

# Certificate in the Application of Geospatial Science to the Field Sciences

## Why Geospatial Science applied to the Field Sciences?

- \* Geospatial Science is virtually required for mapping throughout the field sciences – Archeology, Environmental Science, Field Biology, Geology, and all related fields. It has become accepted throughout these professions that if a map is required, it will be produced through GIS or Remote Sensing.
- \* Our graduates came to the BGES department and requested that a certificate in applied geospatial science be established. Why? They had been looking for jobs and discovered that virtually all of the available jobs required at least some background in GIS, and many also wanted a background in remote sensing. We offered the relevant courses, but with a certificate we could provide a piece of paper that indicated to potential employers that holders of the certificate had taken a series of courses that conferred a reasonable level of skill.
- \* Geospatial Science includes both Geographic Information Systems (GIS) and Remote Sensing. By including courses in both of these disciplines we can provide experience in a broad range of potential applications of these techniques.
- \* We can enable students to accumulate a portfolio of achievements – culminating in a capstone experience designed by the student. This portfolio can be used as evidence of accomplishment or as a starting point for further activity.

## Why should you earn the certificate in Application of Geospatial Science to the Field Sciences?

- \* It deals with skills that are useful, if not essential, to careers in the field sciences
- \* It will give you a credential that will make you more employable.
- \* It deals with an area of knowledge that is extremely interesting and fulfilling.

## What's required to earn the Certificate in Application of Geospatial Science to the Field Sciences?

- \* EVS 422/423 or 522/523 [Spring]: Application of Geographic Information Systems to the Field Sciences. This course provides an introduction to the uses of GIS to various applications, concentrating on applications to the field sciences. It is based on ArcGIS, which has become a prerequisite to a career in all aspects of field science.
- \* EVS 424/425 or 524/525 [Fall]: Introduction to Remote Sensing. This course introduces students to remote sensing using satellite- and aerial-photograph-based imagery to classify and understand the nature and processes active on the surface of the earth. It is based on ERDAS Imagine and ENVI, which together comprise the industry standard for remote-sensing software.
- \* EVS 426/427 or 526/527 [Spring]: Advanced Topics in Remote Sensing and GIS. This course introduces students to advanced topics in geospatial science – primarily in remote sensing. These topics include a more in-depth discussion of the role of error in environmental analysis, object-based imagery analysis, multi-temporal imagery for environmental analysis, etc.
- \* A capstone experience [Any semester, supervised by any appropriate faculty member]: This is normally a portion of the student's capstone requirement – it requires that at least 40% of a 4-credit capstone requirement for an undergraduate degree or the equivalent amount of a graduate thesis or dissertation involve the use of geospatial science. Alternatively it can be a 2-credit course totally devoted to applications of geospatial science.