Lecture Schedule – FR 3262 / 5262

Period	Date	Topic	Reading Assignment in Campbell	Supplemental Reading in Lillesand
Concepts and Foundations of Remote Sensing				
1	Jan. 23	Course introduction; Introduction to remote sensing	Ch.1	Sec. 1.1
2	25	Physical basis for remote sensing; energy sources and radiation principles	pp. 28 - 44	Sec. 1.2
3	28	Energy - matter interactions	pp. 44 - 52	Sec. 1.3
4	30	Spectral - radiometric properties of vegetation, soil, and water	Sec. 17.3 - 4,19.2	Sec. 1.3 - 1.4
5	Feb. 1	Introduction to remote sensing data acquisition and interpretation	Ch. 10	Sec. 1.5, 1.8 - 1.9
Aerial Photography				
6	4	Aerial photography: cameras, film and filters	pp. 55 - 61	Ch. 2
7	6	Cameras, film and filters, cont.	pp. 58 - 74, sec. 10.1 - 5	Ch. 2
8	8	Cameras, film and filters, cont.		
9	11	Geometry of aerial photographs	Sec. 3.8 - 10, Sec. 5.14	Ch. 3
10	13	Principles of stereoscopy	pp. 81 - 83, Sec. 5.13	Sec. 3.7
11	15	Principles of photo interpretation	Chap 5 (except Sec. 5.15), Sec. 20.1 - 7	Sec. 4.1 - 4.4
12	18	Introduction to photogrammetry; orthophotography	Sec. 3.10 - 12	Sec. 3.8 - 3.9
13	20	Acquisition and sources of aerial imagery; mission planning	Sec. 3.13	Sec. 3.10
14	22	Applications of aerial photography to natural resources	Sec. 17.4 - 5, 17.16, 18.1 - 4, 18.9 - 11	Sec. 1.9, 4.5 - 4.16
15	25	***Exam 1***		

Digital Remote Sensing				
16	27	Electronic sensors and digital imagery	Ch. 4	Sec. 5.1 - 7
17	29	Electronic sensors and digital imagery, cont.		
18	March 3	Land observation satellite systems	Ch. 6	Sec. 6.1 - 15
19	5	Applications of Landsat and SPOT data	*Looking at Earth; Satellite Atlas of the World*	*Landsat & SPOT Applications Notebook*
20	7	AVHRR, MODIS and SPOT Vegetation and their applications	pp. 182 - 189, Sec. 17.6 - 10, *AVHRR Applications Notebook*	Sec. 6.17 - 19
21	10	Geometric and radiometric preprocessing	Sec. 4.9, Ch. 11	Sec. 7.1 - 2
22	12	Image enhancement	Sec. 5.15	Sec. 7.3 - 6
23	14	Image classification	Ch. 12	Sec. 7.7 - 15
24	24	Image classification, cont.	Sec. 20.8	
25	26	Temporal classification and change detection	Sec. 20.9	pp. 593 - 600
26	28	Classification accuracy assessment	Ch. 13	Sec. 7.17
27	31	Digital aerial imaging, G*uest lecture, Wm. Anderson*	Sec. 3.11	Sec. 2.5, 2.8
28	April 2	Applications of digital aerial imaging, *Wm. Anderson*		
29	4	**Exam 2**		
30	April 7	Thermal infrared and passive microwave remote sensing	Ch. 9	Sec. 5.6 - 5.8, 5.11 - 5.12, 8.20
31	9	Hyperspectral sensing	Ch. 15	Sec. 5.14, pp. 460 - 462, 7.19
32	11	Lidar and its applications	Ch. 8	Sec. 8.23
33	14	Radar remote sensing	Ch. 7	Sec. 8.1 - 21

Integration with Other Geopatial Data and Applications of Remote Sensing				
34	16	Introduction to geographic information systems	Ch. 16, *GIS – Notebook*	Sec. 1.11, Sec. 7.18
35	18	Global Positioning System	pp. 378 - 382, *GPS – Notebook*	Sec. 1.7
36	21	Commercial high resolution satellite systems / IKONOS, QuickBird and OrbView	pp. 189 - 191	Sec. 6.16
37	23	Earth Observing System / Terra and Aqua	Sec. 21.4 - 10	Sec. 6.19
38	25	Land cover classification and monitoring in Minnesota	Sec. 20.8 - 12 *, Land Classification and Change Detection – Notebook* **& land.umn.edu**	
39	28	Mapping impervious surface area in Minnesota	Sec. 20.8 - 12	
40	30	Satellite monitoring of lake water quality in Minnesota, *Guest lecture, Leif Olmanson*	Sec. 19.1 - 4, *Satellite Monitoring of Lakes – Notebook* **& water.umn.edu**	
41	May 2	Applications of remote sensing to ecology and global change	Sec. 21.1 - 21.2	**EarthObservatory.NASA.gov**, *Applications of RS to ecology and global change – Notebook*
42	5			
43	7			
44	9	Future perspectives, Review		
	16	**Final Exam** 1:30 – 3:30		