

CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENT

**CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS OBISPO**

**CE 222
FUNDAMENTALS OF
TRANSPORTATION ENGINEERING
LABORATORY**

**FALL QUARTER 2003
Monday – Wednesday 3:10 – 6:00 p.m.**

Instructor: Edward Sullivan

Office: Building 04, Room 07, Phone (805) 756-1166

E-Mail: esulliva@calpoly.edu

Office Hours: M & W, 1:00-2:30, T 1:00-2:00

CE 222
FUNDAMENTALS OF TRANSPORTATION ENGINEERING LABORATORY
Fall 2003

1. *Introduction*

This laboratory course is intended to have you apply and extend concepts that you learned in CE 221. It is a “hands-on” course where you will have the opportunity to use various concepts and tools of transportation engineering, transportation planning, and infrastructure management. Several activities are intended to challenge your creativity. A few meetings will include short lectures and group presentations. Some outside reading and data-gathering will be required.

REQUIRED MATERIALS:

- **Map** of the City of San Luis Obispo
- **Clipboard**, letter size, for taking notes at events and in the field

2. *Course Goals and Objectives*

- To improve understanding of transportation problems and their solutions
- To practice established methods of transportation systems analysis and design
- To practice good technical documentation, including effective organization, logical development of thought, proper grammar, word choice, and spelling.
- To become familiar with local issues and projects proposed for development in San Luis Obispo and other locations, and to understand their significance.

3. *Term Project*

A ***GROUP*** Term project will be assigned and organized during the first week. There will be several different project topics to choose from. Support activities and time in class to work on your project will be provided during the quarter. A final technical report and a formal in-class presentation of your completed project will be due during the last week of class.

4. *Addresses, Office Hours*

Location of classroom: Building 13, Room 113
Instructor: Edward Sullivan, Civil and Environmental Engineering Dep’t.
Office: Building 04, Room 07, (Aero. hangars on the hill across the creek)
Office Hours: Monday and Wednesday 1:00 – 2:30 p.m.
 Tuesdays: 1:00–2:00 p.m., and by appointment.
Phone: (805) 756-1166
E-mail: esulliva@calpoly.edu

5. *Literature*

Supplemental reading for specific labs will be put into the library reserve. These materials will be found under CE 222, under the name of either instructor (E. Sullivan or D. Gould-Wells). There will be web-based reading assignments, videotapes and other tools to help you as you learn more about transportation engineering and planning.

6. *Grading Policy*

This course has a total of 200 points, as shown below:

LAB ASSIGNMENTS

140 points

- The Transcontinental Railroad and The Panama Canal 10 points
- Library Orientation and Library Research 15 points
- Bus Operations and Alternative Transportation 20 points
- Highway Geometrics and Pavement Design* 30 points
- GIS Lab 10 points
- Downtown Walk 15 points
- Network Analysis* 30 points
- Traffic Management Center Simulator 10 points

* Note: Assignments marked with asterisks require semi-formal technical reports, as described in instructions to be provided. The others require informal documentation, to be explained.

TERM PROJECT

60 points

These points will be awarded as follows:

- Technical Report 30 points
(which should include references found in the library research conducted during Week #2)
- Display Board 10 points
- Oral Presentation 20 points

LETTER GRADES

- Letter grades are assigned as follows:

Letter Grade	Points
A	200 – 187
A-	186 – 180
B+	179 – 172
B	171 – 165
B-	164 – 160
C+	159 – 152
C	151 – 145
C-	144 - 140
D+	139 – 132
D	131 – 125
D-	124 – 120
F	Below 120

- Note that up to 20 points may be subtracted for continued disruptive behavior such as excessive noise, bringing food or drink into the computer lab, being late without excuse, etc.
- Also, up to 10% in bonus points may on occasion be awarded for assignments which show extraordinary insight or depth of inquiry.

SUBMITTING ASSIGNMENTS

The following lab assignments are to be submitted **INDIVIDUALLY**:

- #1: Historical Perspective (Transcontinental Railroad)*
- #2: Library Research*
- #5: GIS*
- #6: Downtown Walk*
- #8: Traffic Management Center (TMC) Simulator*

The following lab assignments are **GROUP** assignments:

- #3: Analysis of Bus Operations and Alternative Transportation*
- #4: Highway Geometrics and Pavement Design*
- #7: Network Analysis*
- Term Paper, Group Presentation and Project Display*

NOTE: For the GROUP ASSIGNMENTS, everyone in the group usually receives the same grade unless all other group members unanimously request that a particular member be excluded from the common grade due to extraordinary failure to contribute.

LATE ASSIGNMENTS

You are expected to turn in assignments on time. If you are ill or have another emergency and can not be in class when an assignment is due, please notify the instructor in advance.

Unexcused late assignments will be penalized according to the following policy:

- Assignments turned in 1 day late will lose 10% credit
- Assignments turned in 2 days late will lose 20% credit.
- Assignments turned in more than 2 days late will lose 30% credit.

7. Attendance Policy

REGULAR ATTENDANCE IS ESSENTIAL TO DO WELL IN THIS CLASS! Most lab assignments require resources which will only be available to you during class. Many assignments require you to work in teams and, if you are not in class, you won't be able to do your part. If you have a legitimate emergency and cannot be in class or know you will be late, please inform your instructor by phone or email as early as possible.

CE 222 Fall 2003: Laboratory Schedule

WEEK #	ASSIGNMENT	Due Date
Week 1		
September 22	Overview, "Welcome to CE 222" Lab #1: <i>Historical Perspective on Transportation Engineering: The Transcontinental Railroad</i>	9/24
September 24	Introduction to and Organization of Term Project	
Week 2		
September 29	Lab #2: <i>Library Research and Literature Search*</i> Note: Meet 4:00 PM in Library 111H (next to Ref. Room)	10/6 (*This work is part of your term project.)
October 1	Lab #3: <i>Analysis of Bus Operations and Alternative Transportation Programs</i>	10/13
Week 3		
October 6	Lab #3 (continued): <i>Ride the Bus (Data Collection)</i>	
October 8	Lab #4: <i>Highway Geometrics & Pavement Design</i>	10/20
Week 4		
October 13	Lab #4 (continued)	
October 15	Lab #4 (continued)	
Week 5		
October 20	Lab #5: <i>Intro. to Geographic Information Systems (GIS)</i> Note: Meet 3:10 PM in Library 111H (location tentative)	10/27
October 22	Lab #6: <i>Downtown Walk; Parking</i> Note: Meet 3:10 at Mott Gym bus stop to ride the #4 bus	11/3
Week 6		
October 27	Term Project Work	
October 29	Term Project Work	
Week 7		
November 3	Term Project Work	
November 5	Term Project Work	
Week 8		
November 10	Lab #7: <i>Transp. Network Modeling (Viper & TP+)</i>	11/24
November 12	<i>No Class</i>	
Week 9		
November 17	Lab #7 (continued) or Term Project Work	
November 19	Lab #8: <i>Traffic Management Center (TMC) Simulator</i> Note: Meet 3:10 PM in the walkway between the two hanger buildings (Bldg. 04)	11/24
Week 10		
November 24	Term Project Work	
November 26	<i>No Class</i>	
Week 10		
December 1	Prepare Term Project Presentations	
December 3	Presentations of Term Projects	