Course Specifications

Course Title:	**Environmental Pollution**
Course Code:	**68024191-2**
Program:	**BSc Biology.**
Department:	**Basic Sciences Department**
College:	**Adham University College**
Institution:	**Umm Al-Qura university**
Year	**1439-1440**

Table of Contents

A. Course Identification

1. Credit hours: **2**
2. Course type **a.** University ☐ College ☐ Department ■ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: **Level 7/ 4th Year.**
4. Pre-requisites for this course (if any)**:** **Animal Ecology (68023352-3).**
5. Co-requisites for this course (if any)**:**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		70 %
2	**Blended**		
3	**E-learning**		10 %
4	**Correspondence**		10 %
5	**Other**		10 %

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	**24**
2	**Laboratory/Studio**	**12**
3	**Tutorial**	**6**
4	Practical/Field work/Internship	**6**
5	**Others** (specify)	**36**
	Total	**84**
Other Learning Hours*		
1	**Study**	
2	**Assignments**	
3	**Library**	
4	**Projects/Research Essays/Theses**	
5	**Others** (specify)	
	Total	

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

The course deals with the definition of pollution and pollutants, principles of environmental pollution and its relationship to the ecosystem, types of air, water, soil and food pollution, physical contaminants (heat, noise and radiation), ways of pollutant control, biological effects of pollutants; global and local pollutions. This course is designed to study types of pollutants including gases, chemicals petroleum, noise, light, global warming and radiation as well as pollutant flow and recycling, principles of environmental pollution such as air, water and soil, in addition to environmental factors and interactions between pollutants and their hazards on different ecosystems, population dynamics in different polluted ecosystems such as, waste dumps regions and sewage or industrial waste regions, desalination stations and drainage areas of sewage in to the Red Sea, and safe disposal of pollutants. After completing the course, the student should be able to:

- **Understand major concepts and terminology in the field of environmental pollutants, its interconnections and direct damage to the wildlife, in addition to, human communities and ecosystems.**
- **Understand and investigate how empirical evidence supports to refute or to control the environmental problems especially disasters.**

2. Course Main Objective

Intended Learning Outcome:

- **The course will provide students with an understanding and appreciation of the complex interactions of man, health, and the environment. It will expose students to the multi-disciplinary nature of environmental health sciences; the information and tools required to assess environmental quality as it relates to human and ecosystem health. The negative impacts of environmental degradation can have on human, wildlife and other bioreceptors in aquatic and terrestrial ecosystems; and the control measures required to minimize, manage and/or eliminate specific environmental problems.**
- **The course will address environmental stressors and pollution, their sources in the natural and workplace environments, their modes of transport and transformation, their ecological and public health effects, and existing methods for environmental disease prevention and remediation.**

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	- To differentiate between the different methods of pollution. - Be aware of the risks of various environmental and extent of human intervention to reduce them. - understands the importance of the use of nonpolluting sources of energy to the environment. - To differentiate between persistent organic chemicals and inorganic sources of water. - Be aware of the proper ways to deal with the environment	
1.2		
1.3		
1...		

	CLOs	Aligned PLOs
2	**Skills :**	
2.1	**Cognitive Skills:** (i) Description of cognitive skills to be developed The student is able to propose solutions to some problems	
2.2	**Interpersonal Skills and Responsibility** - Description of the interpersonal skills and capacity to carry responsibility to be developed - The ability to assume responsibility for self-education - Work effectively in a group - The ability to express their own opinion without fear or hesitation and improves their self-confidence - Ability to lead a team to work	
2.3	**Communication, Information Technology and Numerical Skill** **The student is able to propose solutions to some problems:** - Skills, oral and written communication - Using computer and search the Web for information sources - Use a power point for Proposals Group - The use of statistical methods in the analysis of information - To use computer and internet.	
2.4	**Psychomotor Skills (if applicable)** - Description of the psychomotor skills to be developed and the level of performance required - Collecting samples from environment - Examining samples in lab	
3	**Competence:**	
3.1	- Developing oral presentations.	
3.2	- Communicating personal ideas and thoughts.	
3.3	- Work independently and as part of a team to finish some assignments.	
3...	- Communicate results of work to others	

