The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	Marine Biology and Ecology
2	Course number	0304472
3	Credit hours (theory, practical)	(2,1)
	Contact hours (theory, practical)	(2,3)
4	Prerequisites/requisites	General Zoology 0304261
5	Program title	B.Sc. of Biological Sciences
6	Program code	0304
7	Awarding institution	The University of Jordan
8	Faculty	Sciences
9	Department	Biological Sciences
10	Level of course	Undergraduate
11	Year of study and semester (s)	3rd and 4th year, elective course
12	Final Qualification	B.Sc.
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	10/15/16

16. Course Coordinator:

Dr. Mamoon M.D. Al-Rshaidat
Office: Biological Sciences Building, Second Floor
Office Hours: Sunday & Tuesday 10:00-11:00, Monday & Wednesday 11:00-12:00
Phone Number: Ext. 22210
Email: m.rshaidat@ju.edu.jo

17. Other instructors:

N/A

18. Course Description:

As stated in the approved B.Sc. study plan.

Physical and chemical properties of water; basic oceanography; some ecological principles; division of the marine environment; planktons; oceanic nekton; deep sea biology; shallow- water subtidal benthos; intertidal ecology; meiofauna; tropical communities; symbiotic relationships; human impact on the sea.

19. Course aims and outcomes:

A- Aims:

The course aims at:

1. Having the students aquire basic concepts in marine ecology and biology
2. Familiarize the students with the main divisions of the marine environment and their main characteristics
3. Familiarize the students with the main primary producers
4. Introduce the students to the main marine systems and the organisms associated with them
5. Introduce the students to the marine resources and concepts of marine ecoservices
6. Familiarize the students with the human impacts on the marine environment and basics of planing and management in conservation strategies.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to …

Successful completion of the course should lead to the following outcomes:

1.	The main characteristics of the marine environment and the adaptations of the marine organisms
2.	The main marine ecosystems
3.	Marine communities
4.	Importance of primary producers and their impact on biogeochemical cycles
5.	The main marine resources and what ecosystem services they provide.
6.	The main human impacts in the marine environment and the strategies for conservation.

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Intro to Course	1.	M. Al-Rshaidat			
Ch. 6: Water and Ocean Structure 6.1 6.2 6.3	2.	M. Al-Rshaidat			
Ch. 6: Water and Ocean Structure 6.4 6.5 6.6 6.8	3.	M. Al-Rshaidat			
Ch. 7: Ocean Chemistry	4.	M. Al-Rshaidat			
Ch. 8: Circulation of the Atmosphere 8.1 8.2 8.3 8.4	5.	M. Al-Rshaidat			
Ch. 9: Circulation of the Ocean 9.1 9.2 9.3 9.4	6.	M. Al-Rshaidat			
Ch. 12: Coasts 12.1 Coasts Are Shaped by Marine	7.	M. Al-Rshaidat			

and Terrestrial Processes 12.2 Erosional Processes Dominate Some Coasts 12.5 Biological Activity Forms and Modifies Coasts 12.8 Humans Interfere in Coastal Processes						
Ch. 13: Life in the Ocean	8.	M. Al-Rshaidat				
Continue...	9.	M. Al-Rshaidat				
Ch. 14: Plankton, Algae, and Plants	10.	M. Al-Rshaidat				
Continue...	11.	M. Al-Rshaidat				
Ch. 16: Marine Communities	12.	M. Al-Rshaidat				
Continue...	13.	M. Al-Rshaidat				
Ch. 18: The Ocean and the Environment	14.	M. Al-Rshaidat				
Continue...	15.	M. Al-Rshaidat				

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

This coures will be taught in lectures class format in addition to a labortory component. Composed of two 1-hour lectures and one 3-hours laboratory each week. Lectures will be presented in blocks of key topics. Attendance at lectures and laboratories is critical for obtaining a full understanding of the subject content (note that students who do not attend lectures and laboratories will have a reduced likelihood of passing the exam).

A topical chapter from the text book will be selected and students will be required to read the chapter prior to attending a 1 hour discussion. Laboratories will be in parts hands-on experience on sone tools used in marine ecology, in addition to student led discussions about hopt spot topics in marine ecology, where the key features of a paper are covered.

As part of the assessment for this course, students will also be required to submit a literature review and present an oral presentation during the laboratory sessions. A short tutorial focused on writing the literature review and oral presentaitons will be provided during the first half of the semester and attendance is essential for successful completion of this major component of the assessment. During the oral presentation of the students for their topics, all other students are required to come up with questions, playing the role of the evaluators.

