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	
	Deans Council Approval Decision Number	2/3/24/2023
	The Date of the Deans Council Approval Decision	23/01/2023
	Number of Pages	06

1.	**Course Title**	Environmental Geology
2.	**Course Number**	0305985
3.	**Credit Hours (Theory, Practical)**	3
	Contact Hours (Theory, Practical)	3 theoretical
4.	**Prerequisites/ Corequisites**	--
5.	**Program Title**	PhD Geology
6.	**Program Code**	0305
7.	**School/ Center**	School of Science
8.	**Department**	Geology
9.	**Course Level**	PhD
10.	**Year of Study and Semester (s)**	2nd year, 2nd semester
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**	April 2025
16.	**Revision Date**	July 2025

17. Course Coordinator:

Name: Dr. Saber A. Al-Rousan Contact hours: ----

Office number: Geo Building 101 Phone number: 22253

Email: s.rousan@ju.edu.jo

18. Other Instructors:

NA

19. Course Description:

As stated in the approved study plan. Different aspects of the natural and man's activities hazards on the earth, taking in consideration the following issues: Organic and inorganic pollutants in water, soil and air including the different models govern the pollutants behavior, natural hazards, such as volcanoes, earthquakes and landslides, mitigation measures used to protect and/or reduce the man made and/or natural hazards, environmental impact assessment on the major projects, strategic environmental assessment and its relation to development plans and sustainable developments.

20. Program Student 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, 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.
5. 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.
6. 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***		
	Knowledge (A)	**Skills (B)**	**Competency (C)**
1	√		√
2		√	
3		√	
4		√	
5	√		√
6	√		

* Choose only one descriptor for each learning outcome of the program, whether knowledge, skill, or competency.

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. Identify and describe major natural hazards (e.g., volcanoes, earthquakes, landslides) and assess their impact on the environment and human activities.
2. Explain the behavior and effects of organic and inorganic pollutants in soil, water, and air using relevant environmental models.
3. Analyze the sources and consequences of both natural and human-induced environmental hazards.
4. Evaluate strategies and technologies for mitigating natural and anthropogenic environmental hazards.
5. Apply principles of Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) to real-world projects and development plans.
6. Discuss the role of environmental geology in promoting sustainable development and land-use planning.

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

23. Topic Outline and Schedule:

Week	Lecture	Topic	CLO/s Linked to the Topic	Learning Types (Face to Face/ Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1	1	Introduction to Natural Hazards on Earth	3	Face to Face	-	-	Scientific papers + Quizzes + Presentations + Reports + Mid-term Exam	Textbooks + Recommended books, materials, and media
2	2	Types of Natural Hazards: Volcanoes	1	Face to Face	-	-		
3	3	Types of Natural Hazards: Earthquakes	1	Face to Face	-	-		
4	4	Types of Natural Hazards: Landslides	1	Face to Face	-	-		
5	5	Overview of Man-Made Hazards Affecting the Earth	3	Face to Face	-	-		
6	6	Organic Pollutants in Water: Sources and Effects	2	Face to Face	-	-		
7	7	Organic Pollutants in Soil: Behavior and Impact	2	Face to Face	-	-		
8	8	Organic Pollutants in Air: Types and Consequences	2	Face to Face	-	-		
9	9	Inorganic Pollutants in Water: Sources and Effects	2	Face to Face	-	-		
10	10	Inorganic Pollutants in Soil: Behavior and Impact	2	Face to Face	-	-	Scientific papers + Quizzes + Presentations + Reports + Final Exam	
11	11	Inorganic Pollutants in Air: Types and Consequences	2	Face to Face	-	-		
12	12	Environmental Models Governing Pollutant Behavior	2	Face to Face	-	-		
13	13	Mitigation Measures for Natural Hazards	4, 6	Face to Face	-	-		
14	14	Mitigation Measures for Man-Made Hazards	4, 6	Face to Face	-	-		
15	15	Environmental Impact Assessment (EIA) for Major Projects	5	Face to Face	-	-		
16	16	Strategic Environmental Assessment (SEA), Development Plans, and Sustainable Development	5, 6	Face to Face	-	-		

24. Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	CLO/s Linked to the Evaluation activity	Period (Week)	Platform
Mid-term Exam	30	1, 2, 3	1, 2, 3	Week 8	Classroom
Student Activities: projects, problem solving, seminars, quizzes	30	1-6	1-6	Weekly	Classroom
Final Exam	40	1-6	1-6	Week 16	Classroom

25. Course Requirements:

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

Students need a computer, tablet, or smartphone with an updated browser and a stable Internet connection to view some important videos.

26. Course Policies:

A- Attendance policies: According to JU regulations

B- Absences from exams and submitting assignments on time: According to JU regulations

C- Health and safety procedures: According to JU regulations

D- Honesty policy regarding cheating, plagiarism, misbehavior: According to JU regulations

E- Grading policy: The following scale could be used (may be subjected to changes depending on the results). According to JU regulations

Percentage	Letter	Percentage	Letter
60-64	C	80-84	B+
65-69	C+	85-89	A-
70-74	B-	90-100	A
75-79	B		

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

The main library, computer rooms with internet access.

27. References:

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

- ***Introduction to Environmental Geology by Edward A. Keller (Author), 5th edition, Prentice Hall, 2012.***
- ***Geology and the Environment by Pipkin, Trent, Hazlett, and Bierman, (5th ed.). Thompson Learning, 2008***

B- Recommended books, materials, and media:

- ***Environmental Geology by Carla Montgomery (Author), 12th Edition, McGraw-Hill Education; 2023.***
- ***Environmental geology: principles and practice by Bell, Fred G. (Author), Wiley-Blackwell; 1st edition (1998).***

28. Additional information:

NA

Name of the Instructor or the Course Coordinator: **Prof.. Saber Al-Rousan**	Signature: ……..……	Date: ……..……
Name of the Head of Quality Assurance Committee/ Department **Dr. Najel Yaseen**	Signature: ……..……	Date: ……..……
Name of the Head of Department **Prof. Bety Saqarat**	Signature: ……..……	Date: ……..……
Name of the Head of Quality Assurance Committee/ School of Science **Prof. Emad A. Abuosba**	Signature: ……..……	Date: ……..……
Name of the Dean or the Director **Prof. Mahmoud I. Jaghoub**	Signature: ……..……	Date: ……..……