Academic Program and Course Description Guide

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .....Tikrit.....

Faculty/Institute: .....Science.....

Scientific Department: .....Geology.....

Academic or Professional Program Name: .B.Sc. ..Geology.....

Final Certificate Name: .... B.Sc. ..Geology.....

Academic System: ...Semesters.....

Description Preparation Date: 5/10/2025

File Completion Date: 0/1412025/

Signature:

Head of Department Name:

Dr. Faris Nejris Hassan

Date: 14/10/2025

Signature:

Scientific Associate Name:

Dr. Firas Faris Rajaa

Date: 14/10/2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 14/10/2025

Signature:

Approval of the Dean

1. Program Vision

The College of Science seeks to be one of the leading higher education institutions at Tikrit University in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving the community in the fields of education.

2. Program Mission

Working to prepare and graduate pioneering scientific and leadership competencies in the sciences and in developing the knowledge base in the field of scientific research to serve the local, regional and international community, in addition to training and refining the minds of students scientifically and cognitively.

3. Program Objectives

1.This curriculum covers the basics of studying the geological formations of the Quaternary period, based on the sedimentary conditions that led to their emergence and formation, and thus studying the sedimentary changes and their presence under physical and chemical weathering conditions.

2. Preparing a group specialized in the field of the Quaternary period

4. Program Accreditation

No

5. Other external influences

No

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	90	90		Major decided
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	Found			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
2023-2025/Fourth	Geo323	Quaternary era		

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	1. This course covers the basics of the Quaternary period. 2. Identify the Quaternary sediments. 3. Use field trips to identify the nature of Pleistocene sediments. 4 Identify the Ice Age and the secondary ice ages. 5 Explain the Quaternary ice age sediments spread in Iraq. 6. Climate changes and their impact on the Quaternary period..
Skills	
Learning Outcomes 2	1.Enabling the student to be able to understand the deposits of the Quaternary period. 2. The student understands the Quaternary period and the emergence of ice ages. 3. Provides information about the Quaternary period in Iraq. -

Learning Outcomes 3	Understands the nature of the deposits of the period and climate changes.
Ethics	
Learning Outcomes 4	Developing students' abilities to understand the subject and developing their scientific abilities in studying the Quaternary period
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

1.Enable the student to identify advanced methods and concepts of the Quaternary period.

2- Identify climate changes and glacial changes regionally and locally in the Quaternary Pleistocene period.

3-Enable the student to collect information about the Quaternary period.

4-Understand the Quaternary sediments and their complexities.

5-Cover information for vast areas of Iraq and neighboring countries.

10. Evaluation methods

Weekly, monthly, daily and end of semester exams.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor Dr.	Geology				angel	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. **Acceptance Criterion**
(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. **The most important sources of information about the program**
1. Jassim, S.Z. and Buday, T., 2006 a: Tectonic framework. In: Jassim S.Z. and Goff, J.C., (eds.), Geology of Iraq, Dolin, Prague and Moravian Museum, Berno. PP. 124-140.
State briefly the sources of information about the program.

14. Program Development Plan
Including topics that are in line with modernity and the requirements of scientific and practical life, and what scientists have reached, on an ongoing basis.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2025/Third	Geo164	Quaternary era	Basic												

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Quaternary era
2. Course Code:
Geo164
3. Semester / Year:
First/First course
4. Description Preparation Date:
14/11/2025
5. Available Attendance Forms:
Attendance only
6. Number of Credit Hours (Total) / Number of Units (Total)
30 semester hours. 2 hours weekly
7. Course administrator's name (mention all, if more than one name)
Name: Assisst. Prof.Dr. Amaar Jamad Mohammed Email: geoamaar1977@tu.edu.iq
8. Course Objectives

Course Objectives	**The material is important to learn about Quaternary period, climate changes, Pleistocene Ice Age, the effects of melting flood events, and determining ages us radioactive isotopes and pollen. And to le about the impact of the changes that occur during the Quaternary period and the result and influential changes on the Earth's surfa volcanoes and earthquakes, affecting human learning about the development of humans mammals during this period and the changes occurred. And their distribution within t locations of spread and their horizontal vertical extensions and comparing them with t regional counterparts.**

9. Teaching and Learning Strategies

Strategy	1- Teaching strategy Collaborative concept planning. 2- Teaching strategy Brainstorming. 3- Teaching strategy Note series
10. Course Structure	

Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hours	Week
Daily Exam		Quaternary stratigraphy and climate change	The student -1 understands the Quaternary era in Iraq, fully understanding the nature of climate changes, ice ages, and events resulting from earthquakes and volcanoes. 2- Informing students about the importance of the Quaternary era and knowing the geological history of the Pleistocene and Holocene, tectonic movements and events, and glacial changes during ..geological ages	2	First
Daily Exam		Methods of using radioactive materials in the study of the Quaternary period, carbon, oxygen		2	Second
Daily Exam		Climate changes during the Quaternary period and their differences from previous periods		2	Third
Daily Exam		Climate changes during the Quaternary period and the modern period and their impact on the sea surface		2	Fourth
Daily Exam		Geology of the Quaternary period and the stratigraphic column and determining the contact		2	Fifth
Daily Exam		Ancient geography and ancient climate and periods similar to the Quaternary period		2	Sixth
Daily Exam		Tectonic instability during the Quaternary period and its impact on climatic conditions		2	Seventh
Daily Exam		Geological history of the Pleistocene and Holocene and determining the connection between them		2	Eighth
Daily Exam		Time divisions of the Pleistocene and the period of extremity		2	Ninth
Daily Exam		Land layers and seabeds and methods of modeling		2	Tenth

