

Al al-Bayt University
Institute of Earth and Environmental Sciences
Applied Geology and Environmental Sciences Department
Course Syllabus

Course Title: Geographic information system lab

Course Number: 801468

Term: Second semester 2019/2020

Class Meeting Days: Sunday

Instructor: Dr. Ibraheem Hamdan

Supervisor: Eng. Ayda Al-Shorafat

Credit hours: 1 h (Lab)

Class Meeting Hours: 11-14/ GIS lab

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Course Aims and Objectives:

This Course will provide students with the important knowledge and skills regarding geographic information systems. The students within this course will learn how to deal with geographic data in all its types, defining and converting geographic data into different geographic and projected coordinate systems, and finally, learning the geo-processes tools that can be applied on the geographic data.

ArcGIS software will be used in this course.

Course Outlines:

- **Lab 1 and 2:** Introduction to GIS, Introduction to ArcGIS software, How to add new layer (vector and raster), Connect and disconnect to folder, Introduction to shape and raster files and the difference between them (examples for points, lines, polygons and raster data), Review all shape and raster files properties, Shape and Raster data symbology.
- **Lab 3:** Create new shape files type: point, lines and polygons based on provided x and y coordinates, Defining coordinate system, Exporting shape and raster data, How to save project (*.mxd) and how to save the project in different ArcGIS versions.
- **Lab 4:** Review the attribute table and its properties, Create new fields in the attribute tables, Manual selection, how to save the selected features in a separate file, Field calculator and calculate geometry in attribute table.
- **Lab 5:** Define projection (in case we have shape file with missing coordinate system), Convert coordinate system, selection by location and selection by attribute, Query, Difference between selection and query.
- **Lab 6:** Map Geo-Referencing
- **Lab 7 and 8:** Geo-Processing tools and editing in shape files
- **Lab 9:** Map layout

Text Book:

Practical course depends mainly on the lecturer material. Students will apply what they learn in parallel with the lecturer

Grading Policy:

Determination of the final grade for this course will be based upon the following:

Mid-term exam 30%

Semester works 20%

Final 50%