DATE OF LAST REVIEW: 02/2013
CIP CODE: 46.0201
SEMESTER: Departmental Syllabus
COURSE TITLE: Safety Orientation
COURSE NUMBER: CONS0101 (OSHA 10)
CREDIT HOURS: 1
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.
PREREQUISITES: KBOR approved Core Curriculum. Math Level 3 Recommended

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

Hazards, Heavy-Equipment, Crane, and Rigging Safety, Trenching Safety, Forklift Safety, Lockout/Tagout, Confined Spaces, and Concrete and Masonry.

**METHOD OF INSTRUCTION:** A variety of instructional methods may be used depending on content area. They may include but are not limited to lecture, multimedia, cooperative/collaborative learning, demonstrations, labs, on-the-job, internships, performance tests, and other learning experiences outside the classroom. Methodology will be selected to best meet student needs.

**COURSE OUTLINE:**

I. **MODULE 75501-04 – SAFETY ORIENTATION**
   A. OSHA safety.
   B. OSHA’s *General Duty Clause* and *1926 CFR Subpart C*.
   C. Impact of accidents.
   D. Four high-hazard areas.
   E. Hazard recognition.
   F. Construction health.
   G. Fall, electrical, fire, trenching, materials handling, and heavy equipment hazards.
   H. Appropriate personal protective equipment.
   I. Signs, signals, barricades, markers, and tags.
   J. Housekeeping procedures.
   K. Assured equipment grounding.
   L. Hand- and power-tool safety.
   M. Fall protection procedures.
   N. Ladders and scaffolding.
   O. Work permits and lockout/tagout.
   P. Emergency procedures.
   Q. Manual lifting.
   R. Hazards of heavy equipment.
   S. Rigging safety.
   T. Hand signals.

II. **MODULE 75101-03 – INTRODUCTION TO SAFETY**
   A. Compliance and best practices.
   B. Function of the Occupational Health and Safety Administration (OSHA).
   C. Accident costs.
   D. Materials handling.

III. **MODULE 75102-03 – HAZARD COMMUNICATION**
   A. Warning labels.
   B. Material safety data sheet (MSDS).
   C. Safety information on an MSDS.
   D. On-site safety.
IV. MODULE 75103-03 – PERSONAL PROTECTIVE EQUIPMENT
A. Personal protective equipment (PPE).
B. Use and care for personal protective equipment (PPE).
C. Three main types of respirators.

V. MODULE 75104-03 – WORK-ZONE SAFETY
A. Signs, signals, and barricades.
B. Highway work zones.

VI. MODULE 75105-03 – ELECTRICAL AND HIGH-VOLTAGE HAZARDS
A. Electricity and high voltage.
B. Effects of electrical shock.
C. Insulation and grounding.
D. Ground fault circuit interrupter (GFCI).
E. Ground fault circuit interrupter is requirement.
F. Assured equipment grounding conductor programs.
G. Lockout/tagout.

VII. MODULE 75106-03 – FIRE PROTECTION AND PREVENTION
A. Fuel sources.
B. Sources of ignition.
C. Handling and storage.
D. Fire extinguishers.
E. Types of fire extinguishers.
F. Uses a fire extinguisher.

VIII. MODULE 75107-03 – HAND- AND POWER-TOOL SAFETY
A. Types of power tools.
B. Uses of power tools.
C. Common power sources.
D. Risks associated with hand tools.
E. Risks associated with power tools.
F. Minimize the risks.

IX. MODULE 75108-03 – WELDING SAFETY
A. Safety hazards associated with welding.
B. Hot work permit.
C. Fire hazards in welding.
D. Handling and storing compressed gases.
E. Toxic fumes.
F. Prevention of injury to workers.
X. MODULE 75109-03 – FALL PROTECTION
   A. Safety hazards.
   B. Fall-protection equipment.

XI. MODULE 75110-03 – STEEL ERECTION
   A. Steel-erection.
   B. Safety hazards.
   C. Damage to workers, equipment and property.

XII. MODULE 75111-03 – WALKING AND WORKING SURFACES
    A. Hazards of surfaces.
    B. Accidents and injuries.
    C. Responding to accidents.

XIII. MODULE 75112-03 – LADDERS AND SCAFFOLDING
      A. Types of ladders and scaffolding.
      B. Safely using ladders and scaffolding.
      C. Set up and use ladders.

XIV. MODULE 75113-03 – HORIZONTAL DIRECTIONAL DRILLING HAZARDS
     A. Horizontal directional drilling (HDD).
     B. Safety hazards.
     C. Hazards associated with horizontal directional drilling.
     D. Utility strikes.
     E. Safety alert signs/symbols.

XV. MODULE 75114-03 – HEAVY-EQUIPMENT, CRANE, AND RIGGING SAFETY
    A. Types of heavy equipment.
    B. Hazards of heavy equipment.
    C. Safeguards and safety procedures.

