



UNIVERSITI TEKNOLOGI MARA

SPS461: INTRODUCTION TO ENVIRONMENTAL SCIENCE

<b>Course Name (English)</b>	INTRODUCTION TO ENVIRONMENTAL SCIENCE <b>APPROVED</b>
<b>Course Code</b>	SPS461
<b>MQF Credit</b>	3
<b>Course Description</b>	This course is designed for students whereby they will learn about aspects pertinent to environment which incorporates fields like biology, chemistry, Earth science and physics which applicable to the study of the environment. Increasing awareness of the consequences of environmental degradation and human population growth, together with the need to conserve biodiversity and ensure the sustainability of human activities had caused increasing demand for specialists capable of solving environmental problems. Hence, this course provides students with the skills to identify and understand the risks posed to the natural environment by various human activities and help them to understand how society responds to environmental crises and opportunities. Overall, this course tries to help students to have deep understanding about the environment in which the knowledge gained from this course could help the students in offering mechanisms to enhance environmental quality especially through teaching and learning process.
<b>Transferable Skills</b>	science process skills science method
<b>Teaching Methodologies</b>	Lectures, Blended Learning, Tutorial, Web Based Learning
<b>CLO</b>	CLO1 Explain the importance of environmental study for sustainable future CLO2 Critically analyze the environmental issues which includes the aspects like the causes and effects of the issues CLO3 Discuss the implications of environmental problems on social, economic and nature CLO4 Discuss the methods to conserve our environment as well as methods to curb or reduce environmental pollutions
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<b>1. Introduction to environmental science</b> 1.1) Environmental Science 1.2) Current conditions 1.3) Ecosystems Have Living and Nonliving Components 1.4) Matter in Living and Nonliving Systems 1.5) Matter and Energy	
<b>2. The biogeochemical cycles in an ecosystem</b> 2.1) The Water Cycle 2.2) The Carbon Cycle 2.3) The Nitrogen Cycle: Bacteria in Action 2.4) The Phosphorus Cycle 2.5) The Sulfur Cycle	
<b>3. Ecosystem, species, community, population &amp; interactions</b> 3.1) Kinds of Organisms Interactions 3.2) What Limits the Growth of Populations 3.3) How Do Communities and Populations Respond to 3.4) Change of Environmental Conditions	

**4. Global climate change**

- 4.1) Atmosphere
- 4.2) Atmosphere Captures Energy Selectively
- 4.3) What is Climate Change
- 4.4) Factors Contribute to Climate Change
- 4.5) Effects on Physical Environment
- 4.6) Effects on Biodiversity
- 4.7) Human Response Towards Climate Change

**5. Conservation, ecosystem functions and services, endangered species**

- 5.1) In-situ Conservation
- 5.2) Advantages & Disadvantages of In-situ Conservation
- 5.3) Ex-situ Conservation
- 5.4) Advantages & Disadvantages of Ex-situ Conservation
- 5.5) Ecosystem Functions & Services
- 5.6) Valuing Ecosystem Services
- 5.7) How Species Become Endangered
- 5.8) Species Protection
- 5.9) Delisting Process

**6. Environmental health, pollutant and toxicology**

- 6.1) Categories of Pollutant
- 6.2) Examining Cases Related to Pollution, Toxicology
- 6.3) and Environmental Health

**7. Water use and management**

- 7.1) Water
- 7.2) Kinds of Water Use
- 7.3) Water Pollution
- 7.4) Water Management & Conservation

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Documentary	20%	CLO3 , CLO4
	Discussion	Online Discussion	10%	CLO1 , CLO2 , CLO3
	Test	Test 1	15%	CLO1 , CLO2
	Test	Test 2	15%	CLO2 , CLO3

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> <li>• Cunnigham, W. P. and Cunnigham, M.A. 2002, <i>Principles of Environmental Science: Inquiry and application</i>, McGraw-Hill Boston</li> <li>• Nebel, B.J. &amp; Wright, R. T. 2002, <i>Environmental Science. The Way the World Works</i>, 8th Edition Ed., Prentice Hall New Jersey</li> <li>• Enger, e., College, D. &amp; Smith, B. F. 2004, <i>Environmental Science. A Study of Interrelationship</i>, 9th Edition Ed., McGraw-Hill Washington</li> <li>• Botkin, B. B. &amp; Keller, e. a. 2005, <i>Environmental Science. Earth as living planet.</i>, 5th Edition Ed., John Wiley &amp; Sons USA</li> </ul>
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources