هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission
اعتماد
NCAAA
2024
TP-153

Course Specification
(Bachelor)

Course Title:	Fundamentals of Environmental Science
Course Code:	EVS 1110
Program:	Bachelor of Science in Environmental Science
Department:	Biology
College:	Science
Institution:	Imam Mohammed Ibn Saud Islamic University
Version:	1
Last Revision Date:	-

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: 4 (Lecture 3 + Lab 2)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (Level 1 / First Year)					
4. Course general Description:					

The fundamental Environmental Science course is designed to offer an integrated approach to the basic scientific study and basic analysis of the environment, backed-up with a good awareness of current environmental issues and concerns. The course aims to provide a stimulating learning environment to enable students to develop a range of academic and generic skills to help them find good quality employment on graduation and provide the basis for a lifetime of learning. The course embraces the integrated nature of environmental science, drawing on biology, chemistry, physics, and geology to allow students to interpret the pressures on our environment and point to ways in which we can act to manage these more successfully. Elements of the course can be chosen including energy resources and the science of zero carbon, hydrology, climate change and environmental conservation. There is the opportunity to specialize and numerous opportunities for fieldwork. In the final-year dissertation, students are able to choose their own area in which to conduct a substantial environmental investigation to produce a report.

5. Pre-requirements for this course (if any)**:**

None

6. Co-requisites for this course (if any)**:**

None

7. Course Main Objective(s):

The course aims to help and equip students to work as environmental scientists or within alternative employment. In general, the course aims to:

1- Develop knowledge of the variety of strategies needed to work in the field of environmental science.

2- Train the students with a specialist knowledge of a specific aspect of environmental science, such as ecology or environmental chemistry.

3- Provide a stimulating, wide-ranging, integrated program in the environmental sciences.

4- Develop a range of key skills through opportunities provided in the study modules, including critical, analytical, practical, research and communication skills, to prepare students for the next environmental courses study and/or professional qualifications.

5- Provide a challenging, stimulating and self-rewarding study environment.

6- Professionally train students such that it will enhance their skills and help them towards a satisfying career in environmental science.

7- Develop the skills necessary for life-long independent learning and acquisition of knowledge.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	√	100%
2	E-learning	-	-
3	Hybrid • Traditional classroom • E-learning	-	-
4	Distance learning	-	-

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	30
3.	**Field**	0
4.	**Tutorial**	0
5.	**Others (specify)**	0
Total		75

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	**Clarify the contributions of the natural sciences and the social sciences to the identification, understanding and resolution of environmental issues.**	K1	Three credits hours weekly lectures, lab and field	-Quizzes -Presentations -Assignments -written exams
1.2	**Describe the processes which shape the natural world at different spatial and temporal scales and how they influence, and are influenced by, human activities.**	K2	Three credits hours weekly lectures, lab and field	Quizzes -Presentations -Assignments -written exams
1.3	**Explain how knowledge of environmental issues forms the basis for informed concern about the Earth and its people.**	K3	Three credits hours weekly lectures, lab and field	Quizzes -Presentations -Assignments -written exams
1.4	**Outline the issues concerning the availability and sustainability of the Earth's resources, including the consequences for the environment of resource exploitation and waste disposal and the human responses to environmental problems such as environmental impact assessments, management and policy**	K3	Three credits hours weekly lectures, lab and field	Quizzes -Presentations -Assignments -written exams

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.5	**Illustrate the interaction of human and Earth systems and the roles of organizations and other stakeholders in managing and regulating human impacts on the environment**	K4	Three credits hours weekly lectures, lab and field	Quizzes -Presentations -Assignments -written exams
2.0	**Skills**			
2.1	**Evaluate the methods of acquiring, interpreting and analysing information relating to the environment, with a critical understanding of the appropriate contexts for their use, and apply these methods to enable monitoring and management of natural and human-induced environmental changes.**	S1	Three credits hours weekly lectures, lab and field	Quizzes -Presentations -Assignments -written exams
2.2	**Analyze and interpret information and communicate any findings, both orally and in writing, in a coherent manner**	S2	- Three credits hours weekly lectures, lab and field -Tutorials	-Presentations -Assignments -written exams
2.3	**Plan a research study, and perform the work using the proper research tools**	S3	- Three credits hours weekly lectures, lab and field -Tutorials	-Presentations -Reports
2.4	**Employ the appropriate independent research skills for the investigation of issues in environmental science, including experimental design, fieldwork, survey and monitoring, laboratory work, statistical testing and spatial representation of data**	S4	- Three credits hours weekly lectures, lab and field -Tutorials	-Presentations -Reports
3.0	**Values, autonomy, and responsibility**			
3.1	**Show the ability to perform the assigned work independently and collaborate with**	V1	Group discussions	-Presentations -Reports

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	interdisciplinary teams to achieve common goals.			
3.2	**Share in discussion of scientific issues professionally, and present research data effectively through different modes and for varied audiences.**	V2	Group discussions	-Presentations -Reports
3.3	**Show accountability and share positively in scientific discussions and decision-making processes.**	V3	Group discussions	Presentations -Reports
3.4	**Adhere to the moral and ethical issues relating to environmental sciences, including scientific examination of the implications of sustainability relating to natural resources and sustainable development.**	V4	Three credits hours weekly lectures, lab and field Tutorials	-Presentations -Assignments -written exams

C. Course Content

No	List of Topics	Contact Hours
1.	**Introduction, Syllabus.** **Introduction and basic concepts of environmental science.**	6
2.	**Introduction to Principles of Ecology**	6
3.	**Biodiversity Conservation**	6
4.	**Introduction to Global Environmental Issues**	3
5.	**Technical Skills for Environmental Scientists**	3
6.	**Experimental Design and Analysis**	3
7.	**Living with Climate Change**	3
8.	**Sustainability**	3
9.	**Environmental Monitoring & GIS**	3
10.	**Innovations in Energy**	3
11	**Communication and Reporting** **Writing Research Reports** **Presenting Findings and Data** **Peer Review and field trips**	6
Total		45

No	List of laboratory and practical Topics	Contact Hours
1.	Introduction, Syllabus and Equipment for measuring physical factors	4
2.	Sampling methods (may be in field trip)	4
3.	Biodiversity	4
4.	Discussion & presentation of a scientific report on the pitfall trap method	2
5.	Isobar, isotherm and global warming	2
6.	Acidity	2
7.	Salinity	2
8.	Alkalinity	2
9.	Hardness	2
10.	Soil analysis	2
11	Population Growth (may be in field trip)	2
12	Environmental orientation to design a city	2
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm exam 1	Around 4th - 5th week	15%
2.	Midterm exam 2	Around 7th - 8th week	15%
3.	Quizzes, Participation, Attendance	During the semester	10%
4.	Lab reports	During the semester	5%
5.	Lab Exam	15th week	15%
6.	Final Exam	16th week	40%
Total			100%

* 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	C.H. Walker, R.M. Sibly, S.P. Hopkin, D.B. Peakall (2006) PRINCIPLES OF ECOTOXICOLOGY, Fourth Edition.
Supportive References	
Electronic Materials	
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom and laboratories
Technology equipment (Projector, smart board, software)	Projector, smart board
Other equipment (Depending on the nature of the speciality)	Environmental-related instruments

F. Assessment of Course Quality

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

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**Head of Biology Department**
REFERENCE NO.	

DATE	