		them and their importance			
Monthly Exam		Measuring the age of rocks by carbon, oxygen and other radioactive elements		2	Eleventh
Daily Exam		Changes occurring in the ice and their effects on sea level		2	Twelfth
Daily Exam		Flood events and their effects in Iraq		2	Thirteenth
Daily Exam		Environmental hazards, floods, volcanoes and earthquakes		2	Fourteenth
Daily Exam		Exam (Theory and Lab.)		2	Fifteenth

11. Course Evaluation

Distribution as follows: 40 theoretical marks for monthly and daily exams, 10% practical marks for reports and an exam, total 50%. Final exam mark 50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Quaternary Geogeology, 2001, Prof. Than Khazal Al-Amiri, 321 pages
Main references (sources)	Jassim, S.Z. and Buday, T., 2006 a: Tectonic framework. In: Jassim S.Z. and Goff,J.C.,(eds.),Geology of Iraq,Dolin, Pra and Moravian Museum, Berno. PP. 124-140
Recommended books and references (scientific journals, reports...)	Quaternary Geology Books, Tikrit Journal of Pure Sciences. Virtual Electronic Library, Internet References
Electronic References, Websites	https:/Quaternary of Iraq.com /

10. بنية المقرر / المرحلة الرابعة / الكورس الثاني

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
الأول	3	فهم موضوع المحاضرة	العمليات الايضية للدهون , هضم وامتصاص ونقل الدهون مراحل هضم الدهون	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
الثاني	3	فهم موضوع المحاضرة	الامراض الناتجة عن اختلال في امتصاص الدهون وكيمياء البروتينات الدهنية والصحة , ارتفاع الدهون وامراض القلب	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
الثالث	3	فهم موضوع المحاضرة	المسارات التقويضية والبنائية للدهون , تقويض الاحماض الدهنية المراحل التفصيلية للمسارات	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
الرابع	3	فهم موضوع المحاضرة	تقويض الكليسريدات الثلاثية تنظيم العمليات التقويضية والعلاقة بين ايض اللبيدات والمسارات الأخرى	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
الخامس	3	فهم موضوع المحاضرة	امثلة لحساب الطاقة الناتجة في تقويض الاحماض الدهنية تقويض الدهون المفسفرة	شرح المادة وعرض على الشاشة	امتحان حضوري
السادس	3	فهم موضوع المحاضرة	ايض الكولسترول , بناء وهدم الكولسترول , بناء اجسام كيتون	شرح المادة وعرض على الشاشة	اسئلة شفهية
السابع	3	فهم موضوع المحاضرة	بناء الكليسريدات الثلاثية بناء الدهون الاسفنجية , بناء الاحماض الصفراء	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
الثامن	3	امتحان الشهر الأول	امتحان شهري	حضوري	امتحان حضوري
التاسع	3	فهم موضوع المحاضرة	ايض البروتينات والاحماض الامينية , تقويض البروتينات والاحماض الامينية	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
العاشر	3	فهم موضوع المحاضرة	انتقال الاحماض الامينية , انزيمات محللة للبروتينات في القناة المعدية المعوية	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
الحادي عشر	3	فهم موضوع المحاضرة	الفضلات النيتروجينية , تفاعلات إزالة ونقل المجاميع الامينية	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
الثاني عشر	3	فهم موضوع المحاضرة	تكوين اليوريا , دورة اليوريا , تفاعلات دورة اليوريا , تقويض السلسلة الكاربونية للأحماض الامينية	شرح المادة وعرض على الشاشة	امتحان حضوري تحريري او شفوي
الثالث عشر	3	فهم موضوع المحاضرة	سمية الامونيا , نيتروجين يوريا دورة الكلوكوز –الانين	شرح المادة وعرض على الشاشة	امتحان حضوري, تحريري او شفوي
الرابع عشر	3	فهم موضوع المحاضرة	تقويض الاحماض الامينية , البناء الحياتي للأحماض الامينية , تحويل الاحماض الامينية الى نواتج خاصة	شرح المادة وعرض على الشاشة	اسئلة شفوية
الخامس عشر	3	امتحان الشهر ال	امتحان شهري	حضوري	امتحان حضوري

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 Guide

2025

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Academic Program Description Form

University Name: .....Tikrit.....

Faculty/Institute: .....Science.....

Scientific Department: .....Geology.....

Academic or Professional Program Name: .B.Sc. ..Geology.....

Final Certificate Name: .... B.Sc. ..Geology.....

Academic System: ...Semesters.....

Description Preparation Date: 5/10/2025

File Completion Date: 0/1412025/

Signature:

Head of Department Name:

Dr. Faris Nejris Hassan

Date: 14/10/2025

Signature:

Scientific Associate Name:

Dr. Firas Faris Rajaa

Date: 14/10/2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 14/10/2025

Signature:

Approval of the Dean

1. **Program Vision**
The College of Science seeks to be one of the leading higher education institutions at Tikrit University in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving the community in the fields of education.

