

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**



Academic Program and Course Description

2024

Academic Program Description Form

Syllabus:

University name: University of Mosul

College/Institute: College of Science

Scientific Department: Geology Department

Name of the academic or professional program: geology's degree

Name of final degree: Bachelor's degree (Geology)

Academic system: semester

Description preparation date: 2024

Date of filling the file: 2024

Signature:

Signature:

Head of Department Name:

Scientific Associate Name:

Date:

Date:

The file

is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. Program vision

Building a scientific department in a modern system with advanced curricula and competent scientific staff that match world standards, as well as striving to make the department a scientific edifice with specialized and technically advanced scientific laboratories furnished with all modern scientific equipment and devices.

2. Program letter

The Department of Geology sought to provide the scientific community of the country with qualified graduates who participate in the implementation of development plans and raise the levels of civilizational progress at the academic and applied levels in the field of Earth Sciences.

3. Program goals

The importance of Geology comes from the fact that it provides the requirements of human life. This stems from the reality that each branch of geology has a strong connection with industrial, agricultural, economic or service aspects of life. The main objectives are the following:

- 1- Teaching undergraduate and postgraduate levels, and conducting scientific, academic and applied research in the domains of Geology.
- 2- Saving or providing highly-qualified specialists to implement plans and draw strategies for different institutions of the government.
- 3- Standing (the department) as a consulting front for the projects of the state geological departments, participating in the implementation of geological programs for the private and public sector.

4. Programmatic accreditation

Accredited so far by ABET

Waiting for the ministerial accreditation standards that will be launched soon

5. Other external influences

Pending ministerial accreditation standards

6. Program structure

Program structure	No. of courses	Credits	Percentage	Notes
Institute requirements	5	11	4.6	
College requirements	1	2	0.8	
Department requirements	42	227	94.6	
Summer training				The student is requested a summer training at the end of the sixth semester
Others				

* Notes may include whether the course is core or elective

7. Program description



Republic of Iraq - Ministry of Higher Education and Scientific Research
University of Mosul
Bachelor's degree in Geology Science (First cycle)
Four years nine semesters - 240 ECTS credits - 1 ECTS = 25 hr

Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة الموصل
بكالوريوس علوم في علوم الأرض (الدورة الأولى)
أربع سنوات تسع فصول دراسية - 240 وحدة اوروبية - كل وحدة اوروبية = 25 ساعة

المناهج الدراسية للعام 2023-2024



Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)					Semn (hr/w)	Exam hr/s em	SSWL hr/s em	USSWL hr/se m	SWL hr/s em	ECTS	Module Type	Prerequisite Module(s) Code	
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)									
UGI	One	1	GEO-1101	General Geology I	الجيولوجيا العامة 1	English	2	1	2		1		3	93	107	200	8.00	C		
		2	GEO-1102	Crystallography	البلورات	English	2	1	2		1		3	93	107	200	8.00	C		
		3	GEO-1103	Chemistry	الكيمياء	English	2	1	2		1		3	93	107	200	8.00	C		
		4	Sci-101	Mathematic	الرياضيات	English	2						3	33	17	50	2.00	B		
		5	UOM-104	Democracy & Human Right	حقوق انسان و حريات ديمقراطية	Arabic	2						3	33	17	50	2.00	B		
		6	UOM-101	Arabic Language	اللغة العربية	Arabic	2						3	33	17	50	2.00	B		
								Total	12	3	6	0	3	0	18	378	372	750	30.00	
	Two	1	GEO-1214	General Geology II	الجيولوجيا العامة 2	English	2	1	2		1		3	93	107	200	8.00	C	GEO-1101	
		2	GEO-1205	Mineralogy	المعادن .	English	2	1	2		1		3	93	107	200	8.00	C		
		3	GEO-1206	Physics	الفيزياء	English	2	1	2		1		3	93	82	175	7.00	C		
		4	GEO-1207	Statistics	أحصاء	English	2						3	33	17	50	2.00	C		
		5	UOM-103	Computer	الحاسبات	English	2		2				3	63	12	75	3.00	B		
		6	UOM-102	English Language	اللغة الانكليزية	English	2						3	33	17	50	2.00	B		
								Total	12	3	8	0	3	0	18	408	342	750	30.00	
Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)					Exam	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite Module(s) Code		


Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/s em	SS WL hr/s em	USS WL hr/se m	SWL hr/s em	EC TS	Module Type	Prerequisite Module(s) Code	
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)								
UGII	Three	1	GEO-2318	Optical Mineralogy	بصرية المعادن .	English	2	1	3		1		3	108	42	150	6.00	C	GEO-1215	
		2	GEO-2309	Paleontology	علم المتحجرات	English	2	1	2				3	78	72	150	6.00	C		
		3	GEO-23010	Sedimentology	الرسوبيات .	English	2	1	2				3	78	47	125	5.00	C		
		4	UOM-201	Crimes of the defunct Baath Party	جرائم حزب البعث البائد	Arabic	2						3	33	17	50	2.00	B		
		5	GEO-23011	Petrology	علم الصخور	English	2	1	2				3	78	72	150	6.00	C		
		6	GEO-23012	Geomorphology	جيومورفولوجي	English	2		2				3	63	62	125	5.00	C		
								12	4	11	0	1	0	18	438	312	750	30.00		
	UGII	Four	1	GEO-24013	Igneous Petrology	الصخور النارية	English	2		3				3	78	47	125	5.00	C	
			2	GEO-24014	Micropaleontology I	المتحجرات الدقيقة I	English	2		3				3	78	47	125	5.00	C	
			3	GEO-24015	Sedimentary Petrology	الصخور الرسوبية	English	2		3				3	78	47	125	5.00	C	
			4	GEO-24016	Metamorphic Petrology	الصخور المتحولة	English	2		3				3	78	47	125	5.00	C	
			5	GEO-24117	Invertebrates Paleontology	علم المتحجرات اللافقرية	English	2		2				3	63	62	125	5.00	C	GEO-2319
6			GEO-24018	Remote Sensing	التحسس النائي	English	2		2				3	63	62	125	5.00	C		
									12	0	16	0	0	0	18	438	312	750	30.00	

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/s em	SS WL hr/s em	USS WL hr/se m	SWL hr/s em	EC TS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGIII	Five	1	GEO-35019	Structural Geology I	الجيولوجيا التركيبية 1	English	2		3				3	78	47	125	5.00	C	
		2	GEO-35020	Geotectonic	الجيوتكتونكس .	English	2	1	2				3	78	47	125	5.00	C	
		3	GEO-35021	Gravity and Magnetic methods	الطريقة الجذبية والمغناطيسية	English	2	1	2				3	78	47	125	5.00	C	
		4	GEO-35022	Geochemistry	الجيوكيمياء	English	2		2				3	63	62	125	5.00	C	
		5	GEO-35023	Stratigraphy	علم الطبقات .	English	2		2				3	63	62	125	5.00	C	
		6	GEO-35124	Micropaleontology II	المتحجرات الدقيقة 2	English	2		3				3	78	47	125	5.00	C	GEO-24014
							12	2	14	0	0	0	18	438	312	750	30.00		