XVI. MODULE 75115-03 – TRENCHING SAFETY
     A. Purpose of excavation.
     B. Safety hazards.
     C. On-site safety.
     D. Causes of an unstable trench.
     E. Recognizing soil types.
     F. Shoring, sloping, and shielding safety.

XVII. MODULE 75116-03 – FORKLIFT SAFETY
      A. Pre-shift inspection.
      B. Safe traveling.
      C. Safe load handling.
      D. Safely on ramps and docks.
E. Working safely around a forklift.

XVIII. MODULE 75117-03 – LOCKOUT/TAGOUT
   A. Lockout/tagout.
   B. Safety hazards.
   C. Safeguards with lockout/tagout.

XIX. MODULE 75118-03 – CONFINED SPACES
   A. Permit-required confined space and a non-permit-required.
   B. Entry permit.
   C. Confined spaces.
   D. Worker responsibilities.
   E. On-site safety.

XX. MODULE 75119-03 – CONCRETE AND MASONRY
   A. Hazards of concrete construction and masonry.
   B. Personal protective equipment (PPE).

XXI. ENVIRONMENTAL SUSTAINABILITY
   A. Environmentally safe waste disposal.
   B. Life cycle analysis.
   C. Recycled material.
   D. Low VOC emissions.
   E. New “green” materials.
   F. New “green” methods and practices.
   G. “Low impact” designs.

EXPECTED LEARNER OUTCOMES:

A. Module 75100-03. The student will be able to identify and describe the four types of hazards, PPE, terms and signals.
B. Module 75101-03. The student will be able to identify and describe OSHA best practices, accident costs and material handling.
C. Module 75102-03. The student will be able to identify and describe a MSDS and warning labels.
D. Module 75103-03. The student will be able to identify and describe the use and care of personal protective equipment, and the main types of PPE.
E. Module 75104-03. The student will be able to identify and define highway workzone safety, and perform hand signals correctly.
F. Module 75105-03. The student will be able to identify and describe the types of electrical and high-voltage hazards, their effects, and lockout/tagout.
G. Module 75106-03. The student will be able to identify and describe fire protection and prevention, sources of ignition, and safe handling.
H. Module 75107-03. The student will be able to identify and describe types and uses of hand- and power-tools, and safety risks.
I. Module 75108-03. The student will be able to identify and describe welding hazards, handling safety, causes of fumes, and prevention of injury.

J. Module 75109-03. The student will be able to identify and describe fall protection PPE and hazards.

K. Module 75110-03. The student will be able to identify and describe safety hazards, steel erection, and damage.

L. Module 75111-03. The student will be able to identify and describe the hazards of walking and working surfaces, and accident reporting.

M. Module 75112-03. The student will be able to identify and describe the types of ladders and scaffolding, set-up, and safety.

N. Module 75113-03. The student will be able to identify and describe symbols, safety, and hazards in horizontal directional drilling.

O. Module 75114-03. The student will be able to identify and describe the hazards, types of heavy-equipment, crane, and rigging, and safeguards.

P. Module 75115-03. The student will be able to identify and describe the hazards, safety practices, and identify soil types.

Q. Module 75116-03. The student will be able to identify and describe forklift safety inspection and operation.

R. Module 75117-03. The student will be able to identify and describe proper lockout/tagout procedures.

S. Module 75118-03. The student will be able to identify and describe worker responsibility, safety and permits for confined spaces.

T. Module 75119-03. The student will be able to identify and describe the hazards and PPE for concrete and masonry work.

U. The student will identify and describe sound environmental practices for construction workers, including waste disposal, life cycle analysis, green practices and low impact

COURSE COMPETENCIES:

Module 75100-03. The student will be able to identify and describe the four types of hazards, PPE, terms and signals.

1. The student will be able to identify and explain the role of OSHA in job-site safety.

2. The student will be able to identify and explain OSHA’s General Duty Clause and 1926 CFR Subpart C.

3. The student will be able to identify and describe the impact of accidents.

4. The student will be able to identify and identify the four high-hazard areas.

5. The student will be able to identify and demonstrate hazard recognition and risk assessment techniques.

6. The student will be able to identify and explain the basics of construction health.

7. The student will be able to identify and identify basic fall, electrical, fire, trenching, materials handling, and heavy equipment hazards, and explain the general safety procedures associated with them. Explain and demonstrate the use of appropriate personal protective equipment.

8. The student will be able to identify and explain and identify the various signs, signals,
barricades, markers, and tags used on a job site.