22. Evaluation Methods and Course Requirements:

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

Evaluation criteria #1: Punctuality and commitments to deadlines
This evaluation will be based on assignments given to students, with a primary purpose of teaching them the value of deadlines and the ability to organize their schedule to fulfill these deadlines. This includes preparation for chapters to be presented by students, summary of their research rojects, submission of the final draft of the written research proposal and submission of the error free power point presentation

Evaluation criteria #2: Written exam
Based on essay questions of the comprehensive, application, analytical, and knowledge type criteria. Two exams will be evaluated; Midterm exam (30%) and Final Exam (50%)

Evaluation criteria #3: Literature Review
Each student is requested to choose a topic of marine ecology, and try to give an introduction to the topic, search

for literature, and finally present the topic orally in oront of their peers. The main intended learning outcome of this task is contribute to the development of the following undergraduate attributes:

1. Enhance analytical thinking ability of the student
2. Disciplinary knowledge and its appropriate application
3. Enhance enquiry-oriented approach
4. Enhance the professional skills and their appropriate application, such as communication skills, innovation, and initiative

Evaluation criteria #4: Oral Preseantations
Evaluation based on the oral presentation of each student's research project to their peers and people from diverse scientiic backgrounds, and convence them with the importance of the topic in discussion and it's impact on marine environemnts. In addition to enhancing the student's ability to communicate their scientific knowledge to their peers through the presentation of the topic from the iterature review.

Evaluation criteria #5: Peer Review of Oral Preseantations
Part of the student evaluation will be based on the ability of the student to peer review the oral presentaions of their peers. Where each student is required to ask their peers a key question about their oral presentation. This question will be part of each student's evaluation for their own performance.

23. Course Policies:

A- Attendance policies:

Attendance is required, and students missing some of the 1-hour classes or the 3-hour laboratories will jeopardize their successful completion of the course, due to the discussion nature of the course and the key elements discussed during the course that cannot be found in the textbook. Also, students are required to refer to Student Handbook (pages 133-134) for questions related to attendance and absence.

B- Absences from exams and handing in assignments on time:

According to the University of Jordan regulations, refere to student handbook (pages 133-134)

C- Health and safety procedures:

Not emphasised in this course due to the lack of practical component.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

According to The University of Jordan regulations. Students shall refer to Student Handbook (pages 63-71) for questions related to cheating and plagiarism.

E- Grading policy:

Mid-term exam	30%
Participation and Oral Presentaion	20%
Final Exam	50%

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

Online resources from the e-library to access scientific literature.

24. Required equipment:

Class-room, data show, projector screen, whiteboard

Laboratory, basic marine ecology equipment and tools, data show, projector screen, white board

25. References:

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

"***Oceanography: An Invitation to Marine Science***" by Tom S. Garrison. 7th or 8th Edition. Brooks Cole Publishing, ©2010, 2011

26. Additional information:

Schedule of Student Seminars & Guidelines
Your seminar should have the following sections: Introduction (with pictures), Materials/Methods (outline), Data (graphs), and Discussion/Conclusion. Use bullet points on your PPT slides. Avoid reading, either from slides or note cards. Try your best to make it as interesting as possible. Your presentation will be held during the laboratory period and should last for ~20 min, followed by 5 min for questions/answers/class discussions.

No.	Student Name	Marine Ecology Topic	Date
1.	Farah Khaleel	Hydrothermal vents	12 October 2016
2.	Ruba	Algal turf: cleaning, use as biofuel	12 October 2016
3.	Israa	Nutritional value of seaweeds	12 October 2016
4.	Ala	Sharks decline and effects on marine ecosystems	19 October 2016
5.	Maali	Whale remains become an ecosystem	19 October 2016
6.	Marwa	Hot spots of marine biodiversity	19 October 2016
7.	Afnan Ahmad	Microbial Ecosystem Services in Marine Environments	26 October 2016
8.	Sereen	Anoxic zones in the Arabian sea	26 October 2016
9.	Suad	Living in a contaminated estuary	26 October 2016
10.	Reem	Symbiosis in marine organisms	02 November 2016
11.	Bayan	The power of plankton	02 November 2016
12.	Farah Abdullah	Harmful algal blooms and eutrophication	02 November 2016
Midterm Exam			**09 November 2016**
13.	Lena	Diversity and abundance around mid-ocean ridges	16 November 2016
14.	Jenan	Disturbance and degradation of coral reefs	16 November 2016
15.	Batool	Marine chemical ecology	16 November 2016
16.	Noor	Climate change and deep sea ecosystem	30 November 2016
17.	Mais	Ecology of seamounts	30 November 2016
18.	Shahd	Acidification of oceans	30 November 2016
19.	Afnan Muaweyah	Microbes polluting beaches and food resources	07 December 2016
20.	Maisaa	Bioluminescence in the marine world	07 December 2016
21.	Nora	Impacts of marine protected areas on fishing communities	07 December 2016
22.	Jawaher	Marine pollution: troubled waters	14 December 2016
23.	Asma'	Marine pollution: how does mercury get in fish?	14 December 2016
24.	Safa	Marine Ecosystem Service	14 December 2016
25.	Malak	Red-Dead sea conduit	21 December 2016
26.	Azhar	Marine Invasive Species	21 December 2016

27.	Samar	Ballast Water and protecting the Gulf of Aqaba water	21 December 2016

Name of Course Coordinator: **Dr. Mamoon M.D. Al-Rshaidat** Signature: ---------- Date: ---------

Head of curriculum committee/Department: ---------- Signature: ----------

Head of Department: ---------- Signature: ----------

Head of curriculum committee/Faculty: ---------- Signature: ----------

Dean: ---------- -Signature: ----------

Copy to:
Head of Department
Assistant Dean for Quality Assurance
Course File