

AOS 441: Satellite and Radar Meteorology

Spring 2018: Tentative Lecture and Lab Schedule

For guidance only. Lecture and lab schedules may be adjusted to accommodate interesting or newsworthy weather events or unforeseen circumstances.

Date	Lecture Topic	Labs/Reading Materials
1/24	Course Overview, Survey, Introduction to Radars	
1/26	Basic Radar Principles	Rinehart Ch. 1-2
1/29		Lab 1: Intro to McIDAS V
1/31	No Class: Professor Travel	
2/2	EM Propagation, Curvature, Refraction	Rinehart Ch. 3
2/5	Make-up Double Lecture: The Radar Equation, Reflectivity, The Rayleigh Approximation	Rinehart Ch. 4 & 5
2/7	Doppler Radar Principles	Rinehart Ch. 6
2/9	Quiz 1 (Radar Eqn); Interpreting Doppler Imagery	NSSL Doppler Guide
2/12		Lab 2: Reflectivity Structure
2/14	Doppler Imagery	
2/16	Clouds and Rainfall	Rinehart Ch. 8
2/19		Lab 3: Rainfall
2/21	Graupel, Hail, and the Bright band	
2/23	Quiz 2 (Doppler); Snowfall	
2/26		Lab 4: Severe Weather
2/28	Non-Meteorological Targets/Winds	Rinehart Ch. 9
3/2	Mobile Radars and Attenuation	
3/5		Lab 5: Non-Precipitating Echoes
3/7	In Class: Radar Applet Exercise	
3/9	Polarization	Rinehart Ch. 10 and NWS Online DualPol Training
3/12	Polarization II	Lab 6: Polarization
3/14	Satellite Radars	
3/16	Principles of Satellite Orbits	
3/19		Real-time Forecasting Lab
3/21	Quiz 3 (Dual-Pol); WorldView Imagery Contest	
3/23	Sampling Strategies, FOV, Scanning	
3/24-4/1	BREAK	
4/2	Review of Radiative Transfer and Introduction to Remote Sensing	Petty Sections 6.1, 6.2, 11.1 and 11.2
4/4	Reflection	Petty Sections 5.2 and 5.3
4/6	Surface Property Retrievals	Petty Sections 8.1 and 8.2
4/9		Lab 7: NDVI
4/11	Quiz 4 (Satellite); Satellite Mission Design Contest	
4/13	Emission-based Remote Sensing: Surface Temperature, Detecting Fires and Clouds	
4/16		Lab 8: MODIS Fire Detection
4/18	Weighting Functions and Atmospheric Sounding	
4/20	Scattering-based Remote Sensing: Cloud Properties	
4/23		Lab 9: AIRS Weighting Functions
4/25	Guest Lecture: Microwave Remote Sensing: Surface	
4/27	Quiz 5 (Satellite Applications); Microwave Remote Sensing: Clouds	
4/30		Lab 10: SEVERI Cloud Properties
5/2	Guest Lecture: Microwave Remote Sensing: Precipitation	
5/4	Review and Wrap-up	