Form: Course Syllabus		
	Form Number	EXC-01-02-02A
	Issue Number and Date	2/3/24/2022/2963 05/12/2022
	Number and Date of Revision or Modification	2023/10/15
	Deans Council Approval Decision Number	265/2024/24/3/2
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	Number of Pages	07

1.	**Course Title**	**Advanced Sedimentary Rocks**
2.	**Course Number**	0305932
3.	**Credit Hours (Theory, Practical)**	3, theory
	Contact Hours (Theory, Practical)	3, theory
4.	**Prerequisites/Corequisites**	-
5.	**Program Title**	PH.D in Geology
6.	**Program Code**	-
7.	**School/ Center**	School of Science
8.	**Department**	Geology
9.	**Course Level**	PH D program
10.	**Year of Study and Semester (s)**	-
11.	**Other Department(s) Involved in Teaching the Course**	-
12.	**Main Learning Language**	English
13.	**Learning Types**	Face to face learning √Blended ☐Fully online
14.	**Online Platforms(s)**	✔ Moodle ✔ Microsoft Teams
15.	**Issuing Date**	2/05/2025
16.	**Revision Date**	

17. Course Coordinator:

Name:Dr . Bety Al-Saqarat

Office number:Geology 204Phone number:

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18. Other Instructors:

Name:
Office number:
Phone number:
Email:
Contact hours:
Name:
Office number:
Phone number:
Email:
Contact hours:

19. Course Description:

This course offers an in-depth study of sedimentary rocks, their formation, textures, structures, classifications, and diagenetic processes. It emphasizes depositional environments and basin analysis with a focus on examples from Jordan and the Middle East. Advanced techniques in sedimentary petrography, geochemistry, and reservoir analysis will be applied in field and lab settings.

20.ProgramStudent Outcomes (SO's):(To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

(SO1)Students will be able to design and execute original research, employing advanced methodologies to generate new knowledge in their specialized area of geology

(SO2)Students will display the potential to seriously evaluate complex geological problems, the usage of analytical and problem-fixing capabilities to develop modern answers and interpretations of their studies.

(SO3)Students will benefit know-how in using cutting-edge gear, techniques, and technology applicable to their geological research, applying these abilities to research and cope with complicated geological phenomena.

(SO4)Students will effectively communicate their studies findings via academic guides, presentations, and conferences, making significant contributions to the scientific network and attractive technical and non-technical audiences.

(SO5)Students will showcase a sturdy dedication to ethical studies practices and apprehend the broader societal and environmental affects of their work, promoting sustainability and integrity within the subject.

(SO6)Students will demonstrate a determination to persistent mastering, actively enticing with rising studies, and professional improvement possibilities to maintain and amplify their know-how throughout their careers.

PILO's	*National Qualifications Framework Descriptors*		
	Competency (C)	Skills (B)	Knowledge (A)
1.	✔	✔	✔
2.	✔	✔	✔
3.		✔	✔
4.		✔	✔
5.	✔		✔
6.	✔		✔

21. Course Intended Learning Outcomes (CLO's): (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

- **CLO1**: Identify and classify sedimentary rocks using advanced techniques.
- **CLO2**: Interpret depositional environments from sedimentological data.
- **CLO3**: Analyze diagenetic processes and their implications for porosity and permeability.
- **CLO4**: Integrate petrographic, field, and geochemical data in basin analysis.
- **CLO5**: Apply sedimentary geology knowledge to hydrocarbon exploration and paleoenvironmental studies.
- **CLO6**: Evaluate regional and global case studies, especially from Jordan and the Middle East

Course CLOs	The learning levels to be achieved					
	Remembering	**Understanding**	**Applying**	**Analysing**	**evaluating**	**Creating**
CLO (1)	✔					
CLO (2)		✔				
CLO (3)			✔			
CLO (4)			✔			
CLO (5)			✔			
CLO (6)					✔	✔

22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:

