هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	*Environmental Pollution*
Course Code:	*BIO1304*
Program:	*Bachelor of Science in Biology*
Department:	*Department of Biology*
College:	*Faculty of Science*
Institution:	*University of Tabuk*
Version:	***Course Specification Version Number***
Last Revision Date:	*September 2023*

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours:					
3 Credit (2 theoretical + 1 practical) hours					
2. Course type					
A.	☐University	☐ College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (5th Level / 3rd year)					
4. Course general Description:					
This course discusses the issue of environmental pollution. definitions of environmental pollution, natural pollution and man-made pollution, different types of environmental pollution (air, water, soil, radioactive, noise and visual pollution): causes, impacts on the environment, control, and minimization; environmental pollution and human health. Environmental Impact Assessment (EIA) Concept, principles, and types of EIAs, Environmental Legislations and Guidelines and recommendation of international organizations on pollution. International environmental issues related to environmental pollution (ozone depletion, global warming, and climate change).					
5. Pre-requirements for this course (if any)**:**					
Principle of Environmental Sustainability (BIO1201). Principle of Ecology (BIO1202).					
6. Co-requirements for this course (if any)**:**					
None					
7. Course Main Objective(s):					
By the end of this course, the students should be able to: - Define the term environmental pollution. - Determine and differentiate between types of environmental pollution, their causes, consequences, and limitation measures in addition to the impacts of pollution on human health. - Describe Environmental Impact Assessment (EIA) Concept, principles, and types. - Discuss and evaluate the international efforts to minimize environmental pollution. - Define the main environmental issues related to pollution. - Applying their knowledge to solve new and interesting problems in industrial pollution control.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		
5	**Others (Lab work)**	2	50%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		**60**

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 the term environmental pollution, its types, causes, effects and minimizing measures.	K1	-Lectures. -Class discussion. -Group discussion. -Case studies.	-Quizzes -Midterm examination. -Final examination. -Class discussion and participation. - Homework (Problem-solving).

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.2	Describe the impacts of pollution on human health, recognize the concept and principles of Environmental Impact Assessment (EIA), and discuss environmental issues related to pollution and organizational efforts for control.	K2	-Lectures. -Class discussion. -Group discussion. -Homework assignments. -Case studies.	-Quizzes -Midterm examination. -Final examination. -Class discussion and participation. -Homework assignments.
2.0	**Skills**			
2.1	Use different types of instruments for collecting, measuring and analyzing samples.	S2	-Lectures. -Short essay -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.2	Use appropriate technologies to organize and analyze data.	S4	-Lectures. -Short essay -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	Evaluate environmental conditions and pollutant concentrations and status using scientific writing and interpretation skills.	S6	-Lectures. -Short essay -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
3.0	**Values, autonomy, and responsibility**			
3.1	Work as a member of a group in the evaluation of environmental issues and sustainability solutions.	V1	-Short essay -Class discussion. -Group discussion.	-Class discussion and participation. -Homework (Problem-solving).

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction	2
2.	Environment – definition and components.	2
3.	Environmental pollution- definition, sources, and types.	2
4.	Water Pollution: causes and sources.	2
5	Water Pollution: impacts and minimization measures.	2
6.	Solid waste: sources, impacts and minimization measures.	2
7.	Radioactive Pollution: Causes, sources, impacts and minimization measures.	2
8.	Air Pollution: causes and sources.	2
9.	Air Pollution: impacts and minimization measures.	2
10.	Noise Pollution: Causes, sources, impacts and minimization measures.	2
11.	Soil Pollution: Causes, sources, impacts and minimization measures.	2
12.	Light Pollution: Causes, sources, impacts and minimization measures.	2
13.	Environmental impact assessment (EIA)- concept and principles.	2

14.	Types of EIAs.	2
15.	Environmental legislation and guidelines.	2
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Class Participation	During whole teaching period	5
2.	Homework (Problem-solving)	3 to 13	5
3.	Short Exams (Quizzes)	During whole teaching period	5
4.	Midterm Theoretical Examination	8-9	20
4.	Reports (For Practical)	During whole teaching period	10
5.	Final Practical Examination	15	15
6.	Final Theoretical Examination	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	- Hill, Marquita K. Understanding environmental pollution. Cambridge University Press, 2020. - Hacker, S. D. and Cain, M. L. (2018). Ecology, 4th edition Oxford University Press. ISBN: 9781605357973. - Bowman, W. D., Hacker, S. D. and Cain, M. L. (2017). Ecology, 4th edition. Sinauer Associates, Inc., USA. ISBN: 9781605356181.
Supportive References	- Journal of environmental biology. - Journal of Environmental Pollution. - Journal of Ecology. - Journal of Air water and Soil Pollution. - Journal of Environmental and Experimental biology.

	- Hacker, S. D. and Cain, M. L. (2018). Ecology, 4th edition. Oxford University Press. ISBN: 9781605357973. - Bowman, W. D., Hacker, S. D. and Cain, M. L. (2017). Ecology, 4th edition. Sinauer Associates, Inc., USA. ISBN: 9781605356181. - Jacobson, M. Z. (2002). Atmospheric Pollution: History, Science, and Regulation. Cambridge University Press. ISBN: 9780511802287. - Hill, M. K. (2010). Understanding Environmental Pollution. Cambridge University Press, UK. ISBN: 9780521518666.
Electronic Materials	- Saudi Digital Library - http://instructors.coursesmart.com
Other Learning Materials	Multimedia associated with the textbook and the relevant websites.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Well-equipped classrooms and laboratories that accommodate a sufficient number of students Ecology and Environment Laboratory is required
Technology equipment (projector, smart board, software)	Projectors required in each lecture room and laboratory
Other equipment (depending on the nature of the specialty)	Equipment for environmental monitoring and impact assessment required

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	- Students. - Faculty members.	Indirect & direct: - Questionnaires. - Meetings.
Effectiveness of Students assessment	- Quality and development committee. - Department chair.	- Course report. - Program annual report.
Quality of learning resources	- Plan and program committee. - Students. - Staff members.	Indirect & direct: - Questionnaires. - Meetings. - Reports.

Assessment Areas/Issues	Assessor	Assessment Methods
The extent to which CLOs have been achieved	- Quality and development committee. - Peer Reviewer. - Program leaders.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	PROGRAMS AND STUDY PLANS COMMITTEE
REFERENCE NO.	
DATE	SEPTEMBER 2023