CLASS SCHEDULE FOR SPRING 2013			
Date	**Lecture/Lab**	**Topic**	**Required reading**
Jan 7	Lecture 1	Class logistic. Introductory survey of satellite sensor characteristics.	 S 1.7
Jan 9	Lecture 2	Basics of electromagnetic radiation.	S 2.1-2.4
Jan 14	Lecture 3	Main radiation laws. Blackbody emission. Brightness temperature. Polarization. Emission from ocean and land surfaces.	S 2.5; 4.4; p. 177-183
Jan 16	*Lab 1.*	*Passive microwave remote sensing of sea-ice*	
Jan 21		**SCHOOL HOLIDAY**	
Jan 23	*Lab 2.*	*Introduction to NASA satellite data products*	
Jan 28	Lecture 4	The composition and structure of the atmosphere. Absorption/emission by atmospheric gases and the effects on remote sensing	S 1.3-1.5, 3.2.1; 3.1-3.5
Jan 30	*Lab 3.*	*Absorption by atmospheric gases*	
Feb 4	Lecture 5	Rayleigh (molecular) scattering. Scattering and absorption by aerosols and clouds.	S 1.6, 4.1, 4.3, 5.1-5.4, 5.6, 5.7
Feb 6	*Lab 4.*	*Modeling optical characteristics with Mie theory.* *Analysis of aerosol optical properties measured from ground-based and aircraft platforms*	
Feb 11	Lecture 6	Multiple scattering as a source of radiation. Reflectance from surfaces. Remote sensing of ocean color.	S 6.1, 6.3, 6.4
Feb 13	*Lab 5.*	*Retrievals of aerosol properties from passive satellite remote sensing*	
Feb 18	Lecture 7	Applications of passive remote sensing using extinction and scattering: Remote sensing of aerosols in the visible and near-IR.	S 6.3, 6.5.1, pp.177-180
Feb 20	*Lab 6.*	*Retrievals of atmospheric gases from passive remote sensing*	
Feb 25	Lecture 8	Applications of passive remote sensing using extinction and scattering: Review	
Feb 27		MID-TERM EXAM I	
Mar 4	Lecture 9	Principles of passive remote sensing using emission. Remote sensing of atmospheric path-integrated quantities (cloud liquid water content and precipitable water vapor). Remote sensing of sea surface temperature (SST).	S 7.1, 7.3.1, 7.3.2, 7.2, 4.5.1
Mar 6	*Lab 7.*	*Retrievals of SST*	
Mar 11	Lecture 10	Principles of sounding by emission. Sounding of the temperature profile. Sounding of trace gases and air pollution	S 7.5, 7.5.4, 7.7
Mar 13	*Lab 8.*	*Atmospheric sounding*	
		SPRING BREAK	
Mar 25	Lecture 11	Applications of passive remote sensing: Remote sensing of planetary atmospheres - Examples	
Mar 27	*Lab 9.*	*Designing a mission concept*	
Apr 1	Lecture 12	Applications of passive remote sensing using the solar and IR: Remote sensing of precipitation and clouds.	S 7.4 , 7.6, 6.6
Apr 3	*Lab 10.*	*Retrievals of cloud properties from passive remote sensing*	
Apr 8	Lecture 13	Principles of active remote sensing: Radar sensing of clouds and precipitation.	S: 8.1, p.401-402, 5.7, 8.2.1, 8.2.2, 8.2.3, 8.3
Apr 10	*Lab 10.*	*Radar sensing of precipitation*	
Apr 15	Lecture 13.	Principles of active remote sensing: Lidar sensing of aerosols and clouds	S 8.4.1, 8.4.2, 8.4.3, 8.4.4
Apr 17	*Lab 11.*	*Analysis of lidar sensing*	
Apr 22	Lecture 14.	Course Review	
Apr 24	Lecture 13	Review for EXAM II	