هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Fundamentals of Ecology**
Course Code:	**BIOL301**
Program:	**Bachelor**
Department:	**Biology**
College:	**Sciences**
Institution:	**Jazan University**
Version:	**1**
Last Revision Date:	**1/3/2023**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	2 Hours				
2. Course type					
a.	University ☐	College ☐	**Department☒**	Track☐	Others☐
b.	Required ☐	Elective☐			
3. Level/year at which this course is offered: **Level 7 (3rd Year)**					
4. Course general Description **This course discusses the main concepts of environment and their impact on all species. Its explain ecological Factors (Abiotic, Biotic), soil factors (soil origin, structure, physical properties, chemical properties), biogeochemical cycles, inter-relations of living organisms (Mutualism, Commensalism, Parasitism), biodiversity, ecosystem (Abiotic and Biotic Components), trophic Levels, environmental problems (Global Warming, Salinization, Desertification, Ozone Depletion, Air Pollution, Water Pollution, Noise Pollution).**					
5. Pre-requirements for this course (if any): **General Biology BIOL101**					
6. Co- requirements for this course (if any): **None**					
7. Course Main Objective(s) **This course aims at giving the student knowledge in the fields:** **1) To introduce the students to the concept of ecology, its divisions, and components** **2) Relationships within the ecosystem.** **3) Identify environmental factors.** **4) Study the impact of environmental factors on the ecosystem.** **5) Explain the human role in the environment positively and negatively.** **6) Awareness of the importance of the environmental protection from pollution.**					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	30	100 %
2.	E-learning	---	----
3.	Hybrid • Traditional classroom • E-learning	---	----

No	Mode of Instruction	Contact Hours	Percentage
4.	Distance learning	---	----

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	11 Per Semester
2.	Laboratory/Studio	22 Per Semester
3.	Field	---
4.	Tutorial	---
5.	Others (specify)	---
	Total	33

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Define all principles, concepts, aspects related to Ecology.	K1.1	Traditional classroom	Quizzes, individual assessment
1.2	Differentiate (Compare) between different mechanisms, functions, practices and aspects related to Ecology	K2.1	Traditional classroom	Quizzes, Written exam
2.0	Skills			
2.1	Debate the biological theories, principles and processes relevant to Ecology	S1.1	Traditional classroom	group work, quizzes assignments
2.2	Apply the theoretical knowledge and understanding lab experiments	S1.2	Traditional classroom	Assignments Group work
3.0	Values, autonomy, and responsibility			
3.1	Manage teamwork effectively by integrating different skills and abilities of team members.	V3.1	E-Lectures, group work	Presentation Practical experiments assignments

C. Course Content

No	List of Topics	Contact Hours
1	• Introduction to Ecology: Concept of ecology and its fields and its relation to other sciences. 1st Chapter, 2 Lectures, 1st week	1
2	• The ecosystem: The components of the natural ecosystem and the types of ecosystems. 2nd Chapter, 2 Lectures, 2nd week	1
3	• Living organisms and levels of nutrition, food chains and food webs - ecological pyramids. 3rd Chapter, 2 Lectures, 3rd week	1
4	• Biogeochemical elements cycle: water, carbon, oxygen, nitrogen, phosphorus cycles. 4th Chapter, 2 Lectures, 4th week	1
5	• Living and non-living environmental factors and their impact on living organisms. 5th Chapter, 2 Lectures, 5th week	1
6	• Ecosystem Balance - natural ecosystems - conservation of natural resources. • 6th Chapter, 2 Lectures, 6th week	1
7	• Biodiversity 7th Chapter, 2 Lectures, 7th week	1
8	• Environmental pollution: Water and food pollution, air and soil pollution. 8th Chapter, 2 Lectures, 8th week	1
9	• Environmental pollution: Air and soil pollution. 9th Chapter, 2 Lectures, 9th week	1
10	• Desertification, radiation, noise pollution, thermal pollution, electromagnetic pollution, climate change, global warming and Ozone layer depletion 10th Chapter, 2 Lectures, 10th week	1
11	• Renewable Energy and Energy conservation in the natural ecosystem. 11th Chapter, 2 Lectures,11th week	1
Total		11

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1	**Theoretical Quizzes**	**3rd week**	**5 %**
2	**Theoretical Mid-term exam.**	**7th week**	**10 %**
3	**Theoretical Assignment**	**8th week**	**5 %**
4	**Practical Assignment**	**9th week**	**5 %**
5	**Practical Quiz**	**5th week**	**5 %**
6	**Final Practical Exam**	**11th week**	**20 %**
7	**Theoretical Final Exam**	**12th week**	**50 %**

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	• **Alyaa Atokh Boran and M. Abo Deyah (2014) Ecology (in Arabic) 4th Eddition, Amman, Jordan.**
Supportive References	• Al-Oudat, Mohamed Abdo and Abdullah Yahya Basahey (2001), Pollution and Environmental Protection (in Arabic) , Deanship of Library Affairs, King Saud University, Riyadh - Saudi Arabia. • **Hayati, A. A. (2007).** *Fundamentals of Ecology (in Arabic)*, First Edition, Dammam, Saudi Arabia. • Molles M.C.(2015) Ecology: Concepts and Applications 7th Edition, McGraw Hill, New York. • Molles M.C. (2008) Ecology. McGraw Hill, New York. • Botkin D.B. Keller E.A. (2007) Environmental Science. Wiley, New York.
Electronic Materials	• General Authority for Meteorology and Environmental Protection Saudi Arabia http://www.pme.gov.sa • Saudi Wildlife Authority Website http://www.swa.gov.sa/index.php/en
Other Learning Materials	• Collage Library has several books related to Marine Biology. • Other courses in the department are integrated with marine biology course which give extra detail about this subject.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• A Lecture room for group of 60 students which has a teaching board and projector and internet access. • A Laboratory for group of 25 students which has all required equipment such as basic microscope, slides etc.
Technology equipment (projector, smart board, software)	• A data show with smart Board. • Access to internet.
Other equipment (depending on the nature of the specialty)	• Light microscopes, glassware, marine organisms for anatomy (all anatomy equipment)

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Targeted Students + Head of Department (HOD)	• Student questionnaires. • Assessment of course results and report by HOD. • A report from Quality committee member in the department An assessment report from assessment and evaluation Unit in the collage.
Effectiveness of students assessment	Targeted Students + Head of Department (HOD)	• Student questionnaires. • Assessment of course report by HOD. • A report from Quality committee member in the department An assessment report from assessment and evaluation Unit in the collage.
Quality of learning resources	Targeted Students + Head of Department (HOD)	• Student questionnaires. • Assessment of course report by HOD. • A report from Quality committee member in the department An assessment report from assessment and evaluation Unit in the collage.
The extent to which CLOs have been achieved	Targeted Students + Head of Department (HOD)	• Student questionnaires. • Assessment of course results and report by HOD. • A report from Quality committee member in the department An assessment report from assessment and evaluation Unit in the collage.

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	BIOLOGY DEPARTMENT BOARD
REFERENCE NO.	BIO2214
DATE	20/9/2022AD