



Form: Course Syllabus

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1. Course Title	Deterioration of Archaeological Materials
2. Course Number	2602213
3. Credit Hours (Theory, Practical)	3
3. Contact Hours (Theory, Practical)	3 Theory
4. Prerequisites/ Corequisites	N/A
5. Program Title	Cultural Resources Management and Conservation
6. Program Code	02
7. School/ Center	Archaeology and Tourism
8. Department	Cultural Resources Management and Conservation
9. Course Level	3d year
10. Year of Study and Semester (s)	2025/2026 First & Second Semesters
11. Program Degree	BA
12. Other Department(s) Involved in Teaching the Course	N/A
13. Learning Language	Arabic
14. Learning Types	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online
15. Online Platforms(s)	<input checked="" type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams
16. Issuing Date	
17. Revision Date	

18. Course Coordinator:

Name: Dr. Fuad Hourani	Contact hours: S,T, TH: 12:30-13:00 & M, W: 13:00-14:30
Office number:	Phone number: 25047
Email: f.hourani@ju.edu.jo	

19. Other Instructors:



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

20. Course Description:

This course defines and describes the physical and chemical characteristics of organic and non-organic materials constituting, generally, archaeological objects. In addition, the course explains the internal and external factors of deterioration affecting different archaeological artifacts, and how the deterioration processes took place.

21. Program Intended Learning Outcomes: (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

PILO's	*National Qualifications Framework Descriptors*		
	Competency (C)	Skills (B)	Knowledge (A)
1. Applies the principles of critical and objective thinking in addressing heritage protection issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Identifies and deeply understands problems and challenges, analyzing the complex aspects of heritage and influencing factors, providing comprehensive and detailed assessments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Develops innovation and entrepreneurship skills in the field of heritage resource management, exploring new opportunities for funding and development.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Engages and discusses effectively with local communities and groups interested in heritage, understanding the impact of heritage resources on cultural identity and community development.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



5. Identify, understands, and critically evaluates academic sources, articles, and research related to heritage and its management to extract main ideas and fundamental concepts.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Listens attentively and focused to lectures and discussions, engaging with the presented content thoughtfully and comprehensively	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Selects and critically evaluates information and ideas, independently analyzing data and evidence.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Develops and identifies strategies for problem-solving, applying acquired concepts and skills in practical contexts.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Utilizes various digital technologies and tools in managing, documenting, and conserving heritage resources, such as using electronic information management systems and imaging, documentation, and analysis techniques.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Innovates new and creative solutions to the challenges of heritage resource management and conservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Collects and comprehensively analyzes data and information, extracting main ideas and fundamental concepts.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Evaluates results, monitors performance, and analyzes data and information to determine the achievement of goals and identify areas needing improvement and development.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Implements effective plans and strategies for managing heritage resources, organizing relevant activities and events.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

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

Course ILOs #	The learning levels to be achieved						Competencies
	Remember	Understand	Apply	Analyze	Evaluate	Create	
K1: Express the right terminology in relation to the types, causes and	✓	✓	✓		✓		K



mechanism of deterioration.							
K2: Outline the chemical and physical properties of each of the different types of archaeological materials.	✓		✓				K
S1: Use the wright method in diagnosing deterioration symptoms.		✓	✓	✓		✓	S
S2: Communicate on topics related to archaeological materials and materials deterioration.			✓	✓	✓		S
C1: Determine the different environmental factors and explain their role in the deterioration processes		✓			✓		C
C2: Describe the different forms of deterioration symptoms.			✓	✓	✓		C
C3: Build the causal relation between factors and effects							

23. The matrix linking the intended learning outcomes of the course -CLO's with the intended learning outcomes of the program -PILOs:

PILO's * CLO's	1	2	3	4	5	6	7	8	9	10	11	12	13	Descriptors**
	A	B	C											



K1: Express the right terminology in relation to the types, causes and mechanism of deterioration.	✓						✓			✓	✓		
K2: Outline the chemical and physical properties of each of the different types of archaeological materials.		✓							✓		✓		
S1: Use the wright method in diagnosing deterioration symptoms.				✓			✓	✓				✓	
S2: Communicate on topics related to archaeological materials and materials deterioration.	✓							✓		✓		✓	
C1: Determine the different environmental factors and explain their role in the deterioration processes	✓			✓									✓
C2: Describe the different forms of deterioration symptoms.					✓		✓				✓		
C3: Build the causal relation between factors and effects		✓									✓		

*Linking each course learning outcome (CLO) to only one program outcome (PLO) as specified in the course matrix.

**Descriptors are determined according to the program learning outcome (PLO) that was chosen and according to what was specified in the program learning outcomes matrix in clause (21).



