describe exposure protection.</li> <li>3. describe defensive control activities for a variety of emergencies.</li> </ol>
<u>CS</u>	understand decontamination issues, implementing a planned response, and enforcing scene control procedures.	<ol style="list-style-type: none"> <li>1. describe how the potential for cross-contamination determines the need for emergency decontamination.</li> <li>2. describe emergency decontamination procedures.</li> <li>3. describe where and how decontamination takes place.</li> </ol>
<u>CS</u>	understand terrorism and the dangers posed by explosives, chemical and biological agents, and radiological incidents.	<ol style="list-style-type: none"> <li>1. describe the dangers posed by explosive devices and radiological incidents.</li> <li>2. explain the difference between chemical and biological agents.</li> <li>3. describe the need for decontamination of exposed victims and response personnel.</li> </ol>

F. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact the instructor or the Student Success Center at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

G. COURSE CODING INFORMATION:

Course Code U/Customer Driven; Letter Grade

Revision date: 02/17/11

AASC Approval date: 03/22/11

<b>*Riverland Community College Disciplines</b>	<b>MnTC Goal Number</b>
Communication (CM)	<b>1</b>
Natural Sciences (NS)	<b>3</b>
Mathematics/Logical Reasoning (MA)	<b>4</b>
History and the Social & Behavioral Sciences (SS)	<b>5</b>
Humanities and Fine Arts (HU)	<b>6</b>

<b>**Riverland Community College Core Themes</b>	<b>MnTC Goal Number</b>
Critical Thinking (CT)	<b>2</b>
Human Diversity (HD)	<b>7</b>
Global Perspective (GP)	<b>8</b>
Ethical and Civic Responsibility (EC)	<b>9</b>
People and the Environment (PE)	<b>10</b>

\*These five MnTC Goals have been identified as Riverland Community College Disciplines.

\*\* These five MnTC Goals have been identified as Riverland Community College Core Themes.

NOTE: The Minnesota Transfer Curriculum “10 Goal Areas of Emphasis” are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.