

Zarqa University

Faculty of Engineering
Department: Civil Engineering
Course title: Remote Sensing



Prerequisite:

Instructor: As schedule

Lecture's time: As schedule

Semester: As schedule

Office Hours: As schedule

Course description:

The main objective of the course is to develop an understanding of remote sensing theory and systems in visible; near-, mid-, and thermal-infrared; and microwave regions of the EM spectrum.

The course will provide students with technical skills to apply remote sensing for problem solving in environmental domains. Through laboratory work, students will have opportunities to practice various aspects of ArcGIS to learn basic skills.

Intended Learning Outcomes (ILOs):

1. Have knowledge and understanding of the basic concepts, principles and applications of remote sensing.
2. Have functional knowledge of ArcGIS
3. Be able to derive solutions to given quantitative problems particularly related to geometric principles, EM radiation.
4. Have an understanding of the trade-offs in sensor design, orbit, resolution etc. required for a range of applications.
5. Have an understanding of the propagation of radiation transfer in vegetation, and be able to explain the problem, and propose mathematical solution.
6. Have an understanding of Image resolution types and photo interpretation
7. Have an understanding of Remote Sensing Application.
8. Have an understanding of relationship between GIS and remote sensing.

Course structures:

Week	C. Hrs	ILOs	Topics	Teaching Procedure	Assessment methods
1-2	4	1	Introduction to Remote Sensing (history scope)	participations Ppt. presentations, Discussion	Homework and Discussion
2-3	6	3	Electromagnetic Radiation – physics and transfer	participations Ppt. presentations, Discussion	Homework and Discussion
3-5	6	4	R.S sensor and camera Types	participations Ppt. presentations, Discussion	Homework and Discussion
5-7	6	6	Image resolution types and photo interpretation Leveling Exam I (up to end of week 6)	participations Ppt. presentations, Discussion	Homework and Discussion
7-10	9	7	Remote Sensing Application.	participations Ppt. presentations, Discussion	Homework and Discussion
10-12	6	8	Remote Sensing and Geographic Information Systems Exam II (up to end of week 12)	participations Ppt. presentations, Discussion	Homework and Discussion
12-13	6	8	Practice GIS	participations Ppt. presentations, Discussion	Homework and Discussion
13-14	3		Review, Final Exam		

References:

Remote Sensing: The image change approach, Oxford University Press, Schott, J (1997)

Handouts

Getting to Know ArcGIS

Assessment Methods:

Methods	Grade	Date
Quizzes and Homework and Project	10	As schedule
First Exam	20	As schedule
Second Exam	20	As schedule
Project	-	-
Final Exam	50	As schedule

