



**UNIVERSITI TEKNOLOGI MARA**

**EVT427: ENVIRONMENTAL SCIENