



Spring 2021

Syllabus

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Course Syllabus

Date	Topic	Reading	Homework	Lecturer
WEEK 1	Download and install MATLAB	Matlab Installation instructions [Ⓔ] Python Installation Instructions (Anaconda) [Ⓔ]	LAB 0	
29MAR	Introduction to course, labs, term papers Overview of remote sensing	Rees 1.1-1.4 Appendix		Sandwell/ Fricker
31MAR				Fricker/Bryant/ Sandwell
02APR	Platforms and orbits Use of color in RS	Rees 10.1-10.4 notes on orbits	HW1	Sandwell
WEEK 2	MATLAB basics, plotting		LAB 1	
05APR	Electromagnetic radiation, polarization	Rees 2.1-2.2 EM Summary		Fricker
07APR				Fricker/Bryant/Sandwell
09APR	GPS and the Ionosphere Fourier transform introduction	Rees 2.3	HW2 [Ⓔ]	Sandwell
WEEK 3	1-D and 2-D Fourier transforms		LAB 2	
12APR	Spectra and Fourier transforms Diffraction	Rees. 2.7 notes on Fourier		Sandwell
14APR				Sandwell/Bryant/Fricker
16APR	Thermal radiation	Rees. 2.5-2.6 notes on radiation	HW [Ⓔ] 3	Fricker
WEEK 4	Data Types		LAB 3	
19APR	Propagation, dispersion, and scattering	Rees 3.1, 3.3, 3.5		Fricker
21APR				Fricker/Bryant/Sandwell
23APR	Image processing - 1	Rees 11.1-11.2	HW4 [Ⓔ]	Sandwell
WEEK 5	Google Earth		LAB 4	
26APR	Image Processing - 2 Optics, stereo	Rees 5.1-5.3	[Ⓔ] HW5	Sandwell
28APR				Sandwell/Bryant/Fricker
30APR	Image classification Machine learning	Rees 11.3-11.4		Sandwell
WEEK 6	Image Processing		LAB 5	
03MAY	Review and go over HW 1-5		Term Paper - Part 1 Due (grad students)	
05MAY	Practice Midterm			
07MAY	Midterm			
WEEK 7			NO LAB	
10MAY	Passive microwave systems and applications	Rees 7.1-7.4		Fricker
12MAY				Fricker/Bryant
14MAY	Radar and laser altimetry	Rees 8.1 - 8.3	HW6 [Ⓔ]	Fricker
WEEK 8	Image Classification		LAB 6	
17MAY	Scattering and Synthetic Aperture Radar (SAR)	Rees 9.1 - 9.3	Term Paper - Part 2 Due (grad students)	Sandwell
19MAY				Sandwell/Bryant
21MAY	Radar Interferometry	Rees 9.4-9.5	HW7 [Ⓔ]	Sandwell
WEEK 9	Laser and Radar Altimetry		LAB 7	
24MAY	Earthquakes and Volcanoes			Sandwell or Xu
26MAY	Remote sensing of the cryosphere:			Fricker or Bryant
28MAY	Grad. Student Presentations			
WEEK 10	Radar Interferometry		LAB 8 (optional)	
31MAY	Holiday			
02JUN	Grad. Student Presentations			
04JUN	Grad. Student Presentations Review for Final Exam	LAST DAY TO TURN IN ALL HOMEWORK AND LABS		
09JUN	Final Exam 11:30 - 1:30 PM	The final exam will include questions from the graduate student presentations. The exam will have questions from the entire course.	Term Paper - Part 3 Due (grad students)	