

Civil Site Preparation (DFTG 2330)



Credit: 3 semester credit hours (2 hours lecture, 4 hours lab)

Prerequisite/Co-requisite: DFTG 2319, DFTG 2335, DFTG 2338

Course Description

Civil site preparation for industrial petrochemical units and control rooms; consisting of units profiles, construction elevations, grade elevations, sizing of concrete supports, re-bar and anchor bolt sizing and applications with sections and elevations CAD drawing support.

Required Textbook and Materials

1. Allowable Stress Design (ASD) & Load Resistance Factor Design (LRFD) American Institute of Steel Construction (AISC) Concrete Reinforcing Steel Institute (CRSI) American Concrete Institute (ACI) (pass-outs given to students)
2. Basic sketch equipment+ (table with sketch 18"x24" sheets)
3. Notebook
4. Computers with Auto-Cad 2011
5. Plotters for cad final drawings 22"x34"
6. Flash drives 2- 2GB (Minimum memory)

Course Objectives

Upon completion of this course, the student will be able to;

1. Solve design problems using (excel) and same design problems dealing with sizing of different members on a project. SCANS F4-4, C5-4, C6-4, C7-4
2. Design and draw structural support plan views. SCANS C5-3, C6-3, C8-5.
3. How to read and use basic terms and formulas in structural support design. (Using civil/structural standards) SCANS F1-3, F5-3, C5-3, C6-3
4. Understand organizations dealing with structural steel. (For the completion of any
5. civil/structural drawing project) SCANS F1-3, F5-3, C5-3, C6-3
6. Understand basic considerations in design supports: SCANS F1-5, F4-4, F5-4, C5-3, C6-5
7. Understand the AISC, CRSI, ACI, codes of standard practice. SCANS C5-3, C6-5, F1-3, F5-3
8. Understand basic design problems on supports :(wind) etc. SCANS F1-3, F5-3, C5-3, C6-3

9. Understand miscellaneous details and calculations in steel and concrete. SCANS F1-3, C5-3, C6-5

SCANS Skills and Competencies

Beginning in the late 1980's, the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools*. In its research, the Commission determined that "workplace know-how" consists of two elements: foundation skills and workplace competencies.

Course Outline

1. Welcome to College:
 - a. Introduction of faculty
 - b. Review of outline of class
2. LIT:
 - a. Policies of class and LIT:
 - b. Deadlines
 - c. Academic calendar
3. Describe to the students how to design and draw by computer methods, a structural first floor foundation plan.
 - a. Structural loads
 - b. Structural stresses
 - c. Wind loads
4. Describe to the students how to design and draw by computer methods, the necessary supporting structural sections to cover the first floor foundation plan.
 - a. Design of footings
 - b. Design of plinths
 - c. Use of sketch drawings on 1, 2.
5. Describe to the students how to design and draw, by computer methods grade beams, slab beams, and slab reinforcers.
 - a. kinds of grade beams
 - b. kinds of slab beams
 - c. kinds of slab reinforcers
6. Describe to the students how to design and draw by computer methods plinth details and pad details.
 - a. Pad reinforcing
 - b. Plinth reinforcing
 - c. Tie in points to grade beams or slab beam
 - d. Misc. other sections needed
7. Describe to the students how to figure and draw column, footing, and grade and slab beam charts.
 - a. Information needed for column chart
 - b. Information needed for footing chart
 - c. Information needed for grade and slab chart
8. Describe to the students how to design and draw, by computer methods, a site plan of the location of a structural building, and a petro-chemical unit.
 - a. Grade elevations
 - b. Limits of operation
 - c. Finish elevations
 - d. Misc.other items needed
9. Describe to the students the many sections and details needed to support a site plan.
 - a. Sidewalk sections and details
 - b. Drainage of parking lot
 - c. Catch basin inlet details
 - d. Expansion details

DFTG 2330
Course Syllabus

- e. Misc other items needed
- 10. Describe to the students how to make a road profile.
 - a. Plan view needed
 - b. Road profile diagram with elevation numbers
- 11. Describe to the students how to make anchor bolt layout drawing.
 - a. Projection detail
 - b. Setting plan
- 12. Describe to the students how to draw anchor bolts for shop fabrication.
 - a. Threads of bolts
 - b. Length of bolts
 - c. Misc other notes needed
- 13. Describe to the students how to make a contour plan of any location.
 - a. Contour chart elevations
 - b. Contour lines put on a drawing
 - c. Adding elevations to contour lines

Grade Scale

100 - 89.5	A
89.4 - 79.5	B
79.4 - 69.5	C
69.4 - 59.5	D
59.4 - 00.0	F

Course Evaluation

Final grades will be calculated according to the following criteria:

Grades on final CAD drawings approx. 8-22"x34" sheets	95%.
Add final contour drawing	5%

Course Requirements

1. Create sketches of items D-M (outline)
2. Create final CAD drawings on items D-M. (outline)

Course Policies

1. No food or drink allowed in class.
2. Cell phone and beepers turned off.
3. No children allowed in class.
4. No drawings will be made up unless teacher gives permission.
5. A "0" will be given on missed drawings and will not be dropped.
6. Two absences are allowed. (2 tardies = 1 absence)
7. If a student exceeds absences they may be given an "F" in the class.

DFTG 2330
Course Syllabus

8. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an “F” in the course.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule

Week	Topic	Reference
1.	Review of all topics	Hand-outs
2.	First floor foundation plan	Hand-outs
3.	First floor foundation plan	Hand-outs
4.	Grade and slab details	Hand-outs
5.	Slab reinforcers	Hand-outs
6.	Pad, plinth and misc. foundation details	Hand-outs
7.	Grade, slab, footing, and column charts	Hand-outs
8.	Grade, slab, footing and column charts	Hand-outs
9.	Site plan layout sketch	Hand-outs
10.	Site plan elevations and details	Hand-outs
11.	Road profile layout	Hand-outs
12.	Drainage of parking lot sections and details	Hand-outs
13.	Final cad site plan drawing layout	Hand-outs
14.	Anchor bolt layout	Hand-outs
15.	Shop anchor bolt details	Hand-outs
16.	Making of a contour plan	Hand-outs

Contact Information

Varies by Instructor