

Last updated: 12/98

San Bernardino Valley College  
Course Outline

I. CATALOG DESCRIPTION:

Division: Technical Department: Welding  
Course ID #: INSPEC 011  
Course Title: Fundamentals of Construction Inspection II  
Hours: 3 hours/week lecture Length: 17 weeks minimum  
Units: 3  
Prerequisite: INSPEC 010  
Corequisite: None  
Course Description: A basic study of concrete and asphalt including cements, aggregates, admixtures, job and batch control, properties of concrete, finishing, curing, and reinforcing.

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

III. EXPECTED OUTCOMES FOR STUDENTS:

Upon completion of this course, students will be able to apply knowledge and inspection skills to:

- A. Identify concrete and asphalt types.
- B. Describe the process of concrete and asphalt manufacture.
- C. Regulate the use of concrete and asphalt in structures.
- D. Read and interpret a batch ticket.
- E. Follow an orderly process of inspection.
- F. Identify soil types that may attack and degrade concrete.
- G. Evaluate steel reinforcement in concrete foundations.

IV. CONTENT:

- A. Cement
  - 1. Types
  - 2. Function
- B. Basic materials of concrete
  - 1. Fines
  - 2. Course materials
  - 3. Light weight materials
- C. Process of concrete manufacture
  - 1. Portland cement
  - 2. Aggregates
  - 3. Admixtures
- D. Reinforcing steel in concrete design
- E. Compressive strength
- F. Tensile strength
  
- G. Concrete design and strength

- H. Plain
- I. Special
- J. Tilt-up construction
  - 1. Erection details
  - 2. Safety procedures
- K. Hot and cold methods of installation
- L. Asphalt manufacture
  - 1. Use of asphalt as a paving material
  - 2. Wheel loads
- M. Geographical requirements
- N. Retaining walls
- O. Engineered
- P. Permits required
- Q. Stressed concrete
- R. Building failures in concrete construction
  - 1. Design
  - 2. Inspections

V. METHODS OF INSTRUCTION:

- A. Directed discovery discussions, lectures, video viewing, and guest speakers.
- B. Instructor/student conference to analyze specific construction problems.
- C. Students will be required to perform six hours of outside class readiness and to observe and report on construction projects in the community.
- D. Students will view videos and write corrections for code violations.

VI. TYPICAL ASSIGNMENTS:

- A. Read assigned chapters and complete study questions.  
Typical Question: Describe the Uniform Building Code (UBC) requirement for concrete special inspection.
- B. Read a batch ticket and identify the concrete type and compressive strength.
- C. Determine the Uniform Building Code (UBC) minimum compressive strength for a single family structure in a high sulfate area.

VII. EVALUATION:

- A. Methods of Evaluation:
  - 1. Graded correction notice reports
  - 2. Mid-term
  - 3. FinalTypical Question: List the minimum size rebar required by the Uniform Building Code (UBC) for a single family, single story wood framed structure.
- B. Frequency of Evaluation:
  - 1. Correction notice report at the end of each topic
  - 2. One mid-term examination
  - 3. One final examination
  - 4. Periodic feedback during instructor/student conferences

VIII. TYPICAL TEXT:

American Concrete Institute Manual, 1997 or current edition, International Conference of Building Officials, Whittier, CA

Field Inspection Manual, International Conference of Building Officials

Uniform Building Code, 1997 or current edition, International Conference of Building Officials, Whittier, CA.

IX. OTHER SUPPLIES REQUIRED OF STUDENTS: Three ring binder

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Step 3, Form A

**Content Review Form  
PREREQUISITE COURSE**

**Target Course:** INSPEC 011 - Fundamentals of Construction Inspection II

**Prerequisite Course:** INSPEC 010 - Fundamentals of Construction Inspection I

**Instructions:**

List exit competencies (skills) from Prerequisite Course. These skills are listed in the "Student Outcomes" section of the Course Outline ("upon completion of the course, the student should be able to...")

Indicate which of the listed exit competencies (skills) are necessary entry skills needed for success in the target course. Mark with an "X" each needed skill.

Indicate the degree of importance of each needed entry skill for course success, using the following rating scale:

1=Critical

2=Very Helpful

3=Desirable

**Skills Analysis**

Exit Skills in Prerequisite Course

Entry Skills Needed for  
Success in Target Course  
(Mark with an X if needed.)

Degree of  
Importance  
(Rate 1 – 3)

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