Form: Course Syllabus		
	Form Number	EXC-01-02-02A
	Issue Number and Date	2/3/24/2022/2963 05/12/2022
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	Number of Pages	06

1.	**Course Title**	Sequence Stratigraphy
2.	**Course Number**	0305934
3.	**Credit Hours(Theory, Practical)**	3
	Contact Hours (Theory, Practical)	3 hours theoretical
4.	**Prerequisites/Corequisites**	Sedimentary rocks 0305932
5.	**Program Title**	PhD. In Geology
6.	**Program Code**	0305
7.	**School/ Center**	Science
8.	**Department**	Geology
9.	**Course Level**	
10.	**Year of Study and Semester (s)**	
11.	**Other Department(s) Involved in Teaching the Course**	None
12.	**Main Learning Language**	English
13.	**Learning Types**	X ☐Face to face learning☐Blended ☐Fully online
14.	**Online Platforms(s)**	☐Moodle ☐Microsoft Teams
15.	**Issuing Date**	24/11/2024
16.	**Revision Date**	

17. Course Coordinator:

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18. Other Instructors:

None

19. Course Description:

Interrelationships between sea-level changes, sediment supply and accommodation volume, cyclicity in sedimentary rocks, systems tracts, recognition and interpretation of systems tracts of the sedimentary sequence in the outcrops, cores and well logs, interpreting the seismic stratigraphy lines to produce the systems tracts and sequence cycles for a basin, studying examples from fluvial, shallow marine, deep marine, and carbonate sedimentary environments, basin evolution and oil exploration. Visiting exposed stratigraphic sites trying to apply the above topics practically. Under the student's activity section, each student should chose published scientific paper related to one of the topics above (from Jordan if possible) for analyzing and criticization.

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)

1. Students may be capable of layout and execute unique studies studies, employing advanced methodologies to generate new understanding in their specialized region of geology.
2. 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.
3. 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.
4. 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.

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

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

1. Gain an understanding of sequence stratigraphic principles, controls and concepts.
2. Recognize sequence stratigraphic surfaces, systems tracts and stratigraphic sequences on well-log cross-sections, seismic lines, and outcrop profiles and depositional facies.
3. Construct a sequence stratigraphic model by integrating lithological, biostratigraphical, seismic and well data based in deferent depositional environments.
4. Apply sequence stratigraphy effectively for facies predictions in oil exploration and production and basin modeling.

Course CLOs	The learning levels to be achieved					
	Remembering	**Understanding**	**Applying**	**Analysing**	**evaluating**	**Creating**
1		**X**	**X**	**X**		
2		**X**	**X**	**X**	**X**	
3			**X**	**X**	**X**	**X**
4			**X**	**X**	**X**	**X**

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)	✔	✔	✔	✔			X	X	
CLO (2)	✔	✔	✔	✔			X	X	
CLO (3)	✔	✔	✔	✔			X	X	
CLO (4)	✔	✔	✔	✔			X	X	X

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	1.1	Introduction-Historical Perspective - What is sequence stratigraphy - The evolution of sequence stratigraphy	1	Face to face			Problem set	D. Emery and K. Myers, 1998
	1.2							
	1.3							
2	2.1	Concepts and Principles of sequence stratigraphy - Introduction - Relative Sea-level, tectonics and eustasy	2					
	2.2							
	2.3							
3	3.1	- Sediment supply - Sequence and systems tracts - High-resolution sequence stratigraphy and parasequences					Problem set	
	3.2							
	3.3							
4	4.1	Seismic Stratigraphy - Seismic interpretation - Seismic reflection termination patterns	2-3					
	4.2							
	4.3							
5	5.1	- Recognition of systems tracts on seismic data - Pitfalls in interpretation						
	5.2	Outcrop and Well data - Introduction-Historical Perspective - Resolution of well data - Sequence stratigraphy of outcrop and cores - Sequence stratigraphy of wireline logs						D. Emery and K. Myers, 1998
	5.3							
6	6.1							
	6.2							
	6.3							
7	7.1							
	7.2							
	7.3							
8	8.1	Chronostratigraphic Charts - The purpose of chronostratigraphic charts - Constrections of chronostratigraphic charts from seismic data - Interpreting a chronostratigraphic charts - Costal onlap curves and relative sea level curves - Constructing chronostratigraphic charts from other data						
	8.2							
	8.3							
9	9.1							
	9.2							
	9.3			Face to face				
	10.	Biostratigraphy						

10	1	- Introdution - Fossil groups and zonal schemes - Palaeoenvironmental analysis - Biostratigraphy and sequence stratigraphy - Conclusions						
	10.2							
	10.3							
11	11.1							
	11.2							
	11.3							
12	12.1	Biostratigraphy - Introdution - Controls on carbonate sedimentation - Carbonate slopes, platform classification and facies belt - Sequence stratigraphic models for carbonate platforms						
	12.2							
	12.3							
13	13.1	- Cyclicity and parasequences on carbonate platforms						
	13.2							
	13.3							
14	14.1		1-4					Any Available Ref.
	14.2							
	14.3							
15	15.1	Student's projects and presentations						
	15.2							
	15.3							

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	25	1-6	1-3	End of Seventh week	
Students Activities: Project, problem solve, field application, seminar	50	1-15	1-4	Through the Semester	
Final exam	25	7-13	1-3	End of semester	

25.Course Requirements:

(e.g.: students should have a computer, internet connection, webcam, account on a specific software/platform…etc.):

26. Course Policies:

A- Attendance policies: **University regulation**

B- Absences from exams and submitting assignments on time: **University regulation**

C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehavior: **University regulation**

E- Grading policy: May subjected to changes (depends on the overall results)

60- 64 C

65- 69 C+

70- 74 B-

75- 79 B

80- 84 B+

85- 89 A-

90-100 A

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

27. References:

A- Required book(s), assigned reading and audio-visuals:

Sequence Stratigraphy: Dominic Emery and Keith Myers. BP Exploration, 1998,London. 297pp.

B- Recommended books, materials,and media:

Many websites as:

http://www.sepmstrata.org/page.aspx?pageid=15

www.sciencedirect.com/topics/earth-and-planetary-sciences/sequence-stratigraphy

28. Additional information:

Name of the Instructor or the Course Coordinator: **Prof. Abdalla Abu Hamad**	Signature: ……..……	Date: ……..……
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 **Prof. Emad A. Abuosba**	Signature: ……..……	Date: ……..……
Name of the Dean or the Director **Prof. Mahmoud I. Jaghoub**	Signature: ……..……	Date: ……..……