Remote Sensing Course Description

1. : Course name
remote sensing
2. : Course code
RESE352
3. : Chapter / Year
the chapter 2025 - 2024 / Third phase / Second spring
4. : Date this description was prepared
2025/2/1
5. Available attendance forms:
In-person/online
6. :Number of study hours (total) / Number of units (total)
theoretical + 3 practical / 3.5 units 2
7. : Name of the course administrator (if more than one name is mentioned)
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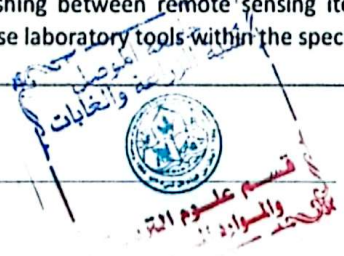
8. Course objectives
- Empowerment The student from to understand And comprehension what Related By remote sensing And its relationship Soil and Water Resources Sciences -Empowerment The student from knowledge Most important features remote sensing -Empowerment The student from Familiarity Most important Applications of remote sensing in other sciences - Empowerment The student With ability Detection on Space data -can The student that Interprets, processes, and outputs .remote sensing maps Empowerment - The student from Recognition on Most important Roads Laboratory in Monitoring changes in vegetation cover and detection on Reflectivity of every phenomenon on the Earth's surface
9. Teaching and learning strategies
- Interactive lecture - brainstorming - Dialogue and discussion - Field training - Practical exercises - Field project - Self- learning
10. Course structure

week	watches	Required learning outcomes	Name of unit or topic	Learning method	Evaluation method

1	2 theoretical	A1 The student should be able to demonstrate : sound knowledge and understanding of remote .sensing B1 He has the practical and mental knowledge and : . concepts that help him in remote sensing	Introduction to Remote Sensing	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm Exam 1, Final Exam
	3 practical	A1 The student should be able to demonstrate : sound knowledge and understanding of remote .sensing C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty	Concepts and foundations of remote sensing	Interactive lecture, brainstorming, dialogue and discussion, field training, self- learning	Short practical test 1
2	2 theoretical	A2 Explains : The student The most important remote sensing operations B1 He has the practical and mental knowledge and : concepts that help him in the stages of remote . sensing	Stages and processes of remote sensing	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm Exam 1, Final Exam
	3 practical	C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory instruments within the .specialty	Aerial survey sources and information	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	a report
3	2 theoretical	A2 Explains : The student The most important remote sensing operations	Properties of electromagnetic radiation	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm Exam 1, Final Exam
	3 practical	C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty B9 The student should be able to suggest methods : for analyzing aerial photographs and data and .interpreting agricultural phenomena	Types of aerial photographs and the difference between them	Interactive lecture, brainstorming, dialogue and discussion, field training, self- learning	Field evaluation
4	2 theoretical	A2 Explains : The student The most important remote sensing operations C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty D1 : The student will use computer programs to analyze and display data and information in the field . of remote sensing	Remote sensing and electromagnetic spectrum applications	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm Exam 1, Final Exam Report .
	3 practical	C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory instruments within theC9 specialty : The student should be able to conduct applied research and use statistical programs in .experimental design and data analysis	Coordinate system on aerial photographs and distance between points	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Short Practical Test 2
5	2 theoretical	C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty D1 : The student will use computer programs to analyze and display data and information in the field . of remote sensing	Characteristics of aerial photographs	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm Exam 1, Final Exam Report .

	3 practical	C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty D12 Depends : The student any A special equation for reflectivity, uses information technology to obtain data and information easily and conveniently .	Finding ground coordinates	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Field evaluation
6	2 theoretical	A2 Explains : The student The most important remote sensing operations C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty D1 : The student will use computer programs to analyze and display data and information in the field . of remote sensing	Spectral reflectance properties of soil, plants, and water	Interactive lecture, brainstorming, dialogue and discussion, self-learning	short test, final test
	3 practical	C9 The student should be able to analyze data : related to satellites and use calculators and .programs D12 Depends : The student any A special equation for reflectivity, uses information technology to obtain . data and information easily and conveniently	Spectral bands and their ranges in satellites and reflectivity reading	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live drawing and homework
7	2 theoretical	A1 The student should be able to demonstrate : sound knowledge and understanding of remote . sensing C9 The student should be able to analyze data : related to satellites and use calculators and .programs	Study of space visuals	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm Exam 2, Final Exam
	3 practical	C9 The student should be able to analyze data : related to satellites and use calculators and .programs D1 : The student will use computer programs to analyze and display data and information in the field . of remote sensing E3 The student will work efficiently and effectively : in the field of work and practice the characteristics .and features of satellites	Black and white film and color film	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Field project
8	2 theoretical	C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty C9 The student should be able to analyze data : related to satellites and use calculators and .programs	Spectral, radiometric and temporal resolution	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm Exam 2, Final Exam
	3 practical	B18 The student should be able to analyze data and : information in the land, water and environment .sector to find the most appropriate solutions C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty	Engineering analysis of systems	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	drawing , homework