24. Topic Outline and Schedule:

Week	Lecture	Topic	ILo/s Linked to the Topic	Learning Types (Face to Face/ Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources	
1	1.1 1.2 1.3	General framework: Concepts, definitions and basic principles	K1, S2	Face to face	Class room & Moodle	Sync.	Exams, Individual/Group presentations & Participation in class discussions	See references in section 28	
2	2.1 2.2 2.3	Archaeological materials: Types, resources and elemental compositions	K2	Face to face	Class room & Moodle	Sync.	Exams, Individual/Group presentations & Participation in class		
3	3.1 3.2 3.3								
4	4.1 4.2 4.3	Preparation / fabrication of archaeological materials and the transformation of the primary elements	K2, C3	Face to face	Class room & Moodle	Sync.	Exams, Individual/Group presentations & Participation in class		
5	5.1 5.2 5.3								
6	6.1 6.2 6.3	Archaeological Materials in their environmental contexts	C1, C3	Face to face	Class room & Moodle Class	Sync.	Exams, Individual/Group presentations & Participation in class discussions		
7	7.1 7.2 7.3								
8	8.1 8.2 8.3	Factors, types and agents of deterioration	K2, S1, C1, C3	Face to face	Class room & Moodle	Sync.	Exams, Individual/Group presentations & Participation in class discussions		
9	9.1 9.2 9.3								
	10.1								



10	10.2 10.3	Processes of deterioration per each type of material.	K2, S1, C2, C3	Class room & Moodle	Exams, Individual/Group presentations & Participation in class discussions	
11	11.1 11.2 11.3					
12	12.1 12.2 12.3					
13	13.1 13.2 13.3		S1	Face to face	Class room & Moodle	Sync.
14	14.1 14.2 14.3					
15	15.1 15.2 15.3		S2	Face to face	Class room & Moodle	Sync.

25. Evaluation Methods:

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

Evaluation Activity	*Mark wt.							
		K1	K2	S1	S2	C1	C2	C3
First Exam	30	✓	✓			✓	✓	✓
Second Exam –If any								
Final Exam	50	✓	✓	✓	✓	✓	✓	
**Class work								
Projects/reports								
Research working papers								
Field visits								
Practical and clinical								
Performance								



Completion file							
Presentation/exhibition	20	✓			✓		
Any other approved works							
Total 100%							

* According to the instructions for granting a Bachelor's degree.

**According to the principles of organizing semester work, tests, examinations, and grades for the bachelor's degree.

Mid-term exam specifications table*

No. of questions/ cognitive level						No. of questions per CLO	Total exam mark	Total no. of questions	CILO/ Weight	CILO no.
Create %10	Evaluate %10	analyse %10	Apply %20	Understand %20	Remember %30					
	1			1	1	3	30	10	30%	K1
		1			1	2			20%	K2
	1		1	1		3			30%	C1
		1			1	2			20%	C2

Final exam specifications table

No. of questions/ cognitive level						No. of questions per CLO	Total exam mark	Total no. of questions	CILO Weight	CILO no.
Create %10	Evaluate %10	analyse %10	Apply %20	Understand %20	Remember %30					
		1		1	1	3	50	12	20%	K1
	2					2			15%	K2
1			1			2			10%	S1
1						1			10%	S2
			1			2			15%	C1
		1		1		2			10%	C2

26. Course Requirements:

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



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27. Course Policies:

- A- Attendance policies: As per the university rules
- B- Absences from exams and submitting assignments on time: As per the university rules
- C- Health and safety procedures: As per the university rules
- D- Honesty policy regarding cheating, plagiarism, misbehavior: As per the university rules
- E- Grading policy:
- F- Available university services that support achievement in the course:
 - JU Library
 - Faculty conservation lab.

28. References:

- A- Required book(s), assigned reading and audio-visuals:
 - E-learning coarse page
- B- Recommended books, materials, and media:
 - 1- Pollard M., Batt C., Stern B., Young, S. M. M. 2007: Analytical Chemistry in Archaeology. Cambridge University Press. New York..
 - 2- Robert L. Feller. 1994: Accelerated aging : photochemical and thermal aspects. Getty Conservation Institute. Cambridge UniversityPress.
 - 3- ICOMOS-ISCS : Illustrated glossary on stone deterioration patterns. Monuments and sites XV
 - 4- Gilberto Artioli. 2010 : Scientific methods and Cultural Heritage. Oxford University Press
Other references (in French and English) available upon request.

29. Additional information:

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Name of the Instructor or the Course Coordinator: Signature: Date:
Dr. Fuad Hourani..... 11/01/2026.....



Name of the Head of Quality Assurance
Committee/ Department

Signature:

Date:

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Name of the Head of Department

Signature:

Date:

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Name of the Head of Quality Assurance
Committee/ School or Center

Signature:

Date:

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Name of the Dean or the Director

Signature:

Date: