

Geology 550  
 Andre Lehre  
 Office Hrs: Tu 9, W 8-10, Th 9-11  
 and by arrangement

Spring 2007  
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### GEOLOGY 550 -- FLUVIAL PROCESSES

All reading, unless otherwise indicated, is in Dingman: Fluvial Hydrology (D), or in Knighton: Fluvial Forms and Processes (K). Other readings may be assigned in class.

**Geology 550 website:** <http://www.humboldt.edu/~geology/courses/geology550>

When requested on the site use: **name:** geodept **password:** students

DAY	TOPICS	READING
16-Jan	Dimensions, units, physical properties, and fundamental equations	D 1-62; K 1-24; 65-80
17	LAB 1: Unit conversions	D 86-92
18	Physical properties of water	
23	Principles of dimensional analysis	
24	LAB 2: Dimensional analysis	
25	Forces in open-channel flow; types of flow; boundary layers	D 63-72; 76-86
30	Forces in open-channel flow; types of flow; boundary layers	
31	Work on Lab 2	
1-Feb	Velocity distribution in uniform laminar flow; turbulence	D 95-102; K 96-99
3	LAB 3: FIELD LAB—Hydraulic data from Freshwater or Jacoby Cr (Saturday, 9–5)	
6	Velocity distribution in uniform turbulent flow	D 102-119
7	Work up data from field lab 3	
8	Velocity distribution in uniform turbulent flow	
13	Resistance to flow	D 137-149; 158-166; K 99-105
14	LAB 4: FIELD LAB—Hydraulic data from Freshwater or Jacoby Cr	
15	Resistance to flow	
20	Gradually varied flow	D 181-225; 244-269
21	Work up data from field lab 4	
22	Gradually varied flow	
27	Rapidly varied flow	D 207-236
28	LAB 5: Water-surface profiles	
1-Mar	Energy and power relations in streamflow	D 121-134; K 105-107
6	Forces on settling particles; entrainment of sediment	D 149-178; K 107-141
7	work on Lab 5; <b>MIDTERM this week</b>	
8	Forces on settling particles; entrainment of sediment	
13	SPRING BREAK	
14	SPRING BREAK	
15	SPRING BREAK	
20	Suspended load transport	K 63-71; 81-84
21	LAB 6: Estimation of suspended sediment transport	
22	Suspended load transport and bedforms	
27	Bedload transport calculations	K 126-141
28	Lab 7: FIELD LAB	
29	Bedload transport calculations	

DAY	TOPICS	READING
3-Apr	Bedload transport calculations	
4	LAB 8: Estimation of bedload transport	
5	Bedforms, bars, pools	K 187-205
10	Adjustment of channel form: hydraulic geometry	D 241-244; K 151-187
11	LAB 9: FIELD LAB	
12	Channel pattern: meanders	K 205-230
17	Channel pattern: meanders	
18	LAB 10: Channel stability	
19	Channel patterns: braided channels	K 230-241
24	Longitudinal profile	K 241-255
25	No formal lab -- use to finish other labs	
26	Longitudinal profile; channel changes	K 255-307
28	LAB 11: FIELD LAB— Channel morphology (Saturday 8-6)	
3-May	Bedrock channels	
4	no lab this week	
5	Bedrock channels	
<b>10-May</b>	<b>FINAL EXAM - comprehensive - due by 4 PM</b>	