This course will broaden students' knowledge in the field of applied geology opening the opportunity to work in environmental & engineering firms across the US.

Topics covered relate to environmental and engineering geology and include: soil and rock mechanics, landslides, and engineering significance of geological structures.

This course is designed to teach students the background & skill sets they need as practicing environmental & engineering geologists.
Looking for a fun science course?

Fall 2019
NASA Space Mission Design

ASTR.260 + (ASTR.260L or ASTR.460L)
or GEOL.260 + (GEOL.260L or GEOL.460L)
or PHYS.260 + (PHYS.260L or PHYS.460L)

Design a mission to VENUS
 teamed with other science students!

TR 12:15 pm to 1:30 pm in SSMB 200
Cass Runyon (Geology), Jon Hakkila (Physics/Astronomy)

Prerequisites: (ASTR 129 and 130 or HONS 390 Astro.) or (ASTR 206) or (GEOL 206 or HONS 395 Geology), or Instructor Permission.

Science teams will work with engineering students at the University of Alabama in Huntsville, and will eventually present their projects before a panel of NASA scientists and engineers to determine the winning project!
Fall 2019 Special Topics
Geology 395: Advanced Mapping Methods
2 credits

EXPRESS II session: Fridays 2:00 – 4:00 pm
Instructor: Dr. Scott Harris
harriss@cofc.edu

Learn the applied aspects of seafloor mapping by learning setup, acquisition, processing, and product development. You will learn start-to-finish how to set up and use the tools here at the College to map and characterize the seafloor (along with rivers and lakes)!

Boats?
Acoustics?
Autonomous Vehicles?

SIGN UP NOW!
GEOL 240/395, Mercury in the Environment

• How does mercury cycle in the environment?
• Why do scientists use mercury to track ancient volcanism?
• How does mercury accumulation impact health?
• What is the distribution of mercury in South Carolina?
• What controls the distribution of mercury in South Carolina?

• In this course you will:
  - Learn the complex biogeochemical cycling of mercury.
  - Develop a research project.
  - Collect natural samples from South Carolina and analyze their mercury contents in a laboratory.
  - Apply your knowledge to the geologic record.

[Diagram of mercury cycle and distribution in South Carolina]
Geol 395: Evolution and Fossil Record of Marine Mammals

Fall 2019 | Fridays 2:00-2:50pm | SSMB 215 | Dr. Robert W. Boessenecker | Capacity: 15

Seminar-style class digesting and discussing contemporary topics and controversies in the evolution and paleontology of whales, dolphins, pinnipeds, sea cows, otters, & others
This new course will serve as the foundational Geoinformatics course. Students successfully completing this will be qualified as GIS users and also will gain experience in remote sensing science and applications. GEOL 449/EVSS 549, Geographic Information Systems course gives additional training at the GIS analyst level. GEOL 469 / EVSS 569, Advanced GIS provides expertise in GIS programming.

**Geospatial Science Learning Goals:** competence in Geographic Information System (GIS) and remote sensing software skills, plus a functional knowledge of the fundamentals and terminology related to maps, geospatial mapping, projections, coordinate systems, the electromagnetic spectrum, data structures, resolutions, and data management.

This course illustrates the concepts of GIS and remote sensing technologies in the context of broader realm of geospatial science. Topics include the use of GIS and remote sensing platforms, remote sensing systems, digital image processing, data structures, and spatial data analysis. The course is not intended to provide students with extensive training in particular image processing or GIS packages. Basic analysis and spatial problem-solving skills will be addressed using hand-on exercises.

Experience working with personal computers and completion of a term project are required.

1. An introductory understanding and working knowledge and applications of Geographic Information Systems (GIS).
2. Knowledge of remote sensing and an introduction to the major remote sensing systems that are in operation today. This will include best practices for extraction information from imagery.
3. Opportunities to apply these tools for understanding information in spatial context in case studies.

**Topics**
1. Introduction to GIS and Remote Sensing
2. History of Remote Sensing Systems
3. Spatial Data, Attribute Data, Visualizations
4. Overview of Current Remote Sensing Systems
5. GIS layers and attributes
6. Text and Table linking to GIS layers
7. Maps, Scale, Points, Lines, Areas, Generalization, Spatial
8. Referencing, Data Sources
9. Multispectral remote sensing applications
10. Area and regional analysis with GIS
Pollutants & how they affect the environment around you

Hands-on, project-based approach

Apply basic sciences & develop transferable skills

Dr. Vijay Vulava (VulavaV@cofc.edu)