



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. Prerequisites: A grade of C or higher in ENGL 0960 or appropriate placement score. **(2 Cr – 1.5 lect, .5 lab)**

C. *Core Theme: Critical Thinking

D. RIVERLAND INSTITUTIONAL LEARNING OUTCOMES:

This course addresses the following Riverland Institutional Learning Outcome(s):

- ILO 1: critical thinking (*Core Theme Goal 2*)
- ILO 2: awareness of the larger global community (*Core Theme Goal 7 or 8*)
- ILO 3: ethical, engaged citizenship (*Core Theme Goal 9 or Goal 10*)
- ILO 4: communication and collaboration (*Discipline Goal 1 and by any learning outcome(s) involving communication or collaboration*)

E. 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

F. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

<u>GOAL</u>	<u>OBJECTIVES</u> Students will be able to	<u>OUTCOMES</u> The student will successfully
<u>*Critical Thinking</u>	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.	<ol style="list-style-type: none"> 1. define a hazardous material (hazmat). 2. explain the need for a planned response to a hazardous materials incident. 3. explain the difference between hazardous materials incidents and other emergencies.
<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.	<ol style="list-style-type: none"> 1. demonstrate the ability to properly utilize the current edition of the Department of Transportation (D.O.T.) Emergency Response Guidebook. 2. describe chemical and physical properties and their significance and impact on the behavior of the container and/or its contents.
<u>CS</u>	understand how to survey an incident to identify the containers and materials involved.	<ol style="list-style-type: none"> 1. describe specific containers and container shapes that might indicate hazardous materials. 2. describe the NFPA 704 hazard identification system. 3. describe material safety data sheets (MSDS) and shipping papers.
<u>CS</u>	estimate the potential harm within the endangered area at each incident.	<ol style="list-style-type: none"> 1. describe how to plan an initial response. 2. describe resources available for determining the concentrations of a released hazardous material. 3. demonstrate initiating an Incident Command System (ICS) for hazardous materials incidents.
<u>CS</u>	understand importance of and properly donning and doffing personal protective equipment (PPE).	<ol style="list-style-type: none"> 1. demonstrate the ability to don and doff appropriate personal protective equipment (PPE). 2. describe the physical capabilities required and the limitations of personnel working in PPE.
<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"> 1. describe search and rescue missions at hazardous materials incidents. 2. describe exposure protection. 3. describe defensive control activities for a variety of emergencies.

<u>CS</u>	understand decontamination issues, implementing a planned response, and enforcing scene control procedures.	<ol style="list-style-type: none"> 1. describe how the potential for cross-contamination determines the need for emergency decontamination. 2. describe emergency decontamination procedures. 3. describe where and how decontamination takes place.
<u>CS</u>	understand terrorism and the dangers posed by explosives, chemical and biological agents, and radiological incidents.	<ol style="list-style-type: none"> 1. describe the dangers posed by explosive devices and radiological incidents. 2. explain the difference between chemical and biological agents. 3. describe the need for decontamination of exposed victims and response personnel.

G. 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 Accessibility Services 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.

H. COURSE CODING INFORMATION:

Course Code U/Customer Driven; Letter Grade

Revision date: 02/17/11; 03/05/24

AASC Approval date: 03/22/11; 04/16/24

*These five MnTC Goals have been identified as Riverland Community College Core Themes. Every course in the Riverland Community College curriculum shall meet outcomes from one of these themes.

**These five MnTC Goals have been identified as Riverland Community College Disciplines. Riverland's MnTC courses also shall meet outcomes from a Discipline Area.

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.

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

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

Riverland