

Geomorphology

Geology 450/750

Department of Geosciences, San Francisco State University

4 Units

Spring 2006 Syllabus

Instructor: Dr. Leonard Sklar, Assistant Professor of Geology
Office: 622 Thornton Hall
Phone: office 415-338-1204; RFS lab 510-665-3432
Email: leonard@sfsu.edu
Office hours: Monday 2:00 – 4:00 PM, and by appointment
Classroom: 529 Thornton Hall
Lecture: Monday and Wednesday, 12:10 to 1:25 PM
Lab: Wednesday, 2:10 to 5:00 PM

Assigned Readings will be distributed in class, in hard copy and/or electronically

Recommended Texts: Process Geomorphology, by Ritter et al., 4th Edition, 2002, McGraw Hill
Amazon price: \$109.12 new, \$90.93 used
Tectonic Geomorphology, by Burbank and Anderson, 2001, Blackwell
Amazon price: \$65.65 new; \$48.49 used

Registration Dates:	Last Day to Add	10 February (Friday)
	Last Day to Drop	24 February (Friday)
	Last Day for CR/NC option	24 March (Friday)
	Last day to withdrawal w/out documents	28 April (Friday)

Field Trip Dates: Saturday, February 18
Saturday, March 11
Saturday/Sunday, April 15/16

Course Objectives - To provide students with:

- a strong understanding of the linkages between landscape form and process
- in-depth knowledge of hillslope and river channel processes
- familiarity and experience applying fundamental concepts in physical systems
- experience collecting and analyzing field data
- opportunities for developing scientific writing skills
- opportunities to develop and apply skills in physics and mathematics
- experience working in a group on a professional consulting project
- experience researching, preparing, and delivering a lecture on landscape processes

Field trips

In addition to (at least) two field trips during the Wednesday lecture and lab periods, there will be three weekend field trips (two one-day trips and one overnight trip). Because the data collected in the field will be the basis for much of your work in this class, ***each of these field trips is required***. See me right away if you have scheduling conflict.

Grading

30	Problem sets, lab exercises, reading summaries, class participation
20	Landslide analysis report
20	Dam removal group professional report
<u>30</u>	“Jigsaw” Landscape/concept project and report
100	Total points possible

Course Schedule

(May be revised as semester progresses)

Date	Lecture	Lab
Mon. Jan 30	Introduction	
Wed. Feb 1	Landscape attributes and metrics	Landscape attributes and metrics
Mon. Feb 6	Drainage network structure	
Wed. Feb 8	All-afternoon Field Trip:	Redwood Creek Watershed
Mon. Feb 13	Landscape Evolution	
Wed. Feb 15	Landscape Evolution	Surveying skills
Sat. Feb 18	All-day Field Trip:	Landslide Analysis, Mt. Tam., Marin Co.
Mon. Feb 20	Soil production and transport	
Wed. Feb 22	Soil production and transport	Landslide project data analysis
Mon. Feb 27	Hillslope hydrology	
Wed. Mar 1	Hillslope hydrology	Hillslope Hydrology
Mon. Mar 6	Slope stability/landslides	
Wed. Mar 8	Slope stability/landslides	Concept Reading Discussion: Equilibrium
Sat. Mar 11	All-day Field Trip:	Fluvial processes (site to be determined)
Mon. Mar 13	River longitudinal profiles	
Wed. Mar 15	River channel morphology	River project data analysis
Mon. Mar 20	River hydraulics	
Wed. Mar 22	River hydraulics	Concept Reading Discussion: Thresholds
Mon. Mar 27	River Sediment Transport	
Wed. Mar 29	River Sediment Transport	Flood Frequency Analysis
Mon. Apr 3	<i>SPRING BREAK</i>	
Wed. Apr 5	<i>SPRING BREAK</i>	No lab
Mon. Apr 10	River bars and Bedforms	
Wed. Apr 12	River bars and Bedforms	Concept Reading Discussion: Feedbacks
Sat. Apr 15	Weekend camping trip:	Pescadero Creek Dam Removal, San Mateo Co
Sun. Apr 16	Weekend camping trip:	Pescadero Creek Dam Removal, San Mateo Co
Mon. Apr 17	River restoration strategies	
Wed. Apr 19	River restoration strategies	Dam Removal Project data analysis
Mon. Apr 24	Floodplains and Terraces	
Wed. Apr 26	Bedrock Channels	Concept Reading Discussion: Scaling
Mon. May 1	Climate, Tectonics and Topography	
Wed. May 3	All-Afternoon Field Trip	(Site to be determined)
Mon. May 8	Climate, Tectonics and Topography	
Wed. May 10	Student Presentations	Landscape Evolution Lab
Mon. May 15	Student Presentations	
Wed. May 17	Student Presentations	Student Presentations

(NO FINAL EXAM)