9	2 theoretical	A1 The student should be able to demonstrate : sound knowledge and understanding of remote . sensing C9 The student should be able to analyze data : related to satellites and use calculators and .programs	Elements of aerial photo interpretation	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Midterm Exam 2, Final Exam
	3 practical	B18 The student should be able to analyze data and : information in the land, water and environment . sector to find the most appropriate solutions D12 Depends : The student any A special equation for reflectivity, uses information technology to obtain . data and information easily and conveniently	Thermal aerial photography	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live drawing and homework
10	2 theoretical	A2 Explains : The student The most important remote sensing operations C9 The student should be able to analyze data : related to satellites and use calculators and .programs	Interpretation of phenomena in images and visuals	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Term 2 Exam
	3 practical	C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty D12 Depends : The student any A special equation for reflectivity, uses information technology to obtain . data and information easily and conveniently	Thermal energy detectors in observing the Earth's surface features	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live drawing and homework
11	2 theoretical	A2 Explains : The student The most important remote sensing operations C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty	Spectral and temporal resolution of satellites	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final exam
	3 practical	B18 The student should be able to analyze data and : information in the land, water and environment . sector to find the most appropriate solutions C9 The student should be able to analyze data : related to satellites and use calculators and .programs C24 The student should be proficient in using : modern technologies, managing machines , .equipment , and geographic information systems	Study of the objective, enhanced and processed mapper for satellites	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live drawing and homework
12	2 theoretical	A2 Explains : The student The most important remote sensing operations B20 The student should be able to analyze the : factors that have a mutual influence between water .scarcity, desertification, and climate change C6 Discover : The student Any means of distinguishing between remote sensing items and able to use laboratory tools within the specialty	Definition of spatial resolution of satellite imagery and the capabilities of . different sensors	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final exam
	3 practical	B18 The student should be able to analyze data and : information in the land, water and environment . sector to find the most appropriate solutions B48 The student should be able to identify and : .measure land areas and conduct spatial analysis	Multispectral combing	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, self-learning	Live drawing and homework

		C3 The student should be able to analyze data related to satellites and use calculators and programs			
	3 theoretical	A3 Explains : The student The most important remote sensing operations C3 The student should be able to analyze data related to satellites and use calculators and programs	Types of satellite images according to spatial resolution and their classification according to the most accurate	interactive lecture, brainstorming, dialogues and discussion, self learning	Final exam
14	4 practical	B20 The student should be able to analyze the factors that have a mutual influence between water scarcity, desertification, and climate change B22 The student should be able to identify and measure land areas and conduct spatial analysis C3 The student should be able to analyze data related to satellites and use calculators and programs	Use of calculator to differentiate and interpret spatial data	interactive lecture, brainstorming, dialogues and discussion, field training, practical exercises, self learning	Use drawing and homework
	3 theoretical	C6 Discuss : The student Any means of distinguishing between remote sensing vocabulary and able to use laboratory tools within the specialty C3 The student should be able to analyze data related to satellites and use computers and programs	Radiation accuracy of sensors and their factors	interactive lecture, brainstorming, dialogues and discussion, self learning	short test, final test
15	4 practical	C3 The student should be able to analyze data related to satellites and use calculators and programs C 22 the student should monitor changes in natural phenomena such as soil degradation, desertification, and water pollution, which lead to the death of beneficial organisms D12 Expands : The student may A special equation to reflectivity, uses information technology to obtain data and information easily and conveniently	remote sensing software in the study of space data	interactive lecture, brainstorming, dialogues and discussion, field training, practical exercises, self learning	Short practical test 1
	3 theoretical	C6 Discuss : The student Any means of distinguishing between remote sensing vocabulary and able to use laboratory tools within the specialty C3 The student should be able to analyze data related to satellites and use computers and programs	Elements of aerial photographs and comparison between images	interactive lecture, brainstorming, dialogues and discussion, self learning	short test, final test
15	4 practical	C4 the student will work efficiently and effectively in the field of work and practice the characteristics and features of satellites C3 The student should be able to analyze data related to satellites and use calculators and programs C 22 the student should monitor changes in natural phenomena such as soil degradation, desertification, and water pollution, which lead to the death of beneficial organisms	Using ERAS software and Arcmap	interactive lecture, brainstorming, dialogues and discussion, field training, practical exercises, field project, self learning	Field project

		D1 : The student will use computer programs to analyze and display data and information in the field . of remote sensing			

11. Course Evaluation

T	Evaluation methods	Calendar appointment (week)	degree	Relative % weight
1	Report 1	Fourth week	2.5	2.5
2	Report 2	Fifth week	2.5	2.5
3	Short Test)1(Quiz	Week 6	2	2
4	Short Test)2(Quiz	Fourteenth week	2	2
5	Short Test)3(Quiz	The fifteenth week	1	1
6	Midterm Exam)1(	Week 6	7.5	7.5
7	Midterm Exam)2(	The eleventh week	7.5	7.5
8	Final theoretical exam	Final semester exams	40	40
9	Practical field project	The fifteenth week	5	5
10	Field evaluation	The third and fifth week	2	2
11	Practical Short Test)1(Quiz	First week	1	1
12	Practical Short Test)2(Quiz	Fourth week	0.5	0.5
13	Practical Short Test)3(Quiz	Fourteenth week	1	1
14	Live drawings and homework	Weeks 6, 8, 9, 10, 11, 12, and 13	5.5	5.5
15	Final practical exam	Final semester exams	20	20
	the total	100	%100	%100

12. Learning and teaching resources

Required textbooks (methodology if any) Introduction to Remote Sensing	**Dagestani, Hikmat**
Main references (sources) Remote sensing	Lilisand
Recommended supporting books and references (scientific journals, (...reports	Internet
Electronic references, websites	nothing

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