Course Specification
(Bachelor)

Course Title:	Environmental pollution
Course Code:	BIOL 242
Program:	Biology
Department:	Biology Department
College:	College of Science
Institution:	Majmaah University
Version:	3rd
Last Revision Date:	24/ December /2023

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (2 (2+0)) **Equivalent to ECTS Credit Points: 3**					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☐ Required		☒ Elective		
3. Level/year at which this course is offered: (4th / 2nd)					
4. Course General Description:					
The course focuses on different types of environmental pollution, solid, liquid, gaseous, noise, and radioactive, and their effects on living organisms. It covers the sources and impacts of water, air, and soil pollutants, as well as noise pollution and ionizing radiation.					
5. Pre-requirements for this course (if any)**:**					
Ecology (BIOL-241)					
6. Co-requisites for this course (if any)**:**					
NIL					
7. Course Main Objective(s):					
The course aims to provide essential knowledge about major environmental pollutants, their sources, and their effects, including water, air, soil, noise, and radiation. It covers key environmental issues such as greenhouse effects, ozone depletion, smog, aerosols, and acid rain, along with basics of nuclear chemistry and radiation ecology, highlighting their impacts on ecosystems and public health.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	30	75%
2	E-learning	10	25%
3	Hybrid • Traditional classroom • E-learning	0	0
4	Distance learning	0	0

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	0

3.	**Field**	0
4.	**Tutorial**	0
5.	**Others (specify)**	0
Total		30

Workload (based on the academic semester)

No	Activity	Workload (in hours)
1.	**Contact Hours**	30
2.	**Self-Study hours or Academic learning hours** (Assessment, quizzes, reports, discution , Library,research..)	30
Total workload		60 hours
Equivalent to ECTS Credit Points		3

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

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Recognize the knowledge of fundamental concepts in environmental pollution	K1	Traditional-based learning	Quizzes Midterm, final examination, E-exam
2.0	**Skills**			
2.1	Construct and categorize the environmental pollution in various area	S1	Traditional-based learning	Quizzes Midterm, final examination, E-exam
3.0	**Values, autonomy, and responsibility**			
3.1	Communicate and work effectively in groups as well as individually for biological experiments	V1	Traditional-based learning	Homework and Assignment

C. Course Content

No	List of Topics	Contact Hours
1	Unit 1 – Introduction to Environmental pollution Introduction Classification and definition. Sources and effects. Prevention and control of Environmental pollution.	4
2	Unit 2 – Air pollution: Introduction. Air pollutants and their classification. Sources and effects of air pollutants. Control of air pollution.	4
3	Unit 3 – Water pollution: Introduction. Sources and effects of water pollution. Effects of water pollutants. Prevention and control of water pollution.	4
4	Unit 4 – Soil pollution: Introduction. Sources of soil pollution. Control of soil pollution.	4
5	Unit 5 – Radiation pollution: Introduction. Concepts of nuclear chemistry and terms used in radiations ecology. Sources of ionizing radiations. Effects of ionizing radiations.	4
6	Unit 6 – Radiation pollution: Introduction. Sources and effects of Radiation pollution. Biological effects of radiation Prevention and control of radiation pollution.	5
7	Unit 7 – Noise pollution: Introduction. Sources and effects of Noise pollution. Effects of Noise pollution. Prevention and control of Noise pollution.	5
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Assignments / Homework/Quiz	Week 2-15	20 %
2.	Mid-term Exam 1	Week 5-7	15 %
3.	Mid-term Exam 2	Week 11-12	15 %
4.	Bb electronic exam	Week 13	10 %
5.	Final Exam	Week 16-17	40 %

*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	Environmental Pollution and Control Book • Fourth Edition • 1998 J. Jeffrey Peirce, Ruth F. Weiner and P. Aarne Vesilind
Supportive References	Environmental Pollution and Control Book • Fourth Edition • 1998 J. Jeffrey Peirce, Ruth F. Weiner and P. Aarne Vesilind
Electronic Materials	https://www.nsf.gov/ - The National Science Foundation (NSF)
Other Learning Materials	--

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• The number of seats in classrooms is suitable and no need for extra seats. • The classrooms provided with smart board and e-podium provided with smart board.
Technology equipment (projector, smart board, software)	The classrooms are provided with smart board and e-podium
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct
Effectiveness of Students assessment	Program Leaders	Direct
Quality of learning resources	Students	Indirect
The extent to which CLOs have been achieved	Faculty	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Biology Department Council
REFERENCE NO.	07
DATE	04/04/1446 - 07/10/2024