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Working to prepare and graduate pioneering scientific and leadership competencies in the sciences and in developing the knowledge base in the field of scientific research to serve the local, regional and international community, in addition to training and refining the minds of students scientifically and cognitively.

3. **Program Objectives**
1.This curriculum covers the basics of studying the geological formations of the Quaternary period, based on the sedimentary conditions that led to their emergence and formation, and thus studying the sedimentary changes and their presence under physical and chemical weathering conditions. 2. Preparing a group specialized in the field of the Quaternary period

4. **Program Accreditation**
No

5. **Other external influences**
No

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	90	90		Major decided
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	Found			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2025/Fourth	Geo323	Quaternary era	theoretical	practical

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	1. This course covers the basics of the Quaternary period. 2. Identify the Quaternary sediments. 3. Use field trips to identify the nature of Pleistocene sediments. 4 Identify the Ice Age and the secondary ice ages. 5 Explain the Quaternary ice age sediments spread in Iraq. 6. Climate changes and their impact on the Quaternary period..
Skills	
Learning Outcomes 2	1.Enabling the student to be able to understand the deposits of the Quaternary period. 2. The student understands the Quaternary period and the emergence of ice ages. 3. Provides information about the Quaternary period in Iraq. –

Learning Outcomes 3	Understands the nature of the deposits of the period and climate changes.
Ethics	
Learning Outcomes 4	Developing students' abilities to understand the subject and developing their scientific abilities in studying the Quaternary period
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

1.Enable the student to identify advanced methods and concepts of the Quaternary period.

2- Identify climate changes and glacial changes regionally and locally in the Quaternary Pleistocene period.

3-Enable the student to collect information about the Quaternary period.

4-Understand the Quaternary sediments and their complexities.

5-Cover information for vast areas of Iraq and neighboring countries.

10. Evaluation methods

Weekly, monthly, daily and end of semester exams.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor Dr.	Geology				angel	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. **Acceptance Criterion**
(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. **The most important sources of information about the program**
1. Jassim, S.Z. and Buday, T., 2006 a: Tectonic framework. In: Jassim S.Z. and Goff, J.C., (eds.), Geology of Iraq, Dolin, Prague and Moravian Museum, Berno. PP. 124-140.
State briefly the sources of information about the program.

14. Program Development Plan
Including topics that are in line with modernity and the requirements of scientific and practical life, and what scientists have reached, on an ongoing basis.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2025/Third	Geo164	Quaternary era	Basic												

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Quaternary era
2. Course Code:
Geo164
3. Semester / Year:
First/First course
4. Description Preparation Date:
14/11/2025
5. Available Attendance Forms:
Attendance only
6. Number of Credit Hours (Total) / Number of Units (Total)
30 semester hours. 2 hours weekly
7. Course administrator's name (mention all, if more than one name)
Name: Assisst. Prof.Dr. Amaar Jamad Mohammed Email: geoamaar1977@tu.edu.iq
8. Course Objectives

Course Objectives	The material is important to learn about Quaternary period, climate changes, Pleistocene Ice Age, the effects of melting flood events, and determining ages us radioactive isotopes and pollen. And to le about the impact of the changes that occur during the Quaternary period and the result and influential changes on the Earth's surfa volcanoes and earthquakes, affecting human learning about the development of humans mammals during this period and the changes occurred. And their distribution within t locations of spread and their horizontal vertical extensions and comparing them with t regional counterparts.

9. Teaching and Learning Strategies

Strategy	1- Teaching strategy Collaborative concept planning. 2- Teaching strategy Brainstorming. 3- Teaching strategy Note series
10. Course Structure	

Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hours	Week
Daily Exam		Quaternary stratigraphy and climate change	The student -1 understands the Quaternary era in Iraq, fully understanding the nature of climate changes, ice ages, and events resulting from earthquakes and volcanoes. 2- Informing students about the importance of the Quaternary era and knowing the geological history of the Pleistocene and Holocene, tectonic movements and events, and glacial changes during ..geological ages	2	First
Daily Exam		Methods of using radioactive materials in the study of the Quaternary period, carbon, oxygen		2	Second
Daily Exam		Climate changes during the Quaternary period and their differences from previous periods		2	Third
Daily Exam		Climate changes during the Quaternary period and the modern period and their impact on the sea surface		2	Fourth
Daily Exam		Geology of the Quaternary period and the stratigraphic column and determining the contact		2	Fifth
Daily Exam		Ancient geography and ancient climate and periods similar to the Quaternary period		2	Sixth
Daily Exam		Tectonic instability during the Quaternary period and its impact on climatic conditions		2	Seventh
Daily Exam		Geological history of the Pleistocene and Holocene and determining the connection between them		2	Eighth
Daily Exam		Time divisions of the Pleistocene and the period of extremity		2	Ninth
Daily Exam		Land layers and seabeds and methods of modeling		2	Tenth

		them and their importance			
Monthly Exam		Measuring the age of rocks by carbon, oxygen and other radioactive elements		2	Eleventh
Daily Exam		Changes occurring in the ice and their effects on sea level		2	Twelfth
Daily Exam		Flood events and their effects in Iraq		2	Thirteenth
Daily Exam		Environmental hazards, floods, volcanoes and earthquakes		2	Fourteenth
Daily Exam		Exam (Theory and Lab.)		2	Fifteenth

