

## Engs 681: Advanced Sensor Systems Data Collection

### SCHOOL OF ENGINEERING

Advanced sensors in remote sensing contribute every day to the imaging capabilities for monitoring Earth's environment and what effect humans are having on it. This course assumes that the student has taken the basic sensors and platforms course which has introduced the sensors and platforms that accomplish essential data collection and have done it masterfully for years. Advanced Sensors is organized into several units that demonstrate the newest active and passive sensors including advanced synthetic aperture radar, lidar, radiometers, spectrometers, microwave sounders, advanced hyperspectral sensors, and the advanced platforms which carry these sensors. This course will delve deeper into the mathematical theory behind sensors such as RADAR, LIDAR, and synthetic aperture radar interferometry operations and will illustrate sensors and platforms using as examples the current advanced sensors aboard satellites such as ENVISAT, GRACESAT, and ADEOS I and II. Operation of advanced aircraft and balloon payloads such as TOP HAT and BOOMERANG will also be investigated. The course will close by looking at the future to determine tomorrow's advanced sensors and students will realize that today's advanced technologies will become tomorrow's basic technologies.

3 Credits

### Prerequisites

- [Engs 523: Sensors and Platforms](#)

### Instruction Type(s)

- Indiv Based: Individual Based for Engs 681
- Indiv Based: Online Program for Engs 681

### Subject Areas

- [Engineering, Other](#)

