

# Remote Sensing of the Atmosphere and Ocean (11:670:451/16:712:552)

Fall 2012

Class website: **Sakai Site** and <http://marine.rutgers.edu/dmcs/ms552>

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## Learning Goals for This Course

- 1) Develop a basic understanding of the types and applications of remote sensor technology used in Atmospheric and Oceanic Science.
- 2) Develop specific understanding of the radar and satellite remote sensors used to conduct a weather discussion of mesoscale and synoptic weather systems, and ocean state.
- 3) Develop specific understanding of the physical principles used to remotely sense atmospheric and oceanic structure.
- 4) Exhibit critical thinking when confronting new information.
- 5) Communicate clearly orally and in writing, including by electronic means.

<b>class #</b>	<b>Date</b>	<b>day</b>	<b>Topic</b>	<b>Lecturer</b>
1	9/4	T	Course Introduction / Orbits and scan geometry	J. Wilkin
2	9/6	Th	Orbits and scan geometry	J. Wilkin
3	9/11	T	Electromagnetic Radiation I	J. Miller
4	9/13	Th	Electromagnetic Radiation II	J. Miller
5	9/18	T	Radar Equation and particle scattering	M. Miller
6	9/20	Th	Long Wavelength Propagation and Scattering	M. Miller
7	9/25	T	Wind Profiler Radars	M. Miller
8	9/27	Th	CODAR	J. Wilkin
9	10/2	T	Weather Radar	M. Miller
10	10/4	Th	Weather Radar	M. Miller
11	10/9	T	<b>EXAM 1</b>	

12	10/11	Th	Vertical Sounding	J. Miller
13	10/16	T	Satellite Applications: Synoptic Meteorology	S. Decker
14	10/18	Th	Satellite Applications: Synoptic Meteorology	S. Decker
15	10/23	T	Altimetry I	J. Wilkin
16	10/25	Th	Altimetry II	J. Wilkin
17	10/30	T	Ocean Vector Winds, Synthetic Aperture Radar	J. Wilkin
18	11/1	Th	Radiative Properties of Clouds and Aerosols	M. Miller
19	11/6	T	ERBE	J. Miller
20	11/8	Th	Land Surface Remote Sensing	M. Miller
21	11/13	T	Sea Surface Temperature	J. Wilkin
22	11/15	Th	Ocean Color	J. Wilkin
23	11/20	T	Climate Applications	J. Miller
24	11/27	T	<b>EXAM 2</b>	
25	11/29	Th	STUDENT PROJECT PRESENTATIONS	
26	12/4	T	STUDENT PROJECT PRESENTATIONS	
27	12/6	Th	STUDENT PROJECT PRESENTATIONS	
28	12/11	T	STUDENT PROJECT PRESENTATIONS	
	12/15	F	Final project PPT due	

#### Grading:

Final averages will be computed from grades on homework, two mid-term exams, and the student term projects.

Weighting: Homework (35%), Exams (40%), Term Project (25%)