11. Course Evaluation

Distribution as follows: 40 theoretical marks for monthly and daily exams, 10% practical marks for reports and an exam, total 50%. Final exam mark 50%

12. Learning and Teaching Resources

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Main references (sources)	Jassim, S.Z. and Buday, T., 2006 a: Tectonic framework. In: Jassim S.Z. and Goff,J.C.,(eds.),Geology of Iraq,Dolin, Prag and Moravian Museum, Berno. PP. 124-140
Recommended books and references (scientific journals, reports...)	Quaternary Geology Books, Tikrit Journal of Pure Sciences. Virtual Electronic Library, Internet References
Electronic References, Websites	https:/Quaternary of Iraq.com /

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
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Academic Program and Course Description Guide

2026-2025

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Concepts and terminology:

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Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Academic Program Description Form

University Name: .....Tikrit.....

Faculty/Institute: .....Science.....

Scientific Department: .....Geology.....

Academic or Professional Program Name: .B.Sc. ..Geology.....

Final Certificate Name: .... B.Sc. ..Geology.....

Academic System: ...Semesters.....

Description Preparation Date: 5/10/2025

File Completion Date: 0/1412025/

Signature:

Head of Department Name:

Dr. Faris Nejris Hassan

Date: 14/10/2025

Signature:

Scientific Associate Name:

Dr. Firas Faris Rajaa

Date: 14/10/2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 14/10/2025

Signature:

Approval of the Dean

Approval of the Dean

1. Program Vision

To achieve excellence in teaching industrial rocks and minerals and prepare graduates capable of evaluating and utilizing industrial raw materials to support sustainable development.

2. Program Mission

To prepare and graduate qualified scientific and leadership competencies in the field of Applied Geology, enrich scientific knowledge, and meet the needs of the local, regional, and international labor market by offering advanced academic content.

3. Program Objectives

1. Introduce students to the concept of industrial rocks and minerals.
2. Classify different types of industrial rocks based on origin and usage.
3. Analyze the physical and chemical properties of industrial materials and link them to practical applications.
4. Understand extraction techniques and cost estimation in industrial production.
5. Highlight the role of industrial rocks in supporting national industries and the private sector.

4. Program Accreditation

No

5. Other external influences

Labor market needs, industrial sector requirements, environmental regulations, and recent developments in industrial rocks and minerals.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	90	90		Major decided
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	Found			
Other				

* This can include notes on whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2025/forth		Industrial Rocks	theoretical	

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	1. Introduce students to the concept of industrial rocks and minerals. 2. Classify different types of industrial rocks based on origin and usage. 3. Analyze industrial materials' physical and chemical properties and link them to practical applications. 4. Understand extraction techniques and cost estimation in industrial production.

	5. Highlight the role of industrial rocks in supporting national industries and the private sector.
Skills	
Learning Outcomes 2	• Evaluate the suitability of rocks for industrial purposes. • Estimate the reserves of industrial raw materials. • Propose low-cost, environmentally safe production methods.
Learning Outcomes 3	Developing students' ability to share ideas
Ethics	
Learning Outcomes 4	• Apply ethical standards in geological investigations. • Respect environmental regulations during extraction and exploitation. • Promote sustainable utilization of industrial raw materials.
Learning Outcomes 5	• Learning Outcomes Statement 5 • Demonstrate the ability to select suitable industrial rocks for specific industrial applications

9. Teaching and Learning Strategies

Lecture delivery method:

1. Lectures supported by PowerPoint, diagrams, and videos.
2. Group assignments and projects.
3. Field visits to Cement Plants.

10. Evaluation methods

Weekly, monthly, daily, and end-of-semester exams.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of teaching staff	
	General	Special			Staff	Lecturer
Professor Dr.	Geology	Industrial Rocks			√	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty, such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. The most important sources of information about the program

- **Main Textbook:**
  Kogel et al., Industrial Minerals and Rocks.
- *Evans, An Introduction to Economic Geology and Its Environmental Impact.*
- *Carr, Industrial Minerals and Their Uses.*
- *Harben & Kuzvart, Industrial Minerals.*

14. Program Development Plan
Including topics that align with modernity, the requirements of scientific and practical life, and what scientists have reached on an ongoing basis.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
-2025 2026/Forth	Geo	Industrial rocks21	Basic	√	√	√	√	√	√	√		√	√		

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Industrial Rocks
2. Course Code:
Geo 425
3. Semester / Year:
Fourth Year / First Course
4. Description Preparation Date:
14/11/2025
5. Available Attendance Forms:
Attendance only
6. Number of Credit Hours (Total) / Number of Units (Total)
60 semester hours. 4 hours weekly
7. Course administrator's name (mention all, if more than one name)
Name: Prof .Dr. Sawsan H Faisal Email: sawsanalhazaa@tu.edu.iq
8. Course Objectives

Course Objectives	• Establish the fundamental principles of petroleum geology. • Understand the geological processes responsible for petroleum generation and accumulation. • Qualify students to analyze reservoir and source rock characteristics. • Identify the types of oil traps and their geological settings. • Relate geological knowledge to Iraq's petroleum industry.

