

**CEST 81 - Engineering Construction Design/Drafting
(Public Works Design)
Course Syllabus for FALL 2004**

Instructor: Jerry Miller

Office: 1775 Shuhaw Hall

Office Phone: 527-4376 Fax: 527-4849

E-mail: jmiller@santarosa.edu

Office Hours: MTWTh 2:00 – 3:00 pm or by appointment

Course and Section Web Page:

- <http://online.santarosa.edu/course/homepage/?756>
- <http://online.santarosa.edu/section/?597>

Textbook:

- *CEST 81 SYLLABUS (City of Santa Rosa Design and Construction Standards). We will also use State of California and County of Sonoma Standards and Specifications that will be provided to the student as a supplemental handout.*
- *Three ringed binder for handouts*

Computer-Aided Drafting:

- All assignments will be completed using the CAD system. Upon completion of the lecture portion of the course, you will use PC's to complete your assignments. Your attendance is mandatory for both portions of the class.
- All students will be taught how to use Autodesk's Land Development Desktop Software within AutoCAD. It is assumed that each student has completed Ap. Tech. 56 (Intro to AutoCAD) and CEST 51 (Civil Drafting Technology) prior to this course. We will be using the Windows XP Professional operating system, AutoCAD 2004, LDD3 and Microsoft Office Pro Software packages.
- All assignments will be given with a due date. Students may need to arrange for outside time to meet the deadlines set for each assignment. It is important that each student budget their time wisely to meet these deadlines.
- This course will be run as if you were working for a local engineering firm or agency. You will be expected to conduct yourself accordingly. Your attendance, participation and ability to meet deadlines will be figured into your grade.

Required Supplies and Materials:

- Scientific-Engineering programmable calculator (i.e. TI-30, 82, 83, 86, 89, or HP 30, 32s, 33s 48GX, 49)
- All output devices, printers, plotters, paper, vellum, Mylar, etc. will be supplied by the instructor.
- Floppy, zip or CD's will be provided by the instructor to save/backup your work.
- Students shall use common sense when printing drawings. You should print no more than two check prints and one final print for each assignment.
- Course syllabus (City of Santa Rosa Design Standards and Construction Specifications)

Goals and Objectives:

The student will:

- Identify and list the use, elements, and need for design standards.
- Prepare engineering construction drawings in their proper format, content and layout.
- Demonstrate an understanding of the use of engineering construction drawings and details.
- Demonstrate the proper procedures for interpreting and utilizing surveying data in the design process.
- Perform complex computations involving horizontal and vertical roadway alignments.
- Construct specific diagrams, plans, views and drawings for earthwork, retaining walls, roadways, utilities and topographic mapping.
- Prepare an engineer's cost estimate for their roadway project.
- Prepare contract specifications for specific portions of the project.

Attendance:

- Attendance is required for both lab and lecture hours. Class begins on the hour and ends 10 minutes before the hour. You are responsible for your attendance. Excused absence only by contacting instructor *prior* to the beginning of class.
- ***NO FOOD, DRINK OR SMOKING IS PERMITTED AT ANY TIME IN THE CLASS ROOM!***
- Effective use of lab time is critical to the completion of your assignments. It is your responsibility to budget your time effectively.

Assignments:

- All assignments are to be done per instructions and due at the specified time on the assigned due date.
- Late assignments will not be accepted without instructor's *prior* approval. A substantial penalty will be deducted from the grade of the late assignment.
- All assignments shall be done on the sheets provided, with the correct title information for the project.
- All written assignments (reports, essays, etc.) are to be typed.
- Assignments are your responsibility. Failure to observe these conditions will result in papers or projects being returned without credit!

Tests and Exams:

- Exams will be given on specific areas covered throughout the semester. Sufficient notice will be given prior to the scheduled exam. Review for the exam will be conducted during the previous class lecture.
- ***NO MAKE-UP EXAMS WILL BE GIVEN!***
- The final exam for this course will be comprehensive and will be given on December 13, 2004, from 10:00am to 12:45pm in Room 1799. The final exam is required. Failure to take this exam will result in a grade of "F" for the course.

Grading:

- Your grade is based on the total number of points you accumulate with respect to the "top score" total number of points. The sum of the points in each category are multiplied by the following percentages and then added together to determine total points accumulated:

HOMEWORK points multiplied by 25%
ASSIGNMENT points multiplied by 40%
+ TEST/EXAM points multiplied by 35%
Total Points Accumulated

- Your "**Total Points Accumulated**" are compared to the "**Top Score Total Accumulated Points**" and final grades are based on the following percentages:

90% to 100% A
80% to 89% B
70% to 79% C
60% to 69% D
Below 59% F

- An incomplete "I" will only be given with the prior approval of the instructor.

**CEST 81 - Engineering Construction Design / Drafting
(Public Works Design Engineering)
COURSE OUTLINE for FALL 2004**

The objective of this outline is to assist you in planning your schedule. Every effort will be made to stay on schedule. However, the instructor may find it necessary to make appropriate changes to meet the learning objectives for the entire class. You should be prepared for the project assignment *prior* to the class lecture. Some students may find it necessary to arrange time outside of the schedule hours to complete the assignments.

TENTATIVE SEMESTER SCHEDULE

Topic	Description	Asnmt #
1	Introduction to Land Development Desktop Software, Public Works Design and Construction Standards, Legend Symbols, Improvement plans and documents.	1-Design and Construction Standard
2	Topographic Mapping	2-Topographic Map
3	Plan View – Grading Plan and Horizontal Alignment	3-Plan View (Grading Plan)
4	Profile View – Underground Utilities Plan and Vertical Alignment	4-Profile View (Utility Plan)
5	Roadway Structural Section Design Computations	5-Structural Section Calculations 6-Typical Section
6	Cross section View and Earthwork computations	7-Cross-section View and Earthwork Calculations
7	The Engineer's Estimate – Writing and Interpreting Contract Specifications	8-Engineer's Estimate and Contract Specifications
8	Legend and Cover Sheet	9-Cover Sheet 10-Legend & Abbreviation Sheet
9	Final submittal of the complete set of Improvement Plans and documents.	