**BARTON COMMUNITY COLLEGE**

**COURSE SYLLABUS**

**Fall 2013**

# **GENERAL COURSE INFORMATION**

Course Number: OSHA 1011

Course Title: Excavation, Trenching and Soil Mechanics

Credit Hours: 2

Prerequisite: None

Division/Discipline: Technical Education Division

Course Description: This course focuses on Occupational Safety and Health Administration (OSHA) standards and the safety aspects of excavation and trenching. Students are introduced to practical soil mechanics and its relationship to the stability of shored and un-shored slopes and walls of excavations. Various types of shoring (wood timbers and hydraulic) are covered. Testing methods are demonstrated and activities conducted to allow students to use instruments such as penetrometers, torvane shears, and engineering rods.

# **CLASSROOM POLICY**

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

The College reserves the right to suspend a student for conduct that is detrimental to the College's educational endeavors as outlined in the College catalog.

Plagiarism on any academic endeavors at Barton County Community College will not be tolerated. Learn the rules of, and avoid instances of, intentional or unintentional plagiarism.

Anyone seeking an accommodation under provisions of the Americans with Disabilities Act should notify Student Support Services. Additional information about academic integrity can be found at the following link:

<http://academicintegrity.bartonccc.edu/>

# **COURSE AS VIEWED IN THE TOTAL CURRICULUM**

Course encompasses learning OSHA standards and the safety aspects of excavation and trenching. Practical soil mechanics are presented and its relationship to the stability of shored and un-shored slopes and walls of excavations. Topics Include: Principles and Applications, Sloping, Benching, and Shoring.

The transferability of all college courses will vary among institutions, and perhaps even among departments, colleges, or programs within an institution. Institutional requirements may also change without prior notification. It is the student's responsibility to obtain relevant information from intended transfer institutions to insure that the courses the student enrolls in are the most appropriate set of courses for the transfer program.

# **ASSESSMENT OF STUDENT LEARNING**

Barton Community College is committed to the assessment of student learning and to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton, as a learning college, in finding ways to improve student learning.

## Course Outcomes and Core Competencies

1. Describe the impact of job and workplace design on employee safety and health.
   1. Outline the standards given in 29 Code of Federal Regulations (CFR) 1926 Subpart P
   2. Identify the common hazards involved with open earth work and appropriate controls.
   3. Distinguish the duties and responsibilities of a competent person.
2. Explain the requirements for protecting excavations from cave-ins or other types of failure.
   1. Explain the requirements for the design of sloping and benching systems.
   2. Display by graphic summary, the process used to select protective systems.
   3. Describe the four classes of soil classification and identify the tests used to determine them.
   4. Using tools, demonstrate the various field tests for soil.
3. Explain the requirements for the design of sloping and benching systems.
   1. Interpret OSHA’s standards for the angle of repose.
   2. Differentiate and explain when a shoring or sloping system is used and under what conditions.
   3. Explain the actions required if damaged or defective material or equipment is discovered during an inspection.
4. Describe the limitations, proper installation and other requirements relating to protective systems.
   1. Determine when timber shoring for trenches should be installed.
   2. Explain the advantages for using aluminum hydraulic shoring for trenches.
   3. List alternatives to timber shoring in trenching operations.
   4. List the most frequent OSHA violations involving concrete and masonry construction and identify the controls necessary to eliminate the associated hazards.
   5. Describe the health hazards posed by concrete and the recommended controls.
   6. Determine the details of an emergency action plan that would be considered in compliance with OSHA requirements.
5. **INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS**
6. **TEXTBOOKS AND OTHER REQUIRED MATERIALS**
7. **REFERENCES**

# **METHODS OF INSTRUCTION AND EVALUATION**

# **ATTENDANCE REQUIREMENTS**

1. **COURSE OUTLINE**