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/s em	SS WL hr/s em	USS WL hr/se m	SWL hr/s em	EC TS	Module Type	Prerequisite Module(s) Code		
						CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)									
Six	1	GEO-36125	Structural Geology II	الجيولوجيا التركيبية 2	English	2		3				3	78	72	150	6.00	C	GEO-24019		
	2	GEO-36026	Field Geology	الجيولوجيا الحقلية .	English	2	1	2				3	78	47	125	5.00	C			
	3	GEO-36027	Basin analysis and Sequence Stratigraphy	تحليل احواض وطباقية التتابع	English	2	1	2				3	78	47	125	5.00	C			
	4	GEO-36028	Sedimentary environments	بيئات رسوبية	English	2		3				3	78	72	150	6.00	C			
	5	GEO-36029	Geology of Iraq	جيولوجيا العراق .	English	2	1	2				3	78	47	125	5.00	C			
	6	GEO-36030	Methodology	منهجية البحث	English	2	1					3	48	27	75	3.00	S			
						Total	12	4	12	0	0	0	18	438	312	750	30.00			
Summer Semester	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/s em	SS WL hr/s em	USS WL hr/se m	SWL hr/s em	EC TS	Module Type	Prerequisite Module(s) Code	
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)								
Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/s em	SS WL hr/s em	USS WL hr/se m	SWL hr/s em	EC TS	Module Type	Prerequisite Module(s) Code	
Seven	1	GEO-47031	Geological Field	العمل الحقلية	English	2		2				1	3	78	72	150	6.00	C		
	2	GEO-47032	Engineering Geology	الجيولوجيا الهندسية .	English	2		2				1	3	78	47	125	5.00	C		
	3	GEO-47033	Petroleum Geology	جيولوجيا النفط .	English	2		2				1	3	78	72	150	6.00	C		
	4	GEO-47134	Ore Geology	جيولوجيا الخامات .	English	2		2				1	3	78	47	125	5.00	C	GEO-35022	
	5	GEO-47035	Environmental Geology	الجيولوجيا البيئية .	English	2		2				1	3	78	47	125	5.00	C		
	6	GEO-47036	Computer Application in Earth science	تطبيقات الحاسوب في علوم الأرض	English	2						1	3	48	27	75	3.00	S		
						Total	12	0	10	0	0	6	18	438	312	750	30.00			
UGIV	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/s em	SS WL hr/s em	USS WL hr/se m	SWL hr/s em	EC TS	Module Type	Prerequisite Module(s) Code	
	Eight	1	GEO-48037	Hydrogeology	الهيدروجيولوجي	English	2		2				1	3	78	47	125	5.00	C	
		2	GEO-48138	Well logging	جس آبار	English	2		2				1	3	78	47	125	5.00	C	GEO-47033
		3	GEO-48039	Exploration geochemistry	استكشاف جيوكيميائي	English	2		2				1	3	78	72	150	6.00	C	
		4	GEO-48040	Geology of Industrial Rocks	جيولوجيا الصخور الصناعية .	English	2		2				1	3	78	72	150	6.00	C	
		5	GEO-48041	Seismic and Electrical methods	الطريقة الزلزالية والكهربائية	English	2		2				1	3	78	47	125	5.00	C	
		6	GEO-48042	Research Project	مشروع بحث	English	2						1	3	48	27	75	3.00	C	
						Total	12	0	10	0	0	6	18	438	312	750	30.00			

		16.0	90.0	0.0	7.0	12.0	156.0	3485.0	2515.0	6000.0	240.0	Must be 240 ECTS
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Note: The student should complete 4 weeks of Summer Internships to fulfill the requirements of the Bachelor's degree

Structured SWL (hr/w) type	CL	Class Lecture	Module type	B	Basic learning activities	SWL:	Student Workload					
	Lab	Laboratory		C	Core learning activity	SSWL:	Structured SWL					
	Pr	Practical Training		S	Support or related learning activity	USSWL:	Unstructured SWL					
	Tut	Tutorial		E	Elective learning activity							
	Lect	Online lecture										
	Semn	Seminar										
Note: Columns O, Q and R are programmed, protected and should not be edited												

8.Expected learning outcomes of the program
Knowledge
Enable the student to gain an understanding of the Geology subject. 2. Preparing scientific cadres specialized in Geology and all its branches to support the country's industrial and research movement through their work in scientific, practical and research institutions that support this trend.
Skills
1-Theoretical education skills 2. Practical education and data analysis skills
thinking skills 1- Discussions 2.Feedback 3- The ability to work in a multidisciplinary team 4-The ability to communicate constructively .
Values
Understand the ethical and professional responsibilities and recognize the economic, environmental, societal and global consequences of technical and scientific solutions for geological and environmental problems. The ability to communicate effectively and work as a team.

