Weekly Lecture Hours | Exercise | Laboratory | Field Trip
--- | --- | --- | ---
3

**Description:**

The course is an introduction to the concepts and application of geographic information systems (GIS). It is designed for students without former GIS experience. It focuses on the use of GIS for scientific inquiry and on its application for real-world problem solving. Case studies from various research domains are used as demonstrations. Each lesson comprises of a theoretical introduction and of an exercise. The exercises include training on the ArcView 9.x® software package.

**Evaluation:**

Grading is based on exercises and on a semester project. The project consists of designing and applying a GIS model (acquiring, processing, displaying and analyzing spatial data) relevant to the student’s field of interest. The project includes two major presentations: a Power Point presentation of the project in front of the class and a paper based on the project. Both will be submitted at the end of the semester.

**Course Subjects:**

§ Introduction to GIS: history and concepts.
§ The GIS software.
§ The GIS database: data sources, data types, acquiring data and managing the database.
§ Coordinate systems: geographic and projected.
§ Georeferencing.
§ Data models: raster, vector and TIN.
§ Spatial analysis: concepts and techniques.
§ Spatial interpolation: concepts and methods: IDW, Spline and Kriging.
§ Raster overlay and polygon overlay.
§ GIS query: buffering, location based query and attribute based query.
§ Digitizing and map editing.
§ GIS topology.
§ Introduction to ArcGIS® extensions: the Spatial Analyst and the 3D Analyst.
§ Visualization, display and presentation.

**Comment:**

Your success depends greatly upon attending the lessons. It is impossible to acquire a working knowledge of GIS without understanding the theory and principles behind the GIS software, along with gaining hands-on experience.

**Lecturer:** Aviva Peeters
Office: 6596883, email: apeeters@bgu.ac.il Office hours: Sunday 12.00-13.00

**Recommended Reading:**

5. Course Exercise Manual, Supplied by instructor.

Electronic Resources:
HighLearn site: http://hl2.bgu.ac.il/NewLoginFrames.asp?TopLang=1&lang=1
Software, online support and data: http://www.esri.com/ http://www.geographynetwork.com/
http://www.gisdevelopment.net/index.htm
GIS www resource list: http://www.geo.ed.ac.uk/home/giswww.html
GIS glossary: http://www.geo.ed.ac.uk/agidict/welcome.html