



Course Specifications

Course Title:	Marine Biology
Course Code:	BIO403
Program:	Bachelor of Science in Biology
Department:	Department of Biology
College:	Faculty of Science
Institution:	University of Tabuk

Table of Contents

A. Course Identification	3	
6. Mode of Instruction (mark all that apply)		3
B. Course Objectives and Learning Outcomes	4	
1. Course Description		4
2. Course Main Objective		4
3. Course Learning Outcomes		4
C. Course Content	5	
D. Teaching and Assessment	5	
1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods		5
2. Assessment Tasks for Students		6
E. Student Academic Counseling and Support	6	
F. Learning Resources and Facilities	7	
1. Learning Resources		7
2. Facilities Required		7
G. Course Quality Evaluation	7	
H. Specification Approval Data	8	



A. Course Identification

1. Credit hours:	3 (2 Theoretical + 1 Practical) hours
2. Course type	
a.	University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered:	Level 8/ Second semester/ Fourth year
4. Pre-requisites for this course (if any):	General Biology 2 (BIO202)
5. Co-requisites for this course (if any):	None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other (laboratory)	2	50%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	36
2	Laboratory/Studio	26
3	Tutorial	
4	Others (specify)	
	Total	52

B. Course Objectives and Learning Outcomes

1. Course Description

- This course introduces students to marine biology covering aspects such as marine ecosystems, organisms and oceanography. The topics includes exploring the seas oceans with a special focus on the red sea, tides, marine environment, interdependence in the ocean, marine unicellular organisms, marine plants and algae, and marine invertebrate and vertebrate animals. The course start to develop a range of core skills and confidence in effective written communication, information technology (including use of peer-reviewed literature), and data handling skills. It will also start to develop field and id skills and taxonomy skills and safe fieldwork practices.

2. Course Main Objective

By the end of this course, the students should be able to:

- Providing a broad overview of the world's seas and oceans focusing primarily on living organisms.
- Recognizing and understand basic terms and concepts of marine biology.
- Understanding the structure, function and behavior of representative marine life forms.
- Identifying the biodiversity of marine ecosystems.
- Understanding both the general and the habitat specific biological processes that occur in marine environments.



- Describing interactions between physical and biological factors occurring in various marine environments.
- Identifying and discussing major energy transformations in the marine environment.
- Identifying and analyzing current issues in marine science and technology.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	To describe the physical, chemical and biological environment of the deep-sea, and how this accounts for patterns of species abundance and diversity.	K1
1.2	To list the roles of disturbance and biological interactions (Competition, grazing, predation and disease) in shaping community organization in red sea.	K2
2	Skills :	
2.1	To apply the classification of different marine living organisms, phytoplankton, zooplankton, algal phyla, seaweeds phyla and different animal phyla.	S2
2.2	To compare invertebrates and vertebrates of the marine environment.	S1
2.3	To summarize coral reef biology and ecosystems.	S4
3	Values:	
3.1	To work independently as part of a team.	V1
3.2	To use quantitative scientific techniques to describe the marine environment including interactions between organisms and/or the physical environment.	V2

C. Course Content

1-Theoretical Part

No	List of Theoretical Topics	Contact Hours
1	Introduction and Fundamental Concepts in Marine Biology	2
2	Exploring the seas Oceans with a special focus on the red sea	2
3	Tides	2
4	Marine Environments	2
5	Interdependence in the Ocean	2
6	Marine Unicellular Organisms	2
7	Marine Algae	2
	Mid Term Exam	
8	Marine plants and Sea Weeds	2
9	Marine Invertebrate Animals	2
10	Marine Invertebrate Animals	2
11	Marine Vertebrate Animals	2
12	Marine Vertebrate Animals	2
13	Productivity in The marine Environment	2
	Final Exam	
Total		26



