SYLLABUS

DATE OF LAST REVIEW : 02/2013
CIP CODE: 43.0205, 43.0202, 43.0203
SEMESTER: Departmental Syllabus
COURSE TITLE: Fire Protection Equipment Alarm Systems
COURSE NUMBER: FRSC-0117
CREDIT HOURS: Three (3)
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
EMAIL: KCKCC issued email accounts are the official means for electronically communicating with our students.

PREREQUISITE (S): None

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

COURSE DESCRIPTION:
A study is made of the function and operation of all types of portable and fixed extinguishers. Students examine the use and operation of alarm systems and the required standard of water supply and protection systems. Automatic sprinklers and special extinguishing systems, including the analysis of various automatic signaling and detection systems, are also studied.

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:
Course content may vary, but will generally include the following:

I. Suppression Agents & Principles
   A. Theories of combustion
   B. Theories of suppression and extinguishment

II. Portable Fire Extinguishers
   A. Purpose of extinguishers
   B. Selection of extinguishers
   C. Selected types of extinguishers
   D. Installation and placement of extinguishers

III. Portable and Mobile Foam Equipment
   A. Types of fire fighting foam
   B. Chemical foam
   C. Mechanical foam
   D. Extinguishing effect of foam
   E. Portable and mobile foam equipment

IV. Foam Extinguishing Systems
   A. Hydrant and distribution systems
   B. Foam discharge outlets
   C. High expansion foam

V. Carbon Dioxide Extinguishing Systems
   A. Principles of carbon dioxide
   B. Characteristics of carbon dioxide storage systems
   C. Types of carbon dioxide extinguishing systems
   D. Reading in C02 systems

VI. Dry Chemical Extinguishing Systems
   A. Types of dry chemical agents
   B. Extinguishing effect of dry chemical agents
   C. Types of dry chemical extinguishing systems

VII. Halogenated Agent Extinguishing Systems
   A. Various halogenated fire extinguishing agents
   B. Effect of Halon 1301
   C. Types of Halon 1301 systems
   D. Applications of Halon 1301 systems

VIII. Explosion Suppression Systems
   A. History of explosion situations
   B. System design and components
   C. Selected readings in explosion suppression

IX. Specialized Extinguishing Systems
   A. Dry chemical gun
   B. Portable extinguishing systems
   C. Aqueous potassium carbonate system
   D. Wetting agents
   E. Friction reducing agents
   F. Inert gas extinguishment

X. Fire Detection Systems
   A. Purpose of detection systems
   B. Basic components of detection system and application

XI. Residential Fire Detection
   A. Value of residential smoke detectors
B. Characteristics of smoke production
C. Characteristics of residential smoke detectors
D. The utilization of residential smoke detectors
E. Residential detector evaluation
F. Smoke detector legislation
G. Placement of detectors

XII. Thermal Detection Systems
A. Thermal characteristics of fire
B. Thermal detector evaluation
C. Types of thermal detectors

XIII. Smoke Detection Systems
A. Operation principles of smoke detectors
B. Approval and evaluation procedures
C. Installation principles

XIV. Flame Detection Systems
A. Principles of operation
B. Approval procedures
C. Installation principles

XV. Apparatus
A. Provisions applying to all types of apparatus
B. Compliance with Federal Standards
C. Electrical power
D. The pump
E. Hose bodies
F. Water tanks
G. Aerial ladders
H. Elevating platforms
I. Water towers
J. Specialized apparatus

EXPECTED LEARNER OUTCOMES:
A. The student will be able to demonstrate an understanding of the theories of suppression and extinguishment.
B. The student will be able to demonstrate an understanding of selected types of extinguishers.
C. The student will be able to demonstrate an understanding of portable and mobile foam equipment system design and components.
D. The student will be able to demonstrate an understanding of carbon dioxide extinguishing systems.
E. Upon completion of the course the student will be able to demonstrate an understanding of the value of residential smoke detectors.
F. Upon completion of the course the student will be able to demonstrate an understanding of the principles of operation in the flame and heat detection systems.

COURSE COMPETENCIES:

Upon completion of the course the student will be able to demonstrate an understanding of the theories of suppression and extinguishment.

The student will be able to demonstrate an understanding of the theories of suppression and extinguishment.
1. The student will be able to describe the theories of combustion.
2. The student will be able to understand the theories of suppression and extinguishment.

The student will be able to demonstrate an understanding of selected types of extinguishers.
3. The student will be able to recognize the types of extinguishers.
4. The student will be able to evaluate the purpose of extinguishers.
5. The student will be able to define the terms of extinguisher system design and components.
6. The student will be able to properly label the parts of a basic extinguisher system.

The student will be able to demonstrate an understanding of portable and mobile foam equipment system design and components.
7. The student will be able to list the types of fire fighting foam.
8. The student will be able to understand the difference between portable and mobile foam equipment.

The student will be able to demonstrate an understanding of carbon dioxide extinguishing systems.
9. The student will be able to recognize carbon dioxide extinguishing systems.
10. The student will be able to explain the types of carbon dioxide extinguishing systems.
11. The student will be able to list the parts of a carbon dioxide storage system.
12. The student will be able to describe the fire tetrahedron.
13. The student will be able to describe the life cycle of fire.
14. The student will be able to describe the fire triangle.
15. The student will be able to explain the differences between types of dry chemical agents.
16. The student will be able to recognize the various halogenated fire-extinguishing agents.
17. The student will be able to list the parts of an explosion suppression system.
18. The student will be able to list the parts of an aqueous potassium carbonate system.

Upon completion of the course the student will be able to demonstrate an understanding of the value of residential smoke detectors.
19. The student will be able to identify the operation principles of smoke detectors.
20. The student will be able to list several installation principles of smoke detectors.
21. The student will be able to discuss the approval and evaluation procedures.
22. The student will be able to discuss smoke detector legislation.
23. The student will be able to explain the value of residential smoke detectors.

Upon completion of the course the student will be able to demonstrate an understanding of the principles of operation in the flame and heat detection systems.
24. The student will be able to identify the principles of operation in the flame detection systems.
25. The student will be able to identify the approval procedures for flame detection systems.
26. The student will be able to discuss the thermal characteristics of fire.
27. The student will be able to list the installation principles for flame detection systems.
28. The student will be able to understand the proper placement of detectors.
29. The student will be able to list the types of flame detectors.

ASSESSMENT OF LEARNER OUTCOMES:
Assessment methods may include, but are not limited to, the following: Homework, Assignments, Quizzes, Class Participation, Chapter Tests, and Final Exam. The grading scale and the process for calculating the course grades are to be determined by the individual instructors. This information will be included in each instructor’s syllabus.

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.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Academic Resource Center in Room 3354 or call 288-7670.