9. The student will be able to identify and demonstrate proper housekeeping procedures.
10. The student will be able to identify and demonstrate an understanding of assured equipment grounding conductor programs and the use of GFCIs.
11. The student will be able to identify and demonstrate and explain general hand- and power-tool safety guidelines. Explain your company- or site-specific fall protection procedures and requirements.
12. The student will be able to identify and demonstrate and explain the proper use of ladders and scaffolding.
13. The student will be able to identify and explain the use of work permits and lockout/tagout procedures.
14. The student will be able to identify and demonstrate and explain the emergency procedures for trenching accidents.
15. The student will be able to identify and demonstrate and explain the proper use of ladders and scaffolding.
16. The student will be able to identify and demonstrate proper manual lifting procedures.
17. The student will be able to identify and identify the hazards of working around or on heavy equipment.
18. The student will be able to identify and describe proper rigging safety procedures.
19. The student will be able to identify and demonstrate use of hand signals.

Module 75101-03. The student will be able to identify and describe OSHA best practices, accident costs and material handling.

20. The student will be able to identify and explain the difference between compliance and best practices.
21. The student will be able to identify and describe the purpose and function of the Occupational Health and Safety Administration (OSHA).
22. The student will be able to identify and explain how accident costs affect everyone on a job site.
23. The student will be able to identify and describe proper materials handling procedures and safeguards.

Module 75102-03. The student will be able to identify and describe a MSDS and warning labels.

24. The student will be able to identify and identify different types of warning labels.
25. The student will be able to identify and explain how a material safety data sheet (MSDS) is used.
26. The student will be able to identify and identify and apply the safety information on an MSDS.
27. The student will be able to identify and demonstrate and explain proper on-site safety and emergency-response procedures.

Module 75103-03. The student will be able to identify and describe the use and care of personal protective equipment, and the main types of PPE.

28. The student will be able to identify and describe, in general, the personal protective
equipment (PPE) needed for working on a construction site.
29. The student will be able to identify and describe how to properly use and care for personal protective equipment (PPE).
30. The student will be able to identify and describe the three main types of respirators used in construction.

Module 75104-03. The student will be able to identify and define highway workzone safety, and perform hand signals correctly.

31. The student will be able to identify and identify signs, signals, and barricades that will help you perform your job safely.
32. The student will be able to identify and identify the hazards and safeguard of working in a highway work zone.

Module 75105-03. The student will be able to identify and describe the types of electrical and high-voltage hazards, their effects, and lockout/tagout.

33. The student will be able to identify and describe the risks associated with working around electricity and high voltage.
34. The student will be able to identify and describe the effects of electrical shock on the human body.
35. The student will be able to identify and define insulation and grounding.
36. The student will be able to identify and describe how a ground fault circuit interrupter (GFCI) works.
37. The student will be able to identify and explain where a ground fault circuit interrupter is required.
38. The student will be able to identify and discuss the purpose of an assured equipment grounding conductor program.
39. The student will be able to identify and define lockout/tagout and describe how it protects workers.

Module 75106-03. The student will be able to identify and describe fire protection and prevention, sources of ignition, and safe handling.

40. The student will be able to identify and identify the typical fuel sources found on a construction site.
41. The student will be able to identify and identify the typical sources of ignition found on a construction site.
42. The student will be able to identify and explain the procedures for proper handling and storage of flammable materials.
43. The student will be able to identify and explain the classes of fire extinguishers and name the type of fire for which each is most effective.
44. The student will be able to identify and identify the type and use of a fire extinguisher from its label.
45. The student will be able to identify and use a fire extinguisher to put out a fire.
Module 75107-03. The student will be able to identify and describe types and uses of hand- and power-tools, and safety risks.

46. The student will be able to identify and identify different types of power tools.
47. The student will be able to identify and describe the uses of hand and power tools.
48. The student will be able to identify and list the five most common power sources for power tools.
49. The student will be able to identify and describe the risks associated with hand tools.
50. The student will be able to identify and describe the risks associated with each type of power tool.
51. The student will be able to identify and explain how to minimize the risks associated with operating hand and power tools.

Module 75108-03. The student will be able to identify and describe welding hazards, handling safety, causes of fumes, and prevention of injury.

52. The student will be able to identify and identify and describe the safety hazards associated with welding and metal cutting operations.
53. The student will be able to identify and identify the purpose and characteristics of a hot work permit.
54. The student will be able to identify and describe the fire hazards associated with welding operations.
55. The student will be able to identify and identify the hazards associated with handling and storing compressed gases.
56. The student will be able to identify and identify the hazards associated with toxic fumes generated by welding and cutting processes and the methods used to avoid these hazards.
57. The student will be able to identify and describe the methods used to prevent injury to workers, including use of correct personal protective equipment.

Module 75109-03. The student will be able to identify and describe fall protection PPE and hazards.

58. The student will be able to identify and explain and identify safety hazards associated with working at elevated heights.
59. The student will be able to identify and demonstrate how to properly use fall-protection equipment.

Module 75110-03. The student will be able to identify and describe safety hazards, steel erection, and damage.