9. Teaching and Learning Strategies	
Strategy	- Lecture delivery method. - Student groups (Team Project). - Standard method. - Practical lectures.

10. Course Structure

.1

Evaluation method	Learning method	Unit or subject name	Week

	2	Introduction to Economic Geology – Definition and Scope of Industrial Rocks	First
	2	Classification of Industrial Rocks and Minerals	Second
	2	Environmental impact of mining and extraction	Third
	2	Properties and uses of igneous industrial rocks (granite and basalt)	Fourth
	2	Properties and uses of metamorphic rocks (marble and slate)	Fifth
	2	Industrial use of gravel and sand	Sixth
	2	Midterm exam and initial report discussion	Seventh
	2	Sandstone and glass sand – properties and applications	Eighth
	2	Limestone and dolomite – industrial and construction uses	Ninth
	2	Gypsum and phosphate – extraction and usage	Tenth
	2	Cement manufacturing – raw materials and types	Eleventh
	2	Manufacturing and evaluation of engineering bricks	Twelfth
	2	Discussion of reports and research projects	Thirteenth
	2	Introduction to underground storage as an industrial application	Fourteenth
	2	Final review and final theoretical exam	Fifteenth

11. Course Evaluation

Distribution as follows: 35 theoretical marks for monthly and daily exams, Assignments and presentations marks for reports and an exam, total 50%. Final exam mark 50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	nothing
Main references (sources)	• 2. *Industrial Minerals and Rocks* – Kogel et al., 2006 3. *An Introduction to Economic Geology and its Environmental Impact* – Evans, 2005

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	no

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 Guide

2025

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .....Tikrit.....

Faculty/Institute: .....Science.....

Scientific Department: .....Geology.....

Academic or Professional Program Name: .B.Sc. ..Geology.....

Final Certificate Name: .... B.Sc. ..Geology.....

Academic System: ...Semesters.....

Description Preparation Date: 5/10/2025

File Completion Date: 0/1412025/

Signature:

Head of Department Name:

Dr. Faris Nejris Hassan

Date: 14/10/2025

Signature:

Scientific Associate Name:

Dr. Firas Faris Rajaa

Date: 14/10/2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 14/10/2025

Signature:

Approval of the Dean

1. Program Vision

This academic program description provides a concise summary of the program's key features and the learning outcomes expected of the student, demonstrating whether the student has made the most of the opportunities available. It is accompanied by a description of each course within the program.

2. Program Mission

To prepare and graduate pioneering scientific and leadership competencies in geology and its sciences, and to develop the knowledge base in the field of scientific research to serve the local, regional, and international communities. Furthermore, to train and refine students' minds scientifically and intellectually, to emphasize social and cultural values, and to respond to local market requirements. Furthermore, to train students in investing in the Earth's resources and wealth, and employing them to develop the country's economy and advance its economic and investment landscape.

3. Program Objectives

Providing an overview of these two methods and their important role in geological surveying operations in general, as well as their use in various exploration operations.

4. Program Accreditation

Does the program have program accreditation? And from which agency?

Nothing.

5. Other external influences

Is there a sponsor for the program? Nothing.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	52	3.5		Basic course
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	nothing			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2025/ Fourth	Geo48146	Potential and Magnetic Methods	theoretical	practical
			2	3

8. Expected learning outcomes of the program

Knowledge	
A- Knowledge and Understanding: After studying this course, students will be able to identify the gravitational properties of geological formations, understand how they occur,	Learning Outcomes Statement 1

and use gravitational methods to explore geological formations, including their composition and determining their depth and dimensions. Magnetic methods are used in geological surveys. They help determine the dimensions of aquifers, determine the quality of groundwater, evaluate reservoir properties, and identify weak areas in the soil. B- Subject-Specific Skills: Developing students' analytical and applied skills, enhancing their deductive reasoning, and improving their ability to work with laboratory equipment are important objectives.	
Skills	
1- Thinking Skill According to the Student's Ability The goal of this skill is for the student to believe in concrete matters (the student's abilities), understand when, what, and how to think, and work to improve their ability to think rationally. 2- Higher Thinking Skill (The goal of this skill is to teach students to think carefully before making decisions that will shape their lives) 3- Critical Thinking Strategy in Learning (A term that refers to	Learning Outcomes Statement 2

the highest levels of thinking, which aims to pose a problem and then analyze it logically to arrive at the desired solution).	
Ethics	
Developing students' ability to share ideas	Learning Outcomes Statement 4

9. Teaching and Learning Strategies

Teaching and Learning Methods:

Lectures are delivered in a practical, real-world manner, engaging students in the course material without deviating from the core subject matter. The goal is to ensure that the material is presented within a practical application framework. In addition, students are assigned individual and group activities and assignments. Modern presentation tools, supported by graphics and illustrations, will be used.

Assessment Methods:

1- Participation Assessment: Assessing the extent of the student's participation in class discussions and their response to questions and challenges.

2- Contribution Assessment: Assessing the student's contribution to lectures and discussions by offering new ideas, providing relevant examples and experiences, and sharing additional readings or resources.