2-Practical Part

N o	List of Practical Topics	Contact Hours
1	Introduction to Marine Biology Laboratory and Essential Instruments.	2
2	Identification of mangroves and marine algae	2
3	Identification of mangroves and marine algae	2
4	Collection and identification of planktons	2
5	Toxicity bioassay using chemical pesticides against marine models	2
6	Identification of gemmule in sponges	2
7	Identification of Nereis	2
	Midterm Exam	
8	Identification of Sea urchin	2
9	Identification of Hippocampus (seahorse)	2
10	Mounting of shark Placoid scales	2
11	Cultivation of blue green algae	2
12	Study of internal and external organs of bony fishes	2
13	Study of internal and external organs of cartilaginous fishes	2
	Final Exam	
Total		26

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	To describe the physical, chemical and biological environment of the deep-sea, and how this accounts for patterns of species abundance and diversity.	<ul style="list-style-type: none"> - Lectures. - Case study and articles - Activities and homework. - Use the internet. 	<ul style="list-style-type: none"> - Quizzes. - Homework. - Periodic exams. - Final exams.
1.2	To list the roles of disturbance and biological interactions (Competition, grazing, predation and disease) in shaping community organization in red sea.		
2.0	Skills		
2.1	To apply the classification of different marine living organisms, phytoplankton, zooplankton, algal phyla, seaweeds phyla and different animal phyla.	<ul style="list-style-type: none"> - Lectures. - Individual and small group tasks. - Short essay. - Lab demonstration, dissection and drawing skills. - Individual presentation and 	<ul style="list-style-type: none"> - Assessment of lab reports and practical examination. - Individual and group presentation. - Case study.

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.2	To compare invertebrates and vertebrates of the marine environment.	working as a part of group.	<ul style="list-style-type: none"> - Demonstration through charts and posters. - Periodic exams - Final exams.
2.3	To summarize coral reef biology and ecosystems.		
3.0	Values		
3.1	To work independently as part of a team.	<ul style="list-style-type: none"> - Essay writing - Lab demonstration - Individual & group presentation 	<ul style="list-style-type: none"> - Oral and written scientific report - Interactive discussion and participation - Work in groups
3.2	To use quantitative scientific techniques to describe the marine environment including interactions between organisms and/or the physical environment.		

2. Assessment Tasks for Students

#	*Assessment task	Week Due	Percentage of Total Assessment Score
1	Quizzes + Assignments + Class discussion	1-13	10%
2	Midterm Theoretical Exam	8	25%
3	Midterm Practical Exam	8	5%
	Final Practical Exam	14	15%
4	Final Theoretical Exam	15	40%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

- Office hours 6 hr/ week at least.
- Academic Guidance for about 30 students as determined by admission and registration.
- Direct supervision of staff for lab works.
- Electronic communication through blackboard and email.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	- Marine biology: An Ecological Approach (6th Edition). James W. Nybakken, Mark D. Bertness (2004).
Essential References Materials	- None.



Electronic Materials	- Websites on the internet that are relevant to the topics of the course.
Other Learning Materials	- Multi-media associated with the textbook and the relevant websites.

2. Facilities Required

Item	Resources
Accommodation Classrooms, laboratories, demonstration) (.rooms/labs, etc	<ul style="list-style-type: none"> - A sufficient number of classrooms to accommodate students - Well-equipped practical laboratories to accommodate students - Virtual session provided by the blackboard (which allow discussion and sharing PowerPoint and videos.
Technology Resources AV, data show, Smart Board, software.) (.etc	<ul style="list-style-type: none"> - Data show - Wireless connection in the building for students and faculties.
Other Resources Specify, e.g. if specific laboratory equipment is required, list requirements or (attach a list	<ul style="list-style-type: none"> - A number of preserved animal samples, algal samples are required. - Compound microscope, permanent algal slides. - Different types of marine fresh samples

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
- Effectiveness of teaching and assessment.	- Students.	Indirect Questionnaires.
- The extent of achieving the course learning outcomes.	<ul style="list-style-type: none"> - Program committee. - Staff members. - Students. 	Direct <ul style="list-style-type: none"> - Questionnaires. - Reports. - Meetings
- Quality of learning resources.	<ul style="list-style-type: none"> - Program leaders. - Peer Reviewer. 	Direct & Indirect <ul style="list-style-type: none"> - Questionnaires. - Reports. - Meetings

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Biology Department Council
Reference No.	
Date	1/6/2022