60. The student will be able to identify and describe the steel-erection process.
61. The student will be able to identify and identify common safety hazards associated with steel-erection jobs.
62. The student will be able to identify and explain the safeguards that are required during a job to prevent personal injury and damage to equipment and property.

Module 75111-03. The student will be able to identify and describe the hazards of walking and working surfaces, and accident reporting.

63. The student will be able to identify and explain the hazards associated with walking and working surfaces.
64. The student will be able to identify and describe how to avoid accidents and injuries on walking and working surfaces.
65. The student will be able to identify and explain how to respond to accidents and injury on walking and working surfaces.

Module 75112-03. The student will be able to identify and describe the types of ladders and scaffolding, set-up, and safety.

66. The student will be able to identify and identify the different types of ladders and scaffolding used on a work site.
67. The student will be able to identify and describe how to safely use ladders and scaffolding.
68. The student will be able to identify and properly set up and use ladders and scaffolding.

Module 75113-03. The student will be able to identify and describe symbols, safety, and hazards in horizontal directional drilling.

69. The student will be able to identify and describe the horizontal directional drilling (HDD) process.
70. The student will be able to identify and identify common safety hazards associated with horizontal directional drilling jobs.
71. The student will be able to identify and describe how to avoid the hazards associated with horizontal directional drilling jobs.
72. The student will be able to identify and respond to utility strikes that may cause personal injury, equipment damage, and property damage.
73. The student will be able to identify and identify safety alert signs and symbols.

Module 75114-03. The student will be able to identify and describe the hazards, types of heavy-equipment, crane, and rigging, and safeguards.

74. The student will be able to identify and describe the types and uses of heavy equipment.
75. The student will be able to identify and identify the hazards associated with the operation of heavy equipment, including cranes and rigging.
76. The student will be able to identify and describe the safeguards and safety procedures used when working with heavy equipment.

Module 75115-03. The student will be able to identify and describe the hazards, safety practices, and identify soil types.
77. The student will be able to identify and describe the process and purpose of excavation.
78. The student will be able to identify and explain and identify safety hazards associated with excavation.
79. The student will be able to identify and demonstrate and explain proper on-site safety and emergency-response procedures.
80. The student will be able to identify and identify the indications and explain the causes of an unstable trench.
81. The student will be able to identify and explain the importance of recognizing soil types with regard to excavation.
82. The student will be able to identify and describe the procedures used in shoring, sloping, and shielding safety methods.

Module 75116-03. The student will be able to identify and describe forklift safety inspection.
83. The student will be able to identify and explain the elements of a pre-shift inspection.
84. The student will be able to identify and describe the practices for safe traveling.
85. The student will be able to identify and describe the practices for safe load handling.
86. The student will be able to identify and understand how to operate a forklift safely on ramps and docks.
87. The student will be able to identify and explain how to work safely around a forklift.

Module 75117-03. The student will be able to identify and describe proper lockout/tagout procedures.
88. The student will be able to identify and describe the lockout/tagout process.
89. The student will be able to identify and identify common safety hazards associated with lockout/tagout.
90. The student will be able to identify and describe the safeguards associated with lockout/tagout.

Module 75118-03. The student will be able to identify and describe worker responsibility, safety and permits for confined spaces.
91. The student will be able to identify and describe the difference between a permit-required confined space and a non-permit-required confined space.
92. The student will be able to identify and explain the purpose of an entry permit.
93. The student will be able to identify and explain the hazards associated with confined spaces.
94. The student will be able to identify and describe the responsibilities of all workers on the site.
95. The student will be able to identify and demonstrate and explain proper on-site safety and emergency-response procedures.

Module 75119-03. The student will be able to identify and describe the hazards and PPE for concrete and masonry work.
96. The student will be able to identify and explain and identify safety hazards associated with concrete construction and masonry work.

97. The student will be able to identify and demonstrate and explain proper on-site safety, including the use of personal protective equipment (PPE).

_The student will identify and describe sound environmental practices for construction workers, including waste disposal, life cycle analysis, green practices and low impact._

98. The student will be able to describe waste disposal methods for this industry according to EPA and industry guidelines.

99. The student will be able to describe the process of life cycle analysis in this industry based on industry guidelines.

100. The student will be able to identify recycled materials by label and industry practice.

101. The student will be able to define “low emission” and give two examples.

102. The student will be able to identify new “green” materials now being introduced or currently used in this industry.

103. The student will be able to describe new “green” practices and methods being instituted or currently employed within this industry.

104. The student will be able to identify and explain the term “low Impact” as it relates to the environment.

**ASSESSMENT OF LEARNER OUTCOMES:**

Student progress is evaluated by means that include, but not limited to, exams, written assignments, performance tests, 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.

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 Director of the Academic Resource Center in Rm. 3354 or call (913) 288-7670.