هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	*Principles of Environmental Sustainability*
Course Code:	*BIO1201*
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:					
2 Credit (2 Hours - Theory).					
2. Course type					
A.	☐University	☒ College	☐Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (3rd Level / 2nd year)					
4. Course general Description:					
The course is designed to provide theory and fundamentals of sustainability principles. It covers principles of sustainable development and the basic sustainability principles relative to environmental and population issues such as population growth; natural resources; pollution and its environmental impact; waste management; climate change; conservation of biological diversity; ecosystem threats; environmental justice; economics sustainability and policy.					
5. Pre-requirements for this course (if any)**:**					
None					
6. Co-requirements for this course (if any)**:**					
None					
7. Course Main Objective(s):					
At the end of this course the students should be able to: - Provide students with a comprehensive grounding in the theories and fundamentals of environmental sustainability principles. - Introduce the main issues in environmental sustainability subject to research. - Develop concern and raise awareness about the importance of environmental sustainability and protection. - Develop and improve skills in evaluating methods for environmental sustainability.					

2. Teaching mode (mark all that apply)

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

No	Mode of Instruction	Contact Hours	Percentage
	• E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
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	Explain the concepts and theories of environmental sustainability and sustainable development.	K1	-Lectures. -Class discussion. -Group discussion. -Case studies.	-Quizzes -periodic examination. -Final examination. -Class discussion and participation. - Homework (Problem-solving).
1.2	Describe the relationship between human population growth and the related issues of	K2	-Lectures. -Class discussion. -Group discussion. -Homework assignments. -Case studies.	-Quizzes -periodic examination.

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	global environmental quality and stability, such as pollution and climate change.			-Final examination. -Class discussion and participation. -Homework assignments.
2.0	**Skills**			
2.1	Use appropriate verbal and writing skills to communicate scientific information on issues related to the environment, sustainability, and sustainable development.	S6	-Lectures. -Short essay -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.2	Compare different practices and technologies that impact global sustainability, such as those related to fossil fuel and alternative energy use.	S1	-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	Illustrate human responsibility toward the environment and the significance of incorporating	V2	-Lectures. -Short essay -Class discussion.	-Class discussion and participation.

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	environmental ethics into the daily routine.		-Group discussion.	-Homework (Problem-solving).

C. Course Content

No	List of Topics	Contact Hours
1.	**Introduction to Environmental Sustainability** - What is Environmental Sustainability? - History of the environmental movement. - Principles of sustainable development. - Threats to sustainable development.	2
2.	**Sustainability and Population Growth** - Global population growth. - Carrying capacity. - Ecological footprint.	2
3.	**Conflicting worldviews of environment and development.** - Debates surrounding sustainable development and what underlies them. - Divergence of worldviews regarding forms of development and how nature works.	2
4.	**Sustainability indicators and the integration principle** - Integrating decision-making in environmental, economic and social spheres in order to achieve sustainable development. - Significance of society, economy and environment for integrated policymaking. - Evaluation of different indicators of sustainability	2
5	**Non-renewable Energy and Renewable Energy** - Oil, Natural Gas, Nuclear, and Coal. - Solar energy, Wind energy, Hydropower, Geothermal energy, and Biogas.	2
6.	**Global Water Supplies** - Water Resources Management. - Threat to water sustainability; overuse, and mismanagement of water, water pollution, etc... - UN policy on right to the water.	2
7.	**Pollution and Environmental Health** - Air and Soil Pollution. - Soil pollution and agriculture, the future of food safety, food security, and forests. - Air pollution and impacts on human health and climate change.	2

8.	**Climate change and Greenhouse gasses.** - Global climate change, and its consequences. - Greenhouse gasses and greenhouse effects. - 'Geo-engineering' to 'fix' the climate is examined as a case study.	2
9.	**Waste Management.** - Source of wastes. - Main types of Wastes. - Phases of waste management.	2
10.	**Biodiversity and Conservation (Part1)** - Economic uses of biodiversity. - Evolution, Diversity, Species Interactions.	2
11.	**Biodiversity and Conservation (Part2).** - In situ conservation and Ex-situ conservation. - Threats to biodiversity [Ex., Invasive species]. - Convention on Biological Diversity.	2
12.	**Ecosystems and Ecosystems Threats** - Urban Ecosystems, Agroecosystems, and Environmental Justice. - Deforestation and Forest Degradation, Effects of Climate Change, Illegal Poaching and Overfishing, etc.... - Case study.	2
13.	**Population, consumption and the equity principle (Part1)** - the interplay between population trends and patterns of consumption in determining humanity's impact on the biosphere. - Review of the evidence of the scale of current global inequity.	2
14.	**Population, consumption and the equity principle (Part1)** intra- and inter-generational equity matter to sustainable development, and how to ensure them.	2
15.	**Economics, Policy, and Sustainability** - Economic sustainability; definitions, examples, importance, and issues. - Sustainability policy; definitions, examples, importance, and issues. - Case study.	2
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	During whole	10

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
		teaching period	
2.	Homework (Problem-solving)	3 to 13	5
3.	Class Participation	During whole teaching period	5
4.	1st Periodic exam	6	20
5.	2nd Periodic exam	10	20
6.	Final Theoretical Exam	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	- Dearden, P., and Mitchell, B. (2016). Environmental Change & Challenge 5th edition, Oxford University Press, Don Mills, ON, 606 pp. ISBN-10: 0199015147. - Turvey, R.A., Kurissery, S., and Pendea, I. F. (2016). Environmental Sustainability, John Wiley & Sons, Toronto, ON, 254 pp. ISBN 9781119361800.
Supportive References	- Robertson, M. (2014). Sustainability Principles and Practice. Routledge, Abingdon. ISBN: 9780415840187. - Blewitt, J. (2014). Understanding Sustainable Development, 2nd edition. Routledge, Abingdon. ISBN: 9780415707824.
Electronic Materials	None
Other Learning Materials	None

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Well-equipped classrooms that accommodate a sufficient number of students.
Technology equipment (projector, smart board, software)	Multimedia projectors and smart boards.
Other equipment (depending on the nature of the specialty)	Electronic resources.

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.
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