

Syllabus for ESM 235: Watershed Analysis, Winter 2018

	Date	Topic
0		Watershed Analysis as a social process
1	Jan 16	Watersheds? Functions? Runoff processes
1	Jan 18	Horton overland flow environments and surface erosion (including pollutant washoff) in rural and urban areas.
2	Jan 23	Runoff calculations for watersheds
2	Jan 25	Runoff calculations for watersheds
2	Jan 27, 8:30 am	Saturday field trip to Santa Barbara watersheds
3	Jan 30	Effects of fire on watershed response
3	Feb 1	Water erosion of hillslopes
4	Feb 6	Water erosion of hillslopes
4	Feb 8	Subsurface flow and mass wasting environments.
5	Feb 13	Mass wasting: landsliding and debris flow
5	Feb 15	Snow Hydrology
6	Feb 20	Snow Hydrology
6	Feb 22	Formation of channel networks and watersheds
6	Feb 24, 8:30 am	Field exercise at Sedgwick Ranch
7	Feb 27	Stream channel hydraulics and flow profiles. "In-stream flows"
7	March 1	Stream channel sediment transport
8	March 6	Sediment storage and channel sedimentation
8	March 8	Channel form
9	March 13	Channel habitat modeling
9	March 15	Channel classifications and riparian zones

**ESM 235 Watershed Analysis -- Laboratory
Bren School of Environmental Science and Management
Winter 2018**

TA: Chris Heckman (checkman@bren.ucsb.edu)

Lab time: Thursday at 3:30-5:30 pm

Location: BH 3035 (3rd floor GIS Lab)

Office hours:

Lab Schedule Outline

Week 1 (1/18/18)	Lab No. 1: Stream and watershed delineations (ArcHydro) NO WRITE-UP
Week 2 (1/25/18)	Lab No. 2: Mission Creek runoff and erosion calculations with HEC-HMS in conjunction with Saturday fieldtrip to Santa Barbara watersheds
Week 2 (1/27/18)	Saturday Fieldtrip to Santa Barbara Watersheds (8:30 am, Bren Hall)
Week 3 (2/01/18)	Lab No. 2: Mission Creek runoff and erosion calculations with HEC-

	HMS
Week 4 (2/08/18)	Lab No. 3: Erosion modeling for hazards (ERMiT) and ecosystem services (InVest). NO WRITE-UP Report for Lab 2: Due by Monday 2/5/18 by 5:00 pm
Week 5 (2/15/18)	Lab No. 4: Shallow Landslide Stability Model
Week 6 (2/22/18)	Lab No. 5: Preparation of data sources for Sedgwick Ranch fieldtrip Report for Lab 4: Due by Monday 2/19/18 by 5:00 pm
Week 6 (2/24/18)	Saturday field exercise at Sedgwick Ranch (8:30 am, Bren Hall)
Week 7 (3/01/18)	Lab No. 6: Review of Sedgwick Ranch data sources and interpretations
Week 8 (3/08/18)	Report for Lab 5: Due on Monday 3/05/18 by 5:00 pm