

GEOL. 305L Spring, 2016 — Lecture (ZHS 252): TTh 4:30 - 6:00 PM
Laboratory sessions start 1/12 (ZHS B65)

Instructors (in order of appearance):

John Platt, ZHS 313, USC x11194, jplatt@usc.edu, office hours: 1:30-2:30 M,
10:00-11:00 Tu, 11-12 F, or by appointment

Doug Hammond, ZHS 325E, x05837; dhammond@usc.edu; office hrs: 1-3 TTh, or by appt.

James Dolan, ZHS 111, x08599; dolan@usc.edu, office hours: 3-4 TTh, by appt

Teaching Assistants:

Eric Kleinsasser, ZHS 329, x09887, kleinsas

Lei Qin, ZHS xxx, x00000, qinl@usc.edu

Textbook:

"Geology for Engineers & Environmental Scientists" by A. E. Kehew, 3rd edition,
Prentice-Hall, 1995, 2006.

Catalogue Description:

GEOL 305L Introduction to Engineering Geology (4, Sp) Principles of geology with emphasis on structural geology, hydrogeology and geologic hazards; basic geologic considerations in civil engineering practice; Introduction to mineralogy and petrology. Lecture 3 hours; laboratory, 2 hours; required field trips. Duplicates credit in GEOL 105Lg and 108Lg.

Course grade:

Each lecture exam = 25% of total grade (exams are not cumulative); laboratory = 25%.

Lab attendance is required in order to pass the course.

Attendance on the field trip is required

Academic Accommodations: Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP can be reached at ability@usc.edu and is open 8:30am-5:00pm Monday through Friday. The phone number for DSP is 213-740-0776.

COURSE MEETING, TOPIC, AND READING SCHEDULE

Day	Date	Lecturer	Lecture Topic	KeheW for topic
Tu	1/12	JP	Course introduction; planet Earth overview; minerals	ch.1
Th	1/14	JP	Plate tectonics	ch.2
Tu	1/19	JP	Rock Cycle; igneous & metamorphic rocks and processes	ch.3
Th	1/21	JP	Sediments; sedimentary rocks and strata; landforms	ch.5
Tu	1/26	JP	Volcanoes	ch.4
Th	1/28	JP	Volcanic hazards	ch.4
Tu	2/2	DH	Weathering; soils and soil hazards	ch.9
Th	2/4	DH	Subsidence (soils, karst); desertification	ch.10
Tu	2/9	DH	Hydrologic cycle: rivers; stream hydraulics	ch.14
Th	2/11	DH	Floods, flood control; California surface waters	ch.14
Tu	2/16	EXAM 1 (through 2/11 lecture)		
Th	2/18	DH	Dams; dam failures; environmental issues of dams	TBA
Tu	2/23	JP	Geological structures; rock deformation	ch.8
Th	2/25	JP	Mass wasting; slope stability	ch.13
Tu	3/1	JP	Coastal processes; hazards	ch.15
Th	3/3	DH	Groundwater principles & probs.; overdrafts, salinization	ch.11
Tu	3/8	DH	Environmental contaminants	ch.12
Th	3/10	DH	Groundwater contamination and remediation	ch.12
Sa	3/12	through Su 3/20 SPRING BREAK		
Tu	3/22	DH	Solid waste disposal; hazardous gases; CO ₂	TBA
Th	3/24	DH	Nuclear energy; nuclear waste disposal	TBA
Tu	3/29	EXAM 2 (through 3/23)		
Th	3/31	JD	Earth's deep interior and dynamics	ch.2
Sat	4/2	DH, JP 305 FIELD TRIP: SAN ANDREAS; ST FRANCIS DAM		
Tu	4/5	JD	Mechanics of Earth materials	ch.7
Th	4/7	JD	Earthquake principles and mechanics I	ch.8
Tu	4/12	JD	Earthquake principles and mechanics II	ch.8
Th	4/14	JD	Shallow Earth geophysical exploration methods	TBA
Tu	4/19	JD	Earthquake engineering considerations I	TBA
Th	4/21	JD	Earthquake engineering considerations II	TBA
Tu	4/26	JD	Earthquake forecasting and seismic hazard analysis	TBA
Th	4/28	DH	Climate change; glaciers & glaciation; sea level rise	ch.16
Th	5/5	EXAM 3 4:30 — 6:20 PM		

Lab Schedule (LABS BEGIN 1/12/16)

Laboratory sessions:

Tu 10-11:50 AM: 24924

W 8-9:50 AM: 24928

Th 10-11:50: 24922

Th 6:30-8:20 PM:24926

<u>Lab Dates</u>	<u>Laboratory topic</u>
1/12-14	Topographic and simple geologic maps
1/19-21	Minerals and igneous rocks
1/26-28	Sedimentary and metamorphic rocks
2/2-4	Geologic Maps II (folds, faults)
2/9-11	Soils, subsidence, and liquefaction
2/16-18???	<u>No lab this week (Engineering competition)</u>
2/23-25	River systems and flooding
3/1-3	Landslides
3/8-/10	Groundwater
SPRING BREAK-----	
3/22-24	Environmental contaminants
3-29-31	Coastal systems
4/5-7	Rock Mechanics
4/12-14	Earthquake Location and Magnitude
4/19-21	Earthquake Intensity and Hazards
4/26-28	LAB FINAL EXAM

Date of undergrad engineering competition is unknown and may require schedule change.

Details of Lab Syllabus will be given during the first lab.

Lab 2 on will begin on the same day JP lectures on igneous rocks

La11 (Rock Mechanics) will begin the day JP does Mechanics in lecture.