

**I. COURSE INFORMATION:**

A. Division: Applied Technology & Transportation  
Department: Inspection Technology  
Course ID: INSPEC 010A  
Course Title: Fundamentals of Construction Inspection I  
Units: 3  
Lecture: 3 Hours  
Laboratory: None  
Prerequisite: None  
Corequisite: None  
Dept. Advisory: None

B. Catalog and Schedule Description: A basic study of soils engineering, soils construction methods, soils identification, and soils terminology and nomenclature.

**II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One**

**III. EXPECTED OUTCOMES:**

Upon successful completion of the course, the student should be able to:

- A. Define soil classification systems:
  - 1. Unified Soils Classification System
  - 2. American Society of Transportation and Highway Official (ASHTO)
- B. Identify soil types at construction sites:
  - 1. Corrosive
  - 2. Expansive
  - 3. Collapsible
- C. Read and interpret engineered soil reports
- D. Read and interpret grading plans
- E. Apply the basic principles of soil engineering to specific construction projects:
  - 1. Single family dwellings
  - 2. Retaining wall design
  - 3. Site drainage
  - 4. Soil as a construction element
  - 5. Foundation design

**IV. COURSE CONTENT:**

- A. Soil composition
  - 1. Volume mass relationship
  - 2. Basic terms
  - 3. Particle shape and size
  - 4. Soil terminology
- B. Classification systems
  - 1. Unified Soils Classification System
  - 2. ASSHTO
- C. Compaction
  - 1. Minimum Code requirements
  - 2. Design requirements
- D. Soil problems
  - 1. Earthquake faults
  - 2. Collapsible soils
  - 3. Expansive soils
  - 4. Corrosive soils
- E. Soils Reports -Code required information
  - 1. Borings
  - 2. Water table
  - 3. Bearing value

- 4. Foundation design
- F. Grading plan review
  - 1. Contours
  - 2. Spot elevations
- G. State laws
  - 1. Title 24 - Chapter 18 and 33
  - 2. Health and Safety Code
  - 3. Local Ordinances

**V. METHODS OF INSTRUCTION: (Please check all that apply and add any additional not listed.)**

- Lecture
- Class and/or small group discussion
- Critical evaluation of texts, newspapers, journal articles, and other printed research
- Critical evaluation of films, videotapes, audiotapes, or other media forms
- Classroom demonstrations
- Field trips
- Guest speakers
- Other:
- Other:
- Other:

**VI. TYPICAL OUT-OF-CLASS ASSIGNMENTS:**

- A. Reading Assignment. Reading assignments are required and may include (but are not limited to) the following: Read assigned chapters and answer questions at the end of each chapter.  
Typical Question: Explain the difference between sand and clay.
- B. Writing Assignment. Writing assignments are required and may include (but are not limited to) the following: Write correction notices at the end of each video.
- C. Critical Thinking Assignment. Critical thinking assignments are required and may include (but are not limited to) the following: Read California State Building Code Standards for soil classification and define soil types by grain size.

**VII. EVALUATION:**

A student's grade will be based on multiple measures of performance and will reflect the objectives explained above. A final grade of "C" or better should indicate that the student has the ability to successfully apply the principles and techniques taught in this course. These evaluation methods may include, but are not limited to, the following (Please check all that apply, and add additional ones not listed):

- Portfolios
- Projects
- Written papers or reports
- Presentations (oral and visual)
- Work performance (internships or field work)
- Lab work
- Comprehensive examinations (cumulative finals or certifications)
- Peer evaluation
- Self evaluation
- Classroom participation
- Homework
- Other:
- Other:
- Other:

**VIII. TYPICAL TEXTS:**

- A. McCarthy, David F. Essentials of Soil Mechanics and Foundations. Prentice Hall, Englewood Cliffs, New Jersey, 2005.
- B. Field Inspection Manual. International Code Council, Birmingham, AL, 2003.
- C. California Building Code. International Code Council, Birmingham, AL, 2003, or State Adopted Edition.

**IX. OTHER SUPPLIES REQUIRED OF STUDENTS:**

Three-ring binder