COURSE OUTLINE
Hazardous Materials for First Responders

Course Description
FS 207. Hazardous Materials for First Responders. 3 hours credit. Corequisite: Concurrent enrollment in FS100. This course will enable the student to deal with an incident in a defensive fashion until trained help arrives. The student will learn how to control hazardous materials incidents using basic resources already possessed or are available at the scene and assess the aftermath of a weapon of mass destruction (WMD). The student will learn scene control, site safety, product identification and emergency decontamination procedures. This course covers competencies for the hazardous materials first responder at the Awareness and Operations level as contained in the National Fire Protection Association’s Standard 472.

Required Materials
For complete material(s) information, refer to https://bookstore.butlercc.edu

Supplemental Materials
Kansas Fire and Rescue Training Institute Hazardous Materials Awareness study guide http://www.continuinged.ku.edu/fire/sg/Haz_Mat_Awareness.pdf


Butler-assessed Outcomes
The intention is for the student to be able to:
1. Analyze an incident to determine the hazardous material (WMD) present and determine the scope of the problem and potential outcomes.
2. Plan an initial response to a hazardous materials/WMD incident.
3. Demonstrate competent use of hazardous materials response equipment.
4. Demonstrate the ability to perform practical skills outlined in the National Fire Protection Association’s Standard 472.

Learning PACT Skills that will be developed and documented in this course:
Through involvement in this course, the student will develop ability in the following PACT skill area(s):

Personal Development Skills
- Interpersonal interaction - Through a series of practical skill applications, the student will participate as part of a team and learn the value of teamwork.

Analytical Thinking Skills
- Critical thinking - Through the analysis of hazardous materials operations, the
student will develop the ability to effectively identify mitigation steps for various hazardous materials incidents and use those steps to develop an incident action plan.

**Technology Skills**
- Discipline-specific technology - Through the use of discipline-specific technology, the student will demonstrate practical skill required in meeting the competencies of the National Fire Protection Association's Standard 472.

**Major Summative Assessment Task(s)**
These learning outcomes and the Learning PACT skills will be demonstrated by:
1. Completing a comprehensive field-related exercise, including the required skills necessary to meet the minimum standards of a hazardous materials first responder at the Awareness and Operations levelss, as set forth by the National Fire Protection Association's Standard 472.

**Skills or Competencies**
Actions that are essential to achieve the course outcomes:
1. Demonstrate the ability to operate within the Incident Command System
2. Demonstrate the competent use of hazardous material response equipment
3. Demonstrate tactics to mitigate simulated hazardous materials incidents

**Learning Units**
I. Hazardous materials first responder qualifications and safety
   A. Regulations and standards
   B. Difference between hazardous materials incidents and other types of emergencies

II. Properties and effects
   A. Physical and chemical changes
   B. Critical characteristics of flammable liquids
   C. Exposure and contamination
   D. Weapons of mass destruction
   E. Routes of entry

III. Recognition and identification of hazards
   A. Containers
   B. Transportion of hazardous materials
   C. Transportation and facility markings
   D. Chemical references
   E. Potential terrorist incidents

IV. Estimation of potential harm and planning a response
   A. Exposures
   B. Initial response plan
   C. Personal protective clothing
   D. Respiratory protection
E. Decontamination

V. Implementation of the response plan
   A. Safety procedures
   B. Protective actions
   C. Incident command system

VI. Terrorism
   A. Terrorist incident response
   B. Devices
   C. Agents
   D. Operations

VII. Operations level: personal protective equipment
   A. Specific personal protective equipment
   B. Responder safety

VIII. Operations level: technical decontamination
   A. Technical decontamination procedure
   B. Emergency decontamination
   C. Response decontamination

IX. Operations level: mass decontamination
   A. Mass decontamination procedure
   B. Role of references sources in mass decontamination
   C. Evaluation of the effectiveness of mass decontamination
   D. Reporting and documentation
   E. Evidence preservation

X. Operations level: evidence preservation and sampling
   A. Analysis of the incident
   B. Preservation of evidence
   C. Procedures

XI. Operations level: product control
   A. Control options
   B. Recovery methods

XII. Operations level: victim rescue and recovery
   A. Tactical considerations
   B. Search and rescue and recovery

XIII. Operations level: response to illicit laboratories
   A. Identification and recognition
   B. Task and operations
XIV. Operations level: air monitoring and sampling
   A. Detection and monitoring
   B. Types of detectors and monitors

Learning Activities
Activities will include, but not be limited to, class discussions, lectures, classroom exercises, course projects, and field trips.

Grade Determination
The student will be evaluated through written exams, skill proficiency assessments, and other methods of evaluation at the discretion of the instructor.