Course Description Form

1. Course Name:
Remote sensing
2. Course Code:
RESE352
3. Semester / Year:
First Semester / 2023-2024
4. Description Preparation Date:
1 / 9 / 2023
5. Available Attendance Forms:
Attendance
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 i short time and at the lowest cost - Enabling the student to manage forest sciences - Developing the student's ability to deal with multipl 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 commands and bars	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

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 cu the study area	Theory: Information collected by remote sensing devices and its most important applications practical : Regular and irregular cutt 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 foundation 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 image	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

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 include practical : a16: supervised classification of Satellite image	Theory: American, French and Ind satellites practical : supervised classification Satellite image	Theory : -Auditory methods, -Style of writing on The blackboard. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, 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 unsupervise classification of satellite images after merging the bands	Theory: Methods of classifying space data practical : Integration of processing operations by combining data with supervised and unsupervised classificatio 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.	% ١٣
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% ٦
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% ١٥
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% ٦
	Final exam (practical)	Exam pract.	20	% ٢٠

	Final exam (theory)	Exam theory	40	% ٤٠
			100	% ١٠٠

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Principles of remote sensing and visual interpretation, Dr. Hik 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 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 Reasheed

Chairman of the Scientific Committee :Prof. Mohammed Younis Salim Al-Allaf

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