3- Creativity Assessment: Assessing the student's ability to creatively apply the concepts presented in the course and provide innovative solutions to challenges.

4- Collaboration Assessment: Assessing the student's collaboration with classmates in group work and their contribution to achieving the objectives of joint projects.

5. A variety of tools can be used to assess participation, such as participation reports, class discussion assessments, lecturer notes, and evaluations of group projects and activities. Assessment criteria should be made clear to students from the outset, and constructive feedback should be provided to promote continuous improvement.

6. Allocating a percentage of the grade to assignments, daily tests, monthly and final exams is a guide to assessing commitment and academic achievement.

10. Evaluation methods

Weekly, monthly, daily and final exams.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Doctor	Geology	Geophysics			Staff	

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion
(Setting regulations related to enrollment in the college or institute, whether central admission or others) Central Admission

13. The most important sources of information about the program
Principle of geophysical methods in geological exploration.
Applied Geophysics.

14. Program Development Plan
20% annually
Continuous inclusion of topics that are in line with modernity, the requirements of scientific and practical life, and the findings of scientists.

Program Skills Outline														
				Required program Learning outcomes										
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics		
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2025-2025	Geo48146	Potential and Magnetic Methods	Basic												

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Potential and Magnetic Methods
2. Course Code:
Geo48146
3. Semester / Year:
Semester
4. Description Preparation Date:
5/ 10/ 2025
5. Available Attendance Forms:
In-person only
6. Number of Credit Hours (Total) / Number of Units (Total)
125 semester hours. 2 hours per week of theory, 3 hours of practical work, an 50 hc
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Riyadh Muhawish Rashid Alazzawi Email: riyadhalazzawi@tu.edu.iq.
8. Course Objectives

Course Objectives	**Providing an overview of these two methods and their imp rtant ro**

9. Teaching and Learning Strategies

Strategy	Teaching and Learning Methods: Lectures are delivered in a practical, real-world manner, engaging stude students are assigned individual and group activities and assignme nts. M Assessment Methods: 1- Participation Assessment: Assessing the extent of the student's p artici 2- Contribution Assessment: Assessing the student's contribution t o lectu 3- Creativity Assessment: Assessing the student's ability to creativ ly app 4- Collaboration Assessment: Assessing the student's collaboration with

	5. A variety of tools can be used to assess participation, such as pa ticipa constructive feedback should be provided to promote continuous i nprov 6. Allocating a percentage of the grade to assignments, daily tests, monthl

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name
1	2+3	roviding stude	Introduction to the Gravitational Method and the Role of Scientists in its Development an History.
2	2+3	ith the skill of	Gravitational Force and Attraction
3	2+3	nalyzing and	The Universal Law of Gravitation and its Assumptions
4	2+3	nterpreting gra	Changes in the Values of Gravity
5	2+3	nd magnetic da	Gravity Measurements and Their Types
6	2+3	n explorations.	Devices for Gravity Measurement
7	2+3		Field Procedures in Gravity Measurement
8	2+3		Local Anomaly, Regional Anomaly, Interpretation of Gravity Anomalies, and Correction of Gravity
9	2+3		Introduction to the Magnetic Method and Its Applications
10	2+3		Principles and Basic Concepts of the Magnetic Method
11	2+3		Sources of Magnetic Force and Their Devices
12	2+3		Magnetic Variations with Time and Their Corrections
13	2+3		Interpretation of Magnetic Anomalies
14	2+3		Calculation of Depth and Dimensions to the Metallic Body
15	2+3		Types of Interpretations

11. Course Evaluation

Distribution as follows: 35 marks for monthly and daily semester exams. 15 marks for practical ex ms anc

12. Learning and Teaching Resources

Required textbooks (curric books, if any)	1- Principle of geophysical methods in geological exploration
Main references (sources)	2- Applied Geophysics
Recommended books and references (scientific journals, reports...)	
Electronic References, Website	https://alamrigeo.com/input/docs/books/%D8%A7%D9%84 %D9%8A%D8%A9.pdf

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 Guide

2026-2025

Introduction:

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This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

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Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

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Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .Tikrit

Faculty/Institute: .College of Sciences.

Scientific Department: Applied Geology.

Academic or Professional Program Name: Industrial Rocks

Final Certificate Name: Geology

Academic System: First course

Description Preparation Date: 5/10/2024

File Completion Date: 14/11/2025

Signature:

Head of Department Name:

Fares Nigres Hassen

Date: 2025/11/14

Signature:

Scientific Associate Name:

Date:14/11/2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 14/11/2025

Signature:

Approval of the Dean

1. Program Vision

To achieve excellence in teaching industrial rocks and minerals and prepare graduates capable of evaluating and utilizing industrial raw materials to support sustainable development.

2. Program Mission

To prepare and graduate qualified scientific and leadership competencies in the field of Applied Geology, enrich scientific knowledge, and meet the needs of the local, regional, and international labor market by offering advanced academic content.

3. Program Objectives

1. Introduce students to the concept of industrial rocks and minerals.
2. Classify different types of industrial rocks based on origin and usage.
3. Analyze the physical and chemical properties of industrial materials and link them to practical applications.
4. Understand extraction techniques and cost estimation in industrial production.
5. Highlight the role of industrial rocks in supporting national industries and the private sector.

