



University/Academy: Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute: College of Engineering & Technology
Program: B.Sc. Architectural Engineering and Environmental Design

Form no. (12): Course Specification

1- Course Data

Course Code: AR 529	Course Title: Computer Application In Urban Planning (G.I.S)	Academic Year/Level: 5th year / 9th semester
Specialization: Architecture	No. of Instructional Units Credit 2 Lecture 1 Tutorial 3	Prerequisite AR283/AR441

2- Course Aim

This course is addressed to students who have no previous experience with computer-based geographic information handling but who need to learn GIS and desktop mapping technology. It introduces the fundamental concepts and structure of Geographic Information Systems, in the context of other related disciplines such as cartography, remote sensing and urban planning.

The course aims to:

- Cover basic GIS concepts such as map characteristics and projects, spatial data models, relational databases, and spatial analysis.
- Explore sources of data, data quality and database management.
- Approach GIS from an interdisciplinary perspective, including data, examples, and problems.
- Implement and manage GIS projects.

3- Intended Learning Outcomes

a- Knowledge and Understanding	Through knowledge and understanding, students will be able to: <ul style="list-style-type: none">• Demonstrate understanding of the fundamental concepts and structure of Geographic Information Systems.• Explore sources of data, data quality and database management.
b- Intellectual Skills	Through intellectual skills, students will be able to: <ul style="list-style-type: none">• Implement and manage GIS projects.
c- Professional Skills	Through professional and practical skills, students will be able to: <ul style="list-style-type: none">• Apply urban planning presentation.□.
d- General Skills	Through general and transferable skills, students will be able to: <ul style="list-style-type: none">• Present different subjects scientifically, logically and professionally.

4- Course Content

- | | |
|-------------------|--|
| Week No.1 | Overview of Geographic Information System |
| Week No.2 | Maps and Map Projection |
| Week No.3 | Coordinate System |
| Week No.4 | Spatial Data Model |
| Week No.5 | Data Quality and Sources |
| Week No.6 | Input and Output |
| Week No.7 | Continuation of the previous lecture and evaluation. |
| Week No.8 | Database Concept 1 |
| Week No.9 | Database Concept 2 |
| Week No.10 | Spatial Analysis |
| Week No.11 | Making and Producing Maps |
| Week No.12 | Continuation of the previous lecture and evaluation. |
| Week No.13 | Implementation |
| Week No.14 | The Future of GIS |
| Week No.15 | Revision. |

5- Teaching and Learning Methods

The course comprises a combination of:
Lectures, tutorials, and practical project.

6-Teaching and Learning Methods for Students with Special Needs

- Consulting with lecturer during office hours.
- Consulting with teaching assistant during office hours.
- Private sessions for redelivering the lecture contents.
- For handicapped accessibility, please refer to program specification.

7- Student Assessment

Asses No.	Procedures used		Start Week No.	Subm. Week No.	Weighting of Asses.
	Type	To assess			
1	Practical Exam	Knowledge and understanding Intellectual skills.		7	30%
2	Practical Exam	Knowledge and understanding Intellectual skills.		12	20%
3	Project	All skills	7	13	10%
4	Practical Exam	All skills		15	40%
Total					100%

8- List of References:

a- Course Notes	Notes are handed out on a weekly basis.
b- Required Books (Textbooks)	N/A
c- Recommended Books	<ul style="list-style-type: none"> • DEMERS, Michael N., <i>Fundamentals of Geographic Information Systems</i>, Wiley, New York. 1997. • ESRI, <i>Getting to Know Arc View GIS</i>, 2nd Ed, 1997. • ERSI, <i>Understanding GIS, the Arc/Info Method</i>, Environmental Systems Research Institute, New York, 1998. • Menno-Jan Kraak and Ferjan Ormeling. <i>Cartography: Visualization of Geospatial Data</i>, 2nd Edition. Prentice Hall, 2003. www.cartographybook.com • Ian Heywood, Sarah Cornelius and Steve Carver. <i>An introduction to Geographical Information Systems</i>, Prentice Hall, 2002.
d- Periodicals, Web Sites, etc.	www.booksites.net/heywood