

Course Syllabus

1	Course title	Geographic Information Systems (GIS)
2	Course number	1902459
3	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4	Prerequisites	Computer Graphics (1901359)
5	Program title	-CIS
6	Program code	-
7	Awarding institution	The University of Jordan
8	Faculty	KASIT
9	Department	CIS
10	Level of course	4000
11	Year of study and semester (s)	Each semester
12	Final Qualification	Bs.c
13	Other department (s) involved in teaching the course	-
14	Language of Instruction	English
15	Date of production/revision	2016 / February 2020
16	Required/ Elective	Required

16. Course Coordinator:

Dr. Ammar M. Huneiti
Office number: 212
office hours: announced later
phone numbers: 22577
email addresses: a.huneiti@ju.edu.jo

17. Other instructors: -

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18. Course Description:

The purpose of this course is to introduce the concept of Geographic Information Systems (GIS). This includes what can GIS do?, spatial data, GIS data structure, raster versus vector data, topology and spatial relationships, data acquisition, entry, and quality. In addition this course outlines geographic database and inventory operations, basic geographic data analysis, and geographic systems output. The course will also include practical demonstrations on using the state-of-the art GIS software package ESRI's ArcView.

19. Course aims and outcomes:

A- Aims:

The aim of this course is to equip students with knowledge and skills on how GIS work, operate and used and to get benefits of the GIS. The course will also include practical demonstrations on using the state-of-the art GIS software package ESRI's ArcGIS.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

A- Knowledge and Understanding:

- A1) Knowing what modules are included in a GIS and its basic operations including input output and processing.
- A2) Understand the different applications of GISs.
- A3) Know the different kinds of geographic data types.
- A4) Understand different kinds of geographic data structures.
- A5) Understand the concepts of GIS themes and GIS topology.
- A6) Know GIS data entry processes and different kinds of input/output devices.
- A7) Understand Data quality and management: Errors, accuracy, precision and scale.
- A8) Understand Inventory operations.
- A9) Know basic analysis operations and quality metrics applied on digital geographic data.
- A10) Understand the different geographic models and the types of digital maps.
- A11) Use ESRI's ArcView to implement GISs for different applications.

B- Intellectual skills: with the ability to ...

- B1) Distinguish between GISs and other information systems
- B2) Distinguish between different digital maps data structures including raster and vector
- B3) Apply and implement a GIS topology
- B4) Use ESRI's ArcView to implement GISs for different applications and inventory operations
- B5) Input, analyze and output geographic digital data

C- Subject Specific Skills: With ability to

- C1) Use different methods to create a GIS for a specific real world application.
- C2) Verify the quality of the geographic data including tabular and maps.
- C3) Advise on the most suitable type of digital maps to use for a specific application
- C4) Improve the quality of geographic data used in a project

D- Transferable skills:

- D1) Plan for a GIS project including the needed data types
- D2) Manage the needed resources for a GIS project
- D3) Communicate with different external stake holders to deliver a reliable GIS
- D4) Build professional GISs

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
GIS and Applications	1 + 2	main	A1, A2, B1, D2	Reading lecture notes 1&2 and Chap 1, 2 In Class questions	Ch. 1 & Ch.2
Raster and vector data structures:	3	main	A4, B2, C3	Reading lecture notes 3 and Chap 3 In Class questions	Ch. 3
Representing Geography	4	main	A4, B2, C3	Reading lecture notes4 and Chap 3 In Class questions	Ch. 3
Geo-Referencing	5	main	A5, B4	Reading lecture notes5 and Chap 5 In Class questions	Ch. 5
Mid Term Exam	6	main	A1-A6		Ch. 1-5
Remote Sensing	7	main	A4, B2, C3	Reading lecture notes6 and Chap 9 In Class questions	Ch. 9
GIS Topology	8-9	main	A5, B4	Reading lecture notes7 and Chap 10 In Class questions	Ch. 10
Introduction to Arc-Gis	10-11	main and Lab supervisor	A11, B4	In LAB presentation	Lab part 1
Analysis using Arc-Gis	12	main and Lab supervisor	A11, B4, C4, D4	In LAB presentation	Lab part 2
Students Project discussions	13	main and Lab supervisor	A10-A11, B4		
GIS Software	14	main	A8, C4	Reading lecture notes8 and Chap 7 In Class questions	Ch. 7
GIS Data Collection	15	main	A9, D3	Reading lecture notes9 and Chap 9 In Class questions	Ch. 9
Final exam	16		A1 -A10		

21. Teaching Methods and Assignments:

Reading lecture notes and book chapters
In Class questions
LAB

22. Evaluation Methods and Course Requirements:

Project, Assignments and Quizzes	30%
Mid-Term Exam	30%
Final Exam	40%

23. Course Policies:

A- University regulations.

E- Grading policy:

0-40	F	40-49	D-	50-55	D	56-60	D+		
61-64	C-	65-69	C	70-74	C+				
75-78	B-	79-82	B	83-86	B+	87-90	A-	91-100	A

24. Required equipment:

ESRI's ArcGIS software package

2°. References:

A- Required book (s), assigned reading and audio-visuals:

1. **Geographic Information Systems and Science, Paul A. Longley, Michael F. Goodchild, David J. Maguire, David W. Rhind, third Edition, John Wiley and Sons, 2012.**

B- Recommended books, materials, and media:

2. GIS: A Visual Approach, Bruce E. Davis , , second Edition, Onword press, 2002.
3. ArcView 9.x Documentation, ArcGIS ESRI. www.esri.com.
4. International Journal of Geographic Information Systems

2٦. Additional information:

- *Concerns or complaints should be expressed in the first instance to the module lecturer; if no resolution is forthcoming then the issue should be brought to the attention of the module coordinator (for multiple sections) who will take the concerns to the module representative meeting. Thereafter problems are dealt with by the Department Chair and if still unresolved the Dean and then ultimately the Vice President. For the final complaints, there will be a committee to review grading the final exam.*
- *For more details on University regulations please visit <http://www.ju.edu.jo/rules/index.htm>*

This courses' outline and other course material are also available on the University web through moodle.

Name of Course Coordinator: **Dr. Ammar Huneiti** Signature: -----  -----

Date: ---4/3/2020---

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:

Head of Department
Assistant Dean for Quality Assurance
Course File