4. Program Accreditation

No

5. Other external influences

Labor market needs, industrial sector requirements, environmental regulations, and recent developments in industrial rocks and minerals.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	90	90		Major decided
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	Found			
Other				

* This can include notes on whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/forth		Industrial Rocks	theoretical	

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	1. Introduce students to the concept of industrial rocks and minerals. 2. Classify different types of industrial rocks based on origin and usage. 3. Analyze industrial materials' physical and chemical properties and link them to practical applications. 4. Understand extraction techniques and cost estimation in industrial production. 5. Highlight the role of industrial rocks in supporting national industries and the private sector.
Skills	
Learning Outcomes 2	• Evaluate the suitability of rocks for industrial purposes.

	• Estimate the reserves of industrial raw materials. • Propose low-cost, environmentally safe production methods.
Learning Outcomes 3	Developing students' ability to share ideas
Ethics	
Learning Outcomes 4	• Apply ethical standards in geological investigations. • Respect environmental regulations during extraction and exploitation. • Promote sustainable utilization of industrial raw materials.
Learning Outcomes 5	• Learning Outcomes Statement 5 • Demonstrate the ability to select suitable industrial rocks for specific industrial applications

9. Teaching and Learning Strategies

Lecture delivery method:

1. Lectures supported by PowerPoint, diagrams, and videos.
2. Group assignments and projects.
3. Field visits to Cement Plants.

10. Evaluation methods

Weekly, monthly, daily, and end-of-semester exams.

11. Faculty

Faculty Members

Academic Rank	Specialization	Special Requirements/Skills (if applicable)	Number of teaching staff

	General	Special			Staff	Lecturer
Professor Dr.	Geology	Industrial Rocks			√	

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty, such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. The most important sources of information about the program

- **Main Textbook:**
  Kogel et al., Industrial Minerals and Rocks.
- *Evans, An Introduction to Economic Geology and Its Environmental Impact.*
- *Carr, Industrial Minerals and Their Uses.*
- *Harben & Kuzvart, Industrial Minerals.*

14. Program Development Plan

Including topics that align with modernity, the requirements of scientific and practical life, and what scientists have reached on an ongoing basis.

Program Skills Outline														
				Required program Learning outcomes										
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics		
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
-2025 2026/Forth	Geo	Industrial rocks21	Basic	√	√	√	√	√	√	√		√	√		

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:

Industrial Rocks

2. Course Code:

Geo 425

3. Semester / Year:

Fourth Year / First Course

4. Description Preparation Date:

14/11/2025

5. Available Attendance Forms:

Attendance only

6. Number of Credit Hours (Total) / Number of Units (Total)

60 semester hours. 4 hours weekly

7. Course administrator's name (mention all, if more than one name)

Name: Prof .Dr. Sawsan H Faisal

Email: sawsanalhazaa@tu.edu.iq

8. Course Objectives

Course Objectives	• Establish the fundamental principles of petroleum geology. • Understand the geological processes responsible for petroleum generation and accumulation. • Qualify students to analyze reservoir and source rock characteristics. • Identify the types of oil traps and their geological settings. • Relate geological knowledge to Iraq's petroleum industry.

9. Teaching and Learning Strategies

Strategy	- Lecture delivery method. - Student groups (Team Project). - Standard method. - Practical lectures.

10. Course Structure

.1

Evaluation method	Learning method	Unit or subject name	Week

	2	Introduction to Economic Geology – Definition and Scope of Industrial Rocks	First
	2	Classification of Industrial Rocks and Minerals	Second
	2	Environmental impact of mining and extraction	Third
	2	Properties and uses of igneous industrial rocks (granite and basalt)	Fourth
	2	Properties and uses of metamorphic rocks (marble and slate)	Fifth
	2	Industrial use of gravel and sand	Sixth
	2	Midterm exam and initial report discussion	Seventh
	2	Sandstone and glass sand – properties and applications	Eighth
	2	Limestone and dolomite – industrial and construction uses	Ninth
	2	Gypsum and phosphate – extraction and usage	Tenth
	2	Cement manufacturing – raw materials and types	Eleventh
	2	Manufacturing and evaluation of engineering bricks	Twelfth
	2	Discussion of reports and research projects	Thirteenth
	2	Introduction to underground storage as an industrial application	Fourteenth
	2	Final review and final theoretical exam	Fifteenth

11. Course Evaluation

Distribution as follows: 35 theoretical marks for monthly and daily exams, Assignments and presentations marks for reports and an exam, total 50%. Final exam mark 50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	nothing
Main references (sources)	• 2. *Industrial Minerals and Rocks* – Kogel et al., 2006 3. *An Introduction to Economic Geology and its Environmental Impact* – Evans, 2005

Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	no

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

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2026-2025

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .Tikrit

Faculty/Institute: .College of Sciences.

Scientific Department: Applied of Geology.

Academic or Professional Program Name: Petroleum Geology

Final Certificate Name: Geology

Academic System: First course

Description Preparation Date: 5/10/2025

File Completion Date: 14/11/2025

Signature:

Head of Department Name:

Fares Nigres Hassan

Date: 14/11/2025

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 14/11/2025

Signature:

Approval of the Dean

1. Program Vision

The College of Science aims to be one of the leading institutions in higher education at Tikrit University through modern teaching, scientific research, and community service, empowering students and faculty to be creative and effective in their fields.

