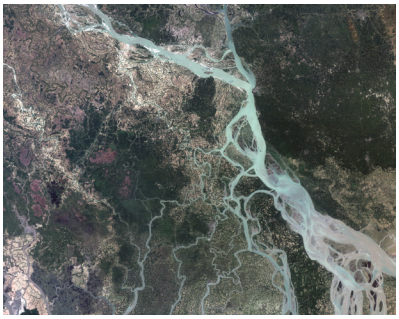
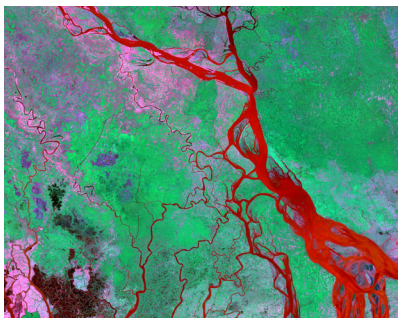
GEOSCIENCES AND GEOLOGICAL
AND PETROLEUM ENGINEERING

GEO ENG 6146/GEOLOGY 6341: Advanced Remote Sensing and Image Processing

Lecture and Lab – Offered Summer 2020





This course is designed to introduce students to geodetic remote sensing techniques, data sources, and processing techniques. Geodetic data includes surface deformation data from Global Navigational Satellite Systems (GNSS) and Interferometric Synthetic Aperture RADAR (InSAR), gravity measurements from the GRACE satellite mission, and high-resolution topography from LiDAR, among others. We will discuss applications of geodesy to hydrologic, geotechnical, and geophysical studies, including problems such as deformation related to faults, volcanoes, and landslides, measurements of relative sea level rise and mass changes of the ice caps, and geodetic signals related to groundwater pumping and flooding. We will learn how to access and use these data sources for scientific and research analysis purposes, and we will build simple mathematical models for interpreting results.

Time/Day: Arranged
Prerequisites: Geo Eng 5146
Units: 3 hours
Course Component(s): Lecture & Lab

Enrollment Information:
Distance Education
Delivery Mode: Internet
Class Number: 71276
Class Section: 101

COURSE OBJECTIVES

- Understand geodetic reference frames: what they are, how they are used, and why they are important.
- Learn the different types of geodetic data and what each measure, how to collect and process the data, and what the limitations are of each data set.
- Learn where and how data sources may be accessed.
- Learn how to access and use software tools for processing and analyzing geodetic data.
- Learn basic modeling techniques for geodetic data.
- Apply the theoretical and practical knowledge gained in the course to complete a term project of the student's choosing.

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Learn More, Contact:
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