

Course Description Form

1. Course Name: Geophysics	
seismology, seismic method (refractive and reflection), electrical method, gravitational and magnetic method	
2. Course Code:	
3. Semester / Year: Year	
First and Second Semester / Year 2024	
4. Description Preparation Date:	
14/ 03/ 2024	
5. Available Attendance Forms:	
My presence only	
6. Number of Credit Hours (Total) / Number of Units (Total)	
120 hours per year. 4 hours per week/ 4 Units	
7. Course administrator's name (mention all, if more than one name)	
Name: Assistant. Teacher. Ali Kareem Jahid Abdulhassan Alawadi Email: alikaar.geo@sci.utq.edu.iq	
8. Course Objectives	
- Geophysics is the application of physics to the study of the Earth - It is based on the study of the physical properties of rocks and their variation from one region to another - Learn about earthquake seismology - Refractive and refractive oil exploration methods in formations and methods of interpretation - Refractive and refractive exploration methods identify fractures, breaks and water saturation in ground layers under structures and building treatment methods, and ease of hazard identification	- Earth's physical properties geophysics aim to detect the presence of subsurface structures or objects and to determine their size, shape, and depth by varying physical properties. - By studying the Earth's interior by studying the variation in physical properties between rock layers - Differences between the strengths and intensities of magnetic, electrical resistivity, thermal conductivity, gravity and other geophysical properties - Electrical method for determining water content and reservoirs - Gravimetric and magnetic methods study subsurface density changes and identify large-scale geological structures

9. Teaching and Learning Strategies					
Strategy	1- Collaborative concept mapping learning strategy. 2- Brainstorming teaching strategy. 3- Notebooking strategy 4- Application Strategy for Mathematical Problems 5- Data Interpretation and Exploration				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2the+2lab	1- The student	Definition of	1- Explain the	Weekly, monthly, daily, and written exams and the end of the first semester exam.
2	2the+2lab	familiarized wi	seismology,	theoretical	
3	2the+2lab	oil exploration	Seismic issues,	material through	
4	2the+2lab	methods	seismic method,	lectures and th	
5	2the+2lab	2-To familiarize	elasticity theory,	use of video an	
6	2the+2lab	students with t	stress-strain-elast	visual	
7	2the+2lab	importance of	moduli, factors	simulations to	
8	2the+2lab	geophysical	affecting seismic	understand	
9	2the+2lab	theories and la	wave velocities,	evolution.	
10	2the+2lab	using reflection	first exam	2- Making	
11	2the+2lab	and refraction	Seismic refraction	quarterly repor	
12	2the+2lab	surveys.	hidden layer	for each studen	
13	2the+2lab	3-Determine	problem, apparen	and discussing	
14	2the+2lab	subsurface	velocity, seismic	them to increas	
15	2the+2lab	structures from	reflection, seismic	research and	
Holiday	2the+2lab	gravity and	reflection,	scientific	
16	2the+2lab	magnetic value	processing steps,	knowledge.	
17	2the+2lab	4-Learn about	interpretation of	3- Scientific an	
18	2the+2lab	seismology,	seismic reflection,	applied travels	
19	2the+2lab	magnitude,	Second exam	develop	
20	2the+2lab	intensity, cause	Electrical Method	students'	
21		and how to	Apparent	thinking	
22	2the+2lab	minimize risk.	Resistivity,	4- Practi	
23	2the+2lab	5-Data	Relationship	application a	
24	2the+2lab	processing and	between Porosity	mathematical	
25	2the+2lab	interpretation	and Resistivity,	issues on pap	
26	2the+2lab	6- Identify oil	Electrode	and usi	
27	2the+2lab	traps and their	Arrangement,	modern	
28	2the+2lab	locations	Resistivity of Rock	programs	
29	2the+2lab	7- Knowing the	and Earth Materia	processing a	
30	2the+2lab	water content	Electrical Resistiv	interpretation	

	2the+2lab 2the+2lab 2the+2lab 2the+2lab 2the+2lab 2the+2lab 2the+2lab 2the+2lab 2the+2lab 2the2lab	and water reservoirs and utilizing them i an electrical wa 8- Treating structures that suffer from cracks and cavities by refractive and electrical methods	Survey Procedure 3D Survey Procedure, Interpretation Results, First Exa Importance and Applications of th Gravitational Method, Geodesy, Geodesy, Gravimetry and Instrumentation, Gravitational Corrections, Gravitational Anomalies, Densit Determination, Magnetic Method, Magnetic Corrections, Magnetic Corrections, Seco Exam		Weekly, monthly, daily, a written exams a the end the second-se ester exam
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11. Course Evaluation

The distribution is as follows: 35 points for monthly and daily exams and reports for the theoretical side and 15 points for monthly and daily exams for the practical side for the first semester. 35 marks for monthly and daily exams and reports for the theoretical side and 15 marks for monthly and daily exams for the practical side for the second semester. 100 marks for final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of Geophysical Methods (Shar 1988)
Main references (sources)	Milsom, John, 2003
Recommended books and references (scientific journals, reports...)	● Kearey, P., Brooks, M. and Hill, I. (2002), ● Telford, W.M., Geldart, L.P., Sheriff, R.E. and Keys, D.A(1990)
Electronic References, Websites	https:// www.usgs.gov/centers /gggsc/science/geophysics

	https://www.researchgate.net/profile/Ali-Jahe/ed/research.net
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