SYLLABUS

DATE OF LAST REVIEW : 02/2013
CIP CODE: 15.0508
SEMESTER: Departmental Syllabus
COURSE TITLE: Hazardous Materials Awareness and Operations
COURSE NUMBER: HZMT-0120
CREDIT HOURS: 3
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
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KCKCC issued email accounts are the official means for electronically communicating with our students.

PREREQUISITE(S): None

REQUIRED TEXT: Please check with the KCKCC bookstore, http://www.kckccbookstore.com/, for the required texts for your particular class.

COURSE DESCRIPTION:
The purpose of this course is to develop an emergency response contingency plan to deal with hazardous material or chemical emergencies in compliance with regulations in order to protect human health and the environment as well as to minimize an organization's risks. Students will also implement the various portions of the plan as required.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.
COURSE OUTLINE:
The course outline is indicated below and is subject to change as course development dictates.

I. Hazardous Materials Introduction
II. Hazardous Materials Identification
III. Awareness-Level Actions at Hazardous Materials Incidents
IV. Chemical Properties and Hazardous Materials Behavior
V. Incident Management
VI. Strategic Goals and Tactical Objectives
VII. Terrorist Attacks, Criminal Activities, and Disasters
VIII. Personal Protective Equipment
IX. Decontamination
X. Product Control
XI. Air Monitoring and Sampling
XII. Victim Rescue and Recovery
XIII. Evidence Preservation and Sampling
XIV. Illicit Laboratories

EXPECTED LEARNER OUTCOMES:
A. The student will be able to properly recognize hazardous materials incidents.
B. The student will be able to properly identify hazardous materials.
C. The student will be able to define Awareness-level actions at hazardous materials incidents.
D. The student will be able to discuss chemical properties and hazardous materials behavior.
E. The student will be able to describe proper management of a hazardous materials incident.
F. The student will be able to discuss decision making, strategic goals, and tactical objectives.
G. The student will be able to distinguish between terrorist attacks, criminal activities, and disasters.
H. The student will be able to determine the best practices for using PPE.
I. The student will be able to determine the best practices for decontamination.
J. The student will be able to determine the best practices for product control.
K. The student will be able to use air monitoring and sampling equipment.
L. The student will be able to demonstrate proper victim rescue and recovery techniques.
M. The student will be able to recognize proper evidence preservation and sampling procedures.
N. The student will be able to recognize illicit laboratories.

COURSE COMPETENCIES:
The student will be able to properly recognize hazardous materials incidents.

1. Student should be able to distinguish between hazardous materials incidents and other emergencies.
2. The student will be able to discuss the roles of Awareness-level personnel and Operations-level responders.
3. The student will be able to describe the various types of hazardous materials hazards.
4. The student will be able to explain each of the routes of entry for hazardous chemicals.
5. The student will be able to describe the U.S., Canadian, Mexican hazardous materials regulations and definitions.
6. The student will be able to discuss hazardous materials incident statistics.
The student will be able to properly identify hazardous materials.
7. The student should be able to identify the seven clues to the presence of hazardous materials.
8. The student should be able to discuss the occupancy types, locations, and pre-incident surveys that may indicate hazardous materials.
9. The student should be able to describe the container shapes that may contain hazardous materials.
10. The student should be able to identify placards, labels and markings that designate the presence of hazardous materials.
11. The student should be able to explain the written resources available to indicate the presence of hazardous materials.
12. The student should be able to discuss monitoring and detection devices.

The student will be able to define Awareness-level actions at hazardous materials incidents.
13. The student should be able to discuss predetermined procedures and emergency response plans.
14. The student should be able to describe notification requirements.
15. The student should be able to obtain information about a hazardous material using the ERG.
16. The student should be able to describe isolation and discuss denial of entry.
17. The student should be able to discuss terrorist incidents.

The student will be able to discuss chemical properties and hazardous materials behavior.
18. The student should be able to discuss the three states of matter.
19. The student should be able to discuss the flammability of various hazardous materials.
20. The student should be able to explain concepts such as vapor pressure, boiling point, specific gravity, solubility and miscibility.
21. The student should be able to explain the reactivity triangle.
22. The student should be able to describe the General Hazardous Materials Behavior Model.

The student will be able to describe proper management of a hazardous materials incident.
23. The student should be able to describe incident priorities.
24. The student should be able to discuss various incident management systems.
25. The student should be able to identify communication procedures and guidelines for use at hazardous materials incidents.

The student will be able to discuss decision making, strategic goals, and tactical objectives.
26. The student should be able to describe each of the steps of the basic problem-solving formula.
27. The student should be able to discuss isolation ad scene control.
28. The student should be able to explain the notification process.
29. The student should be able to discuss protection of responders, the public, the environment, and property.
30. The student should be able to describe recovery and termination of an incident.
The student will be able to distinguish between terrorist attacks, criminal activities, and disasters.

31. The student should be able to define terrorism.
32. The student should be able to distinguish between a terrorist attack and a routine emergency.
33. The student should be able to discuss explosive, chemical, biological, radiological, and nuclear attacks.
34. The student should be able to identify hazards of illegal hazardous materials dumps.
35. The student should be able to describe proper evidence preservation.

The student will be able to determine the best practices for using PPE.

36. The student should be able to discuss respiratory protection.
37. The student should be able to discuss protective clothing and ensembles.
38. The student should be able to don and doff different types of personal protective equipment (PPE).
39. The student should be able to discuss inspection, storage, testing, and maintenance of PPE.

The student will be able to determine the best practices for decontamination.

40. The student should be able to define and identify various decontamination methods.
41. The student should be able to describe the different types of victims that may receive decontamination.
42. The student should be able to describe and perform emergency decontamination.
43. The student should be able to describe set up and implement technical decontamination.
44. The student should be able to discuss and perform mass decontamination.

The student will be able to determine the best practices for product control.

45. The student should be able to describe each of the various spill control tactics.
46. The student should be able to perform spill absorption/adsorption, damming, diking, diversion, and retention.
47. The student should be able to discuss leak control and perform remote valve shutoff.
48. The student should be able to explain fire control.

The student will be able to use air monitoring and sampling equipment.

49. The student should be able to discuss air monitoring and sampling.
50. The student should be able to discuss concentrations and exposure limits.
51. The student should be able to explain the basics of air monitoring.
52. The student should be able to describe the selection and maintenance of detection and monitoring devices.
53. The student should be able to perform and ph test on an unknown liquid.
54. The student should be able to perform air monitoring with a multi-gas meter.

The student will be able to demonstrate proper victim rescue and recovery techniques.

55. The student should be able to discuss rescue operations.
56. The student should be able to conduct a triage.
57. The student should be able to identify rescue tools and equipment.
58. The student should be able to describe and demonstrate various rescue drag methods. 

*The student will be able to recognize proper evidence preservation and sampling procedures.*

59. The student should be able to discuss various hazards at crimes involving hazardous materials or weapons of mass destruction.

60. The student should be able to discuss the first responders role in investigations.

61. The student should be able to describe the different response phases at criminal hazardous materials/WMD incidents.

*The student will be able to recognize illicit laboratories.*

62. The student should be able to discuss general hazards at illicit laboratories.

63. The student should be able to identify and avoid booby traps at illicit laboratories.

64. The student should be able to describe illicit drug, chemical agent, explosive, and biological labs.

65. The student should be able to discuss remediation operations of illicit labs.

**ASSESSMENT OF LEARNER OUTCOMES:**
Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

**SPECIAL NOTES:**
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

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