

GG5470/GG5760: Surface and Atmosphere Remote Sensing  
EXPL 2103, Tuesday, 04:30 pm-07:10 PM  
01/22-05/15

**Course Instructors: Dr. Donglian (Lilian) Sun**

E-mail: [dsun@gmu.edu](mailto:dsun@gmu.edu)

Phone: 703-993-4736 (Dr. Sun)

Office hours: Thursday 2.00-4.00 PM

Office: EXPL 2407

Course Web Page: <http://courses.gmu.edu>

### Surface and Atmosphere Remote Sensing

This course is designed to give students with Earth science and remote sensing background a thorough introduction to gathering an overview to Remote Sensing of surface and atmosphere, such as surface and atmospheric information retrieval, including surface radiation budget, land cover/land use, snow/ice, surface temperature, soil moisture, precipitation retrieval from passive and active satellite observations. The main emphasis of this course is satellite remote sensing of the Earth surface and atmosphere parameters. Some topics are suggest to be covered, but can be modified according to students' interests. Project presentation and paper (20 pages including figures and tables) are required.

Date	Topic	Instructor
Jan. 22	Introduction to remote sensing	Sun, GMU
Jan. 29	Remote sensing of surface radiation budget	Sun, GMU
Feb. 5	Surface temperature derivation from satellite observations	Sun, GMU
Feb. 12	Remote sensing of evapotranspiration (ET)	Sun, GMU
Feb. 19	Surface albedo derivation from satellite observations	Sun, GMU
Feb. 26	Surface type and land cover/land use identification from satellite observations	Sun, GMU
Mar. 5	Snow/Ice cover mapping and monitoring from satellites	Peter Romanov, NOAA
Mar. 12	Spring Break	
Mar. 19	Remote sensing of soil moisture	Xiwu Zhan, NOAA
Mar. 26	Atmosphere temperature and humidity profile retrieval	Sun, GMU
Apr. 2	Atmospheric total precipitable water retrieval	Sun/GMU
Apr. 9	Active microwave remote sensing	Kwiatkowski, NASA

---

Apr. 16	Precipitation retrieval from satellite observations	Sun/GMU
Apr. 23	Remote sensing of air quality	Daniel Tong, NOAA
Apr. 30	Aerosols and volcanic ash detection	Sun/GMU
May. 7	Project presentation/reading day	Students
Dec. 14	Project paper due	

---

- **Grading**

60% will be based on an original research project report.

40% will be based on class assignments, class participation and presentation of research progress.