Course Description Form

1. Course Name:
Remote sensing
2. Course Code:
RESE352
3. Semester / Year:
First Semester / 2024-2025
4. Description Preparation Date:
1 / 9 / 2024
5. Available Attendance Forms:
Built-in
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mohammed Younis Salim Al-Allaf Email : mohammed_yonuis@uomosul.edu.iq Name: Faiza Ali Rasheed Email: faiza_ali@uomosul.edu.iq

8. Course Objectives

Theory : - Enabling the student to know how to obtain a huge amount of information in the field of forest sciences in a short time and at the lowest cost - Enabling the student to manage forest sciences - Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss.	Practical : - Developing the student's ability to deal with remote sensing techniques - Enabling the student to analyze and interpret information using Remote sensing technology - Enabling the student to process information using remote sensing technology - Developing the student's ability to deal with the Internet

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1: Learn about the history of remote sensitivity, its goals, and stages practical : a10: Gets acquainted with the interface of the ERDAS program and recognizes the program's	Theory: Definition of remote sensitization practical : ERDAS interface	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

		commands and bars			
2	2Theory 3 Pract	Theory: a2: Familiar with the components of the model Remote sensitivity and how to explain it data practical: a11: Reviews satellite images and sites from which satellite data can be downloaded for free	Theory: The remote sensing model and its physical basis practical: Review of satellite images	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2Theory 3 Pract	Theory: a3: Explaining the fields in which remote sensing devices operate, including the sections of the electromagnetic spectrum practical: a12: The regular and irregular method is used to cut the study area	Theory: Information collected by remote sensing devices and its most important applications practical : Regular and irregular cutting of the study area	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
4	2Theory 3 Pract	Theory: a4: Knows the primary and secondary colors, color properties, and the field of vision of the human eye practical : b4: Applies the regular irregular method to cut an area the study	Theory: Color theory practical : Practical exercises on how to plot the study area from satellite data	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2Theory 3 Pract	Theory: C1: Explains the foundations of interpreting remote sensitivity data practical : b5: Connects precisely defined points on the map and known physical coordinates based on the location And the map reference	Theory: Foundations of interpretation of remote sensitivity data practical : Geo correction	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2Theory 3 Pract	Theory: a5: Compares digital interpretation with visual interpretation of satellite image practical : b6: Distinguish between features and analyze them by improving the visual interpretability of the	Theory: Methods of interpreting data practical : Improve satellite image and aerial images	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

		image			
7	2Theory 3 Pract	Theory: C2: Explains the sections of the electromagnetic spectrum and the stages of leaf deterioration practical : A13: Compares spectral, spatial, and radiometric visual improvement methods	Theory: Spectral reflectivity properties of plants practical : Spatial, radiometric and spectral enhancement of satellite data	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2Theory 3 Pract	Theory: b1: Distinguishes between types of soil different practical : a14: Learn about the method of collecting bands (packets), the commands for collecting bands, and how to measure Spaces and distances	Theory: Spectral reflectivity properties of soil practical : Collecting bands and measurements of areas and distances	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2Theory 3 Pract	Theory: b2: Distinguish between clear water and water polluted by algae and dust practical : b3: Applies the method of adding bands to satellite images and the measuring ruler to determine areas and distances practically	Theory: Spectral reflectivity properties of water practical : Practical exercises	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
10	2Theory 3 Pract	Theory: C3: Explains the most important advantages that can be provided by remote sensing systems carried on satellites practical : a15: Learn how to unsupervised classification of satellite images	Theory: Satellite characteristics practical : unspervised classification of satellite images	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
11	2Theory 3 Pract	Theory: A6: Explains the American, French, and Indian satellites, radar, their discrimination capabilities, and the packages they inclu practical : a16: supervised	Theory: American, French and Indian satellites practical : supervised classification Satellite image	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical :	Exams, Homework, Reports

		classification of Satellite image		Assigning tasks and reports	
12	2Theory 3 Pract	Theory: a7: Digital analysis of spectral data is used practical: b7: Distinguish between supervised and unsupervised classification methods for satellite images	Theory: Digital analysis of spectral data practical : Comparing supervised and unsupervised classification methods for satellite images	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2Theory 3 Pract	Theory: a8: Shows ways to improve satellite data practical : a18: Learn how to produce a map using the program by listing the basic map elements	Theory: Ways to improve space data practical : Map production	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
14	2Theory 3 Pract	Theory: C4: Distinguish between supervised and unsupervised classification methods practical : C5: Determines the best method for classifying supervised and unsupervised classification satellite images after merging the bands	Theory: Methods of classifying space data practical : Integration of processing operations by combining data with supervised and unsupervised classification of satellite images	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2Theory 3 Pract	Theory: a9: Learn about the applications of remote sensing in forests practical : a19: Employs visual enhancement with map production	Theory: Remote sensing in forests practical : Integration of processing operations (satellite visual enhancement and map production)	Theory : -Auditory methods. -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15

	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of remote sensing and visual interpretation, Dr. Hikmat Subhi Al-Daghistani
Main references (sources)	Remote sensing interpretation
Recommended books and references (scientific journals, reports...)	Remote sensing basics and applications book, Dr. Nabil Subhi Al-Daghistani Remote Sensing and Visual Interpretation book, translated Thomas. M. Lillesand and Ralph, translated by Dr. Hassan Helmy Kharouf Principles of remote sensing book

http://www.ersi.ca/

Teacher of Theory : Prof. Mohamed younis Al-alaf

Teacher of Practical : Faiza Ali Rashid

Chairman of the Scientific Committee : Prof. Mohamed younis Al-alaf

Head of the Dept. of Forestry Sciences: Prof .Muzahem Saeed Younis

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