



Course Specification

— (Postgraduate Programs) عبد المحسن بن أبي طالب عزيمه بالارحمه رحمتي الناصر

Course Title:	Environmental Sustainability
Course Code:	BIO-6132
Program:	Master of Science in Applied Biology: Industrial and Environmental Biotechnology & sustainability
Department:	Biology
College:	Science
Institution:	Imam Mohammad Ibn Saud Islamic University
Version:	1
Last Revision Date:	Pick Revision Date.

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A. General information about the course:

1. Course Identification:

1. Credit hours: 2 (Lecture 2 + Lab 0)

2. Course type

A. ☐ University ☐ College ☐ Department ☒ Track

B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: (Level 1 / first year)

4. Course general Description:

Sustainability is a compelling notion rooted on the idea that environmental, economic, and social issues are interconnected. The key to finding answers is in comprehending the interconnection between these systems and recognizing how human actions have compromised the integrity of the natural systems we depend on. This course examines a range of critical sustainability concerns and provides illustrations of how they are being tackled.

This course acquaints students with the notion of environmental sustainability and its use in resolving practical issues. This study examines the interconnections of natural, rural, industrial, and urban ecosystems, and investigates the influence of human activities on nature. The course also examines how environmental sustainability can be employed to tackle environmental, economic, and social concerns in a holistic manner.

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

None

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

None

7. Course Main Objective(s):

The objective of this course is to familiarize students with the concept of environmental sustainability in order to enable them to:

- Define the meaning of environmental sustainability;
- Assess the influence of physical, economic, social,



- and technological factors on the environment; • Provide an elucidation of fundamental scientific elements related to environmental issues; • Describe the necessary procedures for establishing a society that is environmentally sustainable; • Apply the principles of sustainability to practical challenges in the real world.

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	30
2.	Laboratory/Studio	0
3.	Field	0
4.	Tutorial	0
5.	Others (specify).....	0
	Total	30

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	Describe the principles of environmental		Lecture and take-home research assignment	Quizzes, midterm exam and final exam

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	sustainability, encompassing factors that influence it, consequences, objectives, and obstacles.			
1.2	Outline the theoretical foundation that supports environmental sustainability concerns.		Lecture and take-home research assignment	Quizzes, midterm exam and final exam
1.3	Recognize the legislative and regulatory measures pertaining to environmental sustainability concerns.		Lecture and take-home research assignment	Quizzes, midterm exam and final exam
2.0	Skills			
2.1	Evaluate the influence of human actions and technological advancements on the preservation of the environment at both local and global levels, employing suitable qualitative and quantitative tools and approaches.		Take-home research assignment	Reports
2.2	Use scientific and technological expertise to create innovative solutions for environmental sustainability issues at both local and		Take-home research assignment	Reports

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	global levels. This involves applying applicable theories, analysis frameworks, and prediction scenarios or quantitative models.			
2.3	Employ information technology, geographical information systems, cartographic methods, statistical analysis, and other data analytical tools to examine and understand various forms of environmental data.		Take-home research assignment	Reports
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate effective communication of knowledge, ideas and solutions.		Lecture and take-home research assignment	Quizzes, midterm exam, project presentations, and final exam
3.2	Develop proficient project management and organizational abilities by engaging in both independent work and collaborative teamwork.		Lecture and take-home research assignment	Quizzes, midterm exam, project presentations, and final exam
3.3	Use critical thinking principles to analyze intricate sustainability-related issues.		Lecture and take-home research assignment	Quizzes, midterm exam, project presentations, and final exam

C. Course Content:

No	List of Topics	Contact Hours
1.	Sustainability and Global Environmental Outlook	3
2.	Understanding the Sustainability Problem	3
3.	Sustainability as a Solution	3
4.	Climate Change & Sustainable Energy	3
5.	Biodiversity Loss & Sustainable Food	3
6.	Air Pollution & Sustainable Transport	3
7.	Water Pollution & Sustainable Manufacturing	3
8.	Resource Depletion & Sustainable Materials	3
9.	Waste & Sustainable Settlements	3
10.	Sustainable Economy & Government	3
11.	Sustainable Society	3
12.	Conclusions	3
Total		30

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm 1	5 th week	20%
2.	Midterm 2	10 th week	20%
3.	Quizzes, Participation, presentations, reports, attendance	During the semester	20%
4.	Final Exam	16 th 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	Dhiman, S. (2023). Sustainable Development and Environmental Stewardship: Global Initiatives Towards Engaged Sustainability (1st ed.). Springer Cham. https://doi.org/10.1007/978-3-031-28885-2
	Modak, P. (2017). Environmental Management towards Sustainability (1st ed.). CRC Press. https://doi.org/10.1201/9781315156118

Supportive References	Laurent, É. (2023). Toward Social-Ecological Well-Being: Rethinking Sustainability Economics for the 21st Century (1st ed.). Palgrave Macmillan Cham. https://doi.org/10.1007/978-3-031-38989-4
Electronic Materials	Web-based environmental sustainability tools and software
Other Learning Materials	None

2. Educational and Research Facilities and Equipment Required:

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

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	Peer Reviewer	Indirect
The extent to which CLOs have been achieved	Program Leaders	Direct
Other		

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

Assessment Methods (Direct, Indirect)



G. Specification Approval Data:

-	BIOLOGY DEPARTMENT COUNCIL
REFERENCE NO.	23
DATE	23/8/1445

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