Program SO's / Course CLO's	SO (1)	SO (2)	SO (3)	SO (4)	SO (5)	SO (6)	Descriptors		
							A	**B**	**C**
CLO (1)	✔		✔				✔	✔	
CLO (2)		✔	✔				✔	✔	
CLO (3)		✔	✔				✔	✔	
CLO (4)		✔	✔	✔			✔	✔	
CLO (5)		✔			✔		✔	✔	✔
CLO (6)		✔			✔	✔	✔		✔

23. Topic Outline and Schedule:

Week	Lecture	Topic	CLO/sLinked to the Topic	Learning Types (Face to Face/Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1		Introduction to Sedimentary Rock Systems and Significance	1	Face to Face	MOODLE		-	Selected reading
2	2	Clastic Rock Classification and Composition	1	Face to Face			Assignments	Textbook
3	2	Diagenesis in Clastic and Carbonate Rocks	1	Face to Face			Assignments	Selected reading
4	2	Sedimentary Structures and Their Interpretation	1, 2	Face to Face			Quiz	Papers
5	2	Carbonate Rocks: Classification and Depositional Environments	2	Face to Face			Assignments	Textbook
6	2	Evaporites and Other Chemical Sedimentary Rocks	2, 3	Face to Face			Assignments	Textbook
7	2	Midterm Exam	-	Face to Face			Exam	Papers
8	2	Sedimentary	2, 4	Face to Face			Assignments	-
9	2	Sequence Stratigraphy and Basin Fill Architecture	2, 4	Face to Face			Assignments	Selected reading
10	2	Basin Analysis and Tectonic Settings	4	Face to Face			Assignments	Papers
11	2	Provenance Studies and Heavy Mineral Analysis	4, 5	Face to Face			Assignments	Textbook
12	2	Applications in Petroleum Geology	5	Face to Face			Quiz	Selected reading
13	2	Applications in Environmental and Hydrogeological Studies	5	Face to Face			Discussion	All

14	2	Case Studies from Jordan (e.g., Azraq Basin, Wadi Sir Formation, etc.)	6	Face to Face			Presentation/ Final Exams	
15	2	Research Presentations and Review	-	Face to Face				

24. Evaluation Methods:

Opportunities to demonstrate achievement of theCLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	CLO/s Linked to the Evaluation activity	Period (Week)	Platform
Midterm Exam	20%	1-7	1,2,3	1-3	Face to Face
Project and presentation	30%	Weekly	All	1-5	Moodle
Final Exam	30%	8-14	All	3-6	Face to Face
Assignments & Participation	20%				Face to Face

25. Course Requirements:

students should have a computer, internet connection, account on a specific software/platform…(elearning)

26. Course Policies:

A- Attendance policies: following the school regulations.

B- Absences from exams and submitting assignments on time: following the school regulations.

C- Health and safety procedures: following the school regulations.

D- Honesty policy regarding cheating, plagiarism, misbehavior: following the school regulations.

E- Grading policy: following the school regulations.

F- Available university services that support achievement in the course: NA.

27. References:

Textbooks:

- Boggs, S. (2012). *Principles of Sedimentology and Stratigraphy*. Pearson.
- Nichols, G. (2009). *Sedimentology and Stratigraphy*. Wiley-Blackwell.
- Tucker, M. E. (2001). *Sedimentary Petrology*. Blackwell.

Additional References:

- Scientific journal articles relevant to sedimentary geology in Jordan.
- Research reports and case studies from local geological surveys.

28. Additional information:

	Signature:	Date:
Name of the Instructor or the Course Coordinator: **Dr. Bety Saqarat**	……...……	**2/05/2025**……
Name of the Head of Quality Assurance Committee/ Department	Signature:	Date:
	……...……	……..……
Name of the Head of Department **Dr Bety Saqarat**	Signature: ……...……	Date: ……..……
Name of the Head of Quality Assurance Committee/ School ofScience	Signature:	Date:
Prof. Emad A. Abuosba	……...……	……..……
Name of the Dean or the Director **Prof. Mahmoud I. Jaghoub**	Signature: ……...……	Date: ……..……