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## Course Objective

Apply remote sensing to derive variables (parameters) of surface hydrology and hydrometeorology such as precipitation, land surface temperature and emissivity, heat flux, evaporation, evapotranspiration, soil moisture, surface water and runoff, water quality, snow and ice, and soil erosion. The contents will also include radar hydrology, microwave techniques and mapping of soil moisture and precipitation, and remote sensing in hydrologic modeling. Lab exercises will be based on an ENVI/IDL, Erdas Imagine, Matlab, ArcGIS, and Perl script.

## Tentative schedule and topics

Date	Topics	Lab	Reading
Jan 17	Class overview and remote sensing review		
Jan 19	Hydrologic cycle and energy balance		
Jan 24	Sensible and latent heat remote sensing	L1	
Jan 31	Sensible and latent heat remote sensing	L2	
	<b>(Proposal due on Feb 2)</b>		
Feb 7	Precipitation remote sensing	L3	
Feb 14	NEXRAD and satellite-based products	L4	
Feb 21	Soil moisture remote sensing	L5	
Feb 28	Surface parameters for hydrological modeling		
Mar 2	GIS representations of hydrological parameters	L6	
Mar 7	<b>Middle term</b>		
Mar 9	<b>Term project progress report</b> (presentations)		
Mar 14	Spring break, no class		
Mar 21	Hydrological modeling	L7	
Mar 28	Surface water and drought monitoring	L8	
Apr 4	Water quality and water management	L9	
Apr 11	Snow and ice remote sensing	L10	
Apr 18	Water in Mars (Martian poles and water ice)		
Apr 20	Working on projects		
Apr 25	Final presentations		
May 2	<b>Term paper due</b>		
May 4	Review		
May 11	<b>Final</b>		