9. Teaching and learning strategies
Lectures, scientific experiments, homework and scientific discussions

10. Evaluation methods
Exams, daily assignments, discussions, laboratory reports, and a graduation project

11- Faculty staff

Department	Master	PhD	Total	Prof.	Ast. Professor	Lecturer	Ast. Lecturer	Total
Earth Science	17	27	44	4	13	19	9	44
Total	17	27	44	4	13	19	9	44

Professional development

Orienting new faculty members

Working to improve the academic and research capabilities and skills of faculty members through:

1. Guiding them to participate in teaching methods courses.
2. Holding training workshops, scientific meetings, and dialogue sessions.
3. Educating them on modern teaching methods.
4. Spreading a culture of continuous development and improvement to reach the best level of academic and professional performance.
5. Providing individual and group guidance programs for faculty members to overcome the difficulties that plague their professional lives

Professional development for faculty members

1. Developing faculty members' skills in academic, research and creative fields.
2. Supporting university faculty members in their educational, research and creative tasks.
3. Providing and developing diverse resources that contribute to achieving the above two goals.
4. Providing the appropriate professional environment for the creativity of the faculty member.
5. Supporting the faculty member's tasks in the field of community service.

Creating and developing information bases and resources related to faculty members.

12. Acceptance criterion

Central Admission

13. The most important sources of information about the program
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Program development through

- Higher directives
- What new sciences are developed in the field of specialization

14. Program development plan

- Teamwork: Working within the group effectively and actively.
- Time management: Managing time effectively and setting priorities with the ability to work organized by appointments.
- Preparing scientific research and reports to analyze and criticize events.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic learning activities Core learning activity	Knowledge				Skills				Ethics			
				A1	A 2	A 3	A 4	B 1	B 2	B 3	B 4	C 1	C 2	C 3	C 4
Semester 1	GEO-1101	General Geology I	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-1102	Crystallography	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-1103	Chemistry	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Sci-1105	Mathematic	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	UOM-104	Democracy & Human Right	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	UOM-101	Arabic Language	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semester 2	GEO-1214	General Geology II	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-1205	Mineralogy	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-1206	Physics	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-1207	Statistics	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	UOM-103	Computer	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	UOM-102	English Language	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semester 3	GEO-2318	Optical Mineralogy	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-2309	Paleontology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-23010	Sedimentology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	UOM- 205	Crimes of the defunct Baath Party	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-23011	Petrology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-23012	Geomorphology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semester 4	GEO-23013	Igneous Petrology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-24014	Micropaleontology I	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-24015	Sedimentary Petrology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-24016	Metamorphic Petrology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-24117	Invertebrates Paleontology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-24018	Remote Sensing	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semester 5	GEO-24019	Structural Geology I	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-35020	Geotectonic	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	GEO-35021	Gravity and Magnetic methods	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-35022	Geochemistry	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-35023	Stratigraphy	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-35124	Micropaleontology II	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semester 6	GEO-35125	Structural Geology II	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-36026	Field Geology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-36027	Basin analysis and Sequence Stratigraphy	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-36028	Sedimentary environments	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-36029	Geology of Iraq	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-36030	Methodology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semester 7	GEO-36031	Geological Field	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-47032	Engineering Geology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-47033	Petroleum Geology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-47134	Ore Geology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-47035	Environmental Geology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-47036	Computer Application in Earth science	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semester 8	GEO-48037	Hydrogeology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-48138	Well logging	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-48039	Exploration geochemistry	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-48040	Geology of Industrial Rocks	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-48041	Seismic and Electrical methods	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GEO-48042	Research Project	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Course descriptions are in Appendix IV and the Bologna Appendices.