DEPARTMENT OF GEOLOGY AND GEOPHYSICS, UAF

GEOS 654: Visible and Infrared Remote Sensing (Instructors: A Prakash & C Haselwimmer)

Class Schedule: Spring, 2012

Time: 9.30-11.30, WRRB (Room 004) Remote Sensing Lab (except session 26, which will take place in Room 002)

Week	Date	Day	Session	Topic	Lab component	Homework
1	23-Jan	Monday	1	Introduction to course	Overview of lab and examples of visual image interpretation	
	25-Jan	Wednesday	2	EM spectrum + terminology	Plotting EM spectrum	1 issued
2	30-Jan	Monday	3	Radiation laws	Plotting Plancks equation	2 issued
	1-Feb	Wednesday	4	Atmospheric windows, cosine law + reflectance	ENVI - introduction	
3	6-Feb	Monday	5	Atmospheric scattering, BRDF + albedo	Overview of class projects	
	8-Feb	Wednesday	6	Measuring spectral radiance, irradiance + reflectance	Field reflectance measurements [1]	1 due
4	13-Feb	Monday	7	Reflectance properties of materials	Laboratory reflectance measurements	2 due
	15-Feb	Wednesday	8	Sensor fundamentals + VNIR/SWIR remote sensing systems	ENVI - investigate MS/HS datasets	
5	20-Feb	Monday	9	Pre-processing VNIR/SWIR data		
	22-Feb	Wednesday	10	ENVI - preprocessing VNIR/SWIR data	ENVI - preprocessing VNIR/SWIR data	
6	27-Feb	Monday	11	TIR remote sensing: principles and data acquisition	Field emissivity measurements [1]	
	29-Feb	Wednesday	12	TIR remote sensing: temperature estimation	Projects discussion	
7	5-Mar	Monday	13	Subpixel temperature estimation	ENVI - preprocessing TIR data [3]	3/4 issued
	7-Mar	Wednesday	14	Temperature-emissivity separation	ENVI - preprocessing TIR data [3]	
8	12-Mar	Monday		Spring break (no class)		
	14-Mar	Wednesday		Spring break (no class)		
9	19-Mar	Monday	15	Project work	Project work	3 due
	21-Mar	Wednesday	16	Spectral analysis 1	ENVI - spectral analysis of ASTER data	
10	26-Mar	Monday	17	Land cover classification / change detection (Jordi Cristobal)	ENVI - land cover classification / change detection [3]	
	28-Mar	Wednesday	18	Land cover classification / change detection (Jordi Cristobal)	ENVI - land cover classification / change detection [3]	
11	2-Apr	Monday	19	Project work	Project work	
	4-Apr	Wednesday	20	Oil spill mapping	ENVI - mapping oil slick depth using AVIRIS data [3]	
12	9-Apr	Monday	21	Spectral analysis 2	ENVI - spectral mapping tools	4 due
	11-Apr	Wednesday	22	Mineral mapping	ENVI - hourglass workflow applied to AVIRIS data	
13	16-Apr	Monday	23	Mapping/monitoring sea ice (Andy Mahoney)	ENVI - mapping sea ice landfast edge	
	18-Apr	Wednesday	24	Measuring Leaf Area Index (Jordi Cristobal)		
14	23-Apr	Monday	25	Project work	Project work	
	25-Apr	Wednesday	26 [2]	Project work	Project work	
15	30-Apr	Monday	27	Project work	Project work	
	2-May	Wednesday	28	Project work	Project work	
16	7-May	Monday		Finals		

[1] Part of this session will take place outside subject to weather conditions, please bring warm clothes

[2] The lab will be busy for this session (booked for a GINA course) so you may work at your own desk

[3] Assessed lab (5%) each