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2. Program Mission

To prepare and graduate qualified scientific and leadership competencies in the field of Applied Geology, enrich scientific knowledge, and meet the needs of the local, regional, and international labor market by offering advanced academic content.

3. Program Objectives

- Establish the fundamental principles of petroleum geology.
- Understand the geological processes responsible for petroleum generation and accumulation.
- Qualify students to analyze reservoir and source rock characteristics.
- Identify the types of oil traps and their geological settings.
- Relate geological knowledge to Iraq's petroleum industry.

4. Program Accreditation

No

5. Other external influences

Oil industry requirements, developments in petroleum exploration and production technologies, environmental regulations, labor market needs, and advances in subsurface geological studies.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	90	90		Major decided
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	Found			
Other				

* This can include notes on whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2025-2026/forth		Petroleum Geology	theoretical	Practical

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	1. Understand petroleum origin, generation, maturation, migration, and trapping. 2. Identify geological characteristics of the reservoir and source rocks. 3. Evaluate petroleum traps and oil field structures. 4. Recognize the significance of oil fields in Iraq's economy.
Skills	
Learning Outcomes 2	1. 1 Analyze subsurface geological maps and structures. 2. Evaluate reservoir sedimentary environments.

	3. Calculate oil reserves using standard methods. 4. Distinguish migration types and evidence of hydrocarbons.
Learning Outcomes 3	Developing students' ability to share ideas
Ethics	
Learning Outcomes 4	• Develop critical thinking and analytical reasoning. • Promote collaboration and team-based problem solving. • Emphasize scientific integrity and environmental awareness.
Learning Outcomes 5	Demonstrate the ability to integrate geological data for petroleum exploration and reservoir evaluation

9. Teaching and Learning Strategies

Lecture delivery method:

1. Lectures supported by PowerPoint, diagrams, and videos.
2. Group assignments and projects.
3. Practical lab exercises with maps and models.
4. Field visits to oil-related locations and institutions.

10. Evaluation methods

Weekly, monthly, daily, and end-of-semester exams.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)	Number of teaching staff	
	General	Special		Staff	Lecturer

Professor Dr.	Geology	Petroleum Geology			√	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty, such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

Central admission according to the regulations of the Ministry of Higher Education and Scientific Research.

13. The most important sources of information about the program

- **Main Textbook:**
  Elements of Petroleum Geology by Richard C. Selley
- **Recommended References:**
  Petroleum Geology: A Concise Study by R.E. Chapman
  Petroleum by V. Sokolov

14. Program Development Plan

Updating course contents annually to include modern petroleum exploration techniques, basin analysis, reservoir characterization, digital petroleum systems, GIS applications, and artificial intelligence tools in petroleum geology.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
-2025 2026/Forth	Geo	Petroleum Geology	Basic	√	√	√	√	√	√	√	√	√	√	√	

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Petroleum Geology
2. Course Code:
Geo
3. Semester / Year:
Fourth Year / First Course
4. Description Preparation Date:
14/11/2025
5. Available Attendance Forms:
Attendance only
6. Number of Credit Hours (Total) / Number of Units (Total)
60 semester hours. 4 hours weekly
7. Course administrator's name (mention all, if more than one name)
Name: Prof .Dr. Sawsan H Faisal Email: sawsanalhazaa@tu.edu.iq
8. Course Objectives

Course Objectives	• Establish the fundamental principles of petroleum geology. • Understand the geological processes responsible for petroleum generation and accumulation. • Qualify students to analyze reservoir and source rock characteristics. • Identify the types of oil traps and their geological settings. • Relate geological knowledge to Iraq's petroleum industry.
9. Teaching and Learning Strategies	
Strategy	- Lecture delivery method. - Student groups (Team Project). - Standard method. - Practical lectures.

10. Course Structure

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Evaluation method	Learning method	Unit or subject name	Week

2	2	Introduction to petroleum geology and origin theories	First
2	2	2 Maturation of organic matter	Second
2	2	3 Reservoir water characteristics	Third
2	2	4 Reservoir content (oil and gas)	Fourth
2	2	5 Physical and chemical properties of crude oil	Fifth
2	2	6 Reservoir rock characteristics	Sixth
2	2	7 Midterm exam	Seventh
2	2	8 Source rocks	Eighth
2	2	9 Types and evidence of oil migration	Ninth
2	2	10 Causes of migration	Tenth
2	2	11 Reservoir evaluation	Eleventh
2	2	12 Oil traps	Twelfth
2	2	13 Oil fields of southern Iraq	Thirteenth
2	2	14 Oil fields of central Iraq	Fourteenth
2	2	15 Oil fields of northern Iraq	Fifteenth

11. Course Evaluation

Distribution as follows: 35 theoretical marks for monthly and daily exams, 15% practical marks for reports and an exam, total 50%. Final exam mark 50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Petroleum Geology Book in Arabic
Main references (sources)	• **n Textbook:** *Elements of Petroleum Geology* by Richard C. Selley • **Recommended References:** *Petroleum Geology: A Concise Study* by R.E. Chapman *Petroleum* by V. Sokolov

Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	