C. Course Content

No	List of Topics	Contact Hours
1	The concept of the environment and the introduction of environmental regulations and the impact of human	2
2	Water resources and pollution of different types of pollution (industrial - agricultural- thermal- sewage) and the use of micro-organisms as evidence of pollution	2
3	Poisoning water bodies due to flourishing of toxic algae species and its	2

	impact on human and animal. Underground water pollution	
4	Water pollution with oil residues and heavy metals and the bioaccumulation phenomenon	**2**
5	Med term Exam	**2**
5	Atmosphere (air pollution, acid rain and damages, the erosion of the ozone layer, global warming)	**2**
6	Soil pollution sources , effects and solutions	**2**
7	Pharmaceutical pollutants , cosmetics, personal hygiene and its impact on the environment and ways of safe disposal	**2**
8	Medical and pathological wastes , the proper way of getting rid of it.	**2**
9	Food sources in the world and the problems of food contamination and ways to solve them	**2**
11	Discussion of students reports on different environmental problems	**2**
12	Revision	**2**
13	Final exam	**2**

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**		
1.1 1.2 … .	- **To differentiate between the different methods of pollution.** - **Be aware of the risks of various environmental and extent of human intervention to reduce them.** - **understands the importance of the use of nonpolluting sources of energy to the environment.** - **To differentiate between persistent organic chemicals and inorganic sources of water.** - **Be aware of the proper ways to deal with the environment**	- Lectures and - student research In-class lecturing where the previous knowledge is linked to the current and future topics. Homework assignments. Discussions (connecting what they learn in the class and applying this information in laboratory). Handout of lecture notes for each topic	Homework, exams and research papers
2.0	**Skills**		
2.1 2.2 …	Developing oral presentations Communicating personal ideas and thoughts. Work independently and as part of a team to finish some assignments.	Application of essential scientific techniques through lectures, classes and essays. □ Small group discussion. □ Ask the students to make small search	Course work reports. Evaluation of the topics prepared by students according to the content, arrangement, and covering of the topic. Midterm and final exams.

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		project during the semester. Making connections between different topics across the course.	Checking the homework assignments
3.0	**Competence**		
3.1	Use information and communication technology	Oral presentations. Internet search assignments and essays. Incorporating the use and utilization of computer in the course requirements. Students will be asked for delivering a summary regarding certain topics related to the course.	Evaluation of student essays and assignments. Evaluating the laboratory written reports. Marks given to for good reports and presentations Evaluating during the discussion in lecture and reports. Part of the grad is put for student's written participation
3.2	Use IT and communication technology in gathering and interpreting information and ideas		
…	Use the internet as a means of communication and a source of information.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	**Home works, search or presentation**	**4th and 8th weeks**	**10 %**
2	**Midterm "Written Test (1)"**	**8th week**	**30%**
3	**Final Exam "Practical Test"**	**15th week**	**20%**
4	**Final Exam Written Test**		**40%**
5			
6			
7			
8			

***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 :

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	**Lecture notes prepared by faculty member responsible for the present course**. Friis, Robert H. *Essentials of Environmental Health*. Jones and Bartlett, Inc., Sudbury, MA. ISBN No. 0-7637-4762-9

Essential References Materials	Hill, Marquita K., *Understanding Environmental Pollution, 2nd Edition*. Cambridge University Press, Cambridge, UK. ISBN No. 0-5218-2024-3
Electronic Materials	**https://en.wikipedia.org/wiki/Chordate** **http://www.ucmp.berkeley.edu/chordata/chordata.html** **http://faculty.collegeprep.org/~bernie/sciproject/project/Kingdoms/Animal%20Kingdom%20-%205/Local%20copy/classification/chordata.html**
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms, laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	data show
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods

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	
Reference No.	

Date	