Geographical Information Systems
Basic Skills and Applications
GIS101
DESCRIPTION

This course starts as a general introduction to the basics of Geographic Information Systems and Science. It covers several major developments along the history of Geo-information and it also provides hands-on experience to ultimately achieve fundamental skills on the use of a Desktop GIS software. Hence, it is a theoretical and practical course, where students will learn both the basics and applications of GIS in different fields, and with particular focus in the Galapagos habitats, where fieldwork will be carried out.

LEARNING OUTCOME

Throughout this module, the students will develop the following skills:

- Start to think spatially
- Understand the importance of a GIS methodology to handle spatial data
- Define the components of a typical GIS
- Differentiate among different types of spatial data
- Gain understanding and experience in the use of Global Positioning Systems
- Infer a general vision of the role of GIS in local and global societies

FORMAT & GRADING

This course will be taught in 3-hour sessions where theory and practical exercises will be combined. It is an intensive course of daily sessions for a period of 3 weeks. Additionally, there will be two fieldwork sessions that require compulsory participation. Students are expected to complete the recommended readings, but more importantly to dedicate additional time to complete the practical guidelines for all exercises.

The final grade will be based in the following criteria:

- GIS papers compendium 15%
- Practical exercise in class 15%
- Map Report from fieldwork 20%
- Final project
  - Written report 35%
  - Oral Presentation 15%

100%

The USFQ grading system and scheme will be utilized to grade the students work and performance, as well as the Honor Code is to be followed at all times.
Topics

- Thinking spatially is especially important
- What is GIS, its origins, components and capabilities
- Understanding spatial data and creating information, in GoogleEarth (ρ)
- GPS basics and hands-on experience in Puerto Baquerizo (f)
- Vector and Raster Data formats (ρ)
- Geoprocessing tools in ArcGIS (ρ)
- Acquiring spatial data for an environmental project in El Junco (f)
- Creating an StoryMap with ArcGIS Online (ρ)
- Georeferencing, Geocoding (ρ)
- Coordinate Systems and Projections
- Final Project workshop
- Presentations

(ρ) = includes a practical session
(f) = includes fieldwork

Considerations

- A more detailed timetable will be shared closer to the starting date, as well as a description of the paper compendium that may be prepared before the students start the course
- The practical sessions will be held at the USFQ facilities at GAIAS
- Fieldwork trips will be organized by GAIAS staff and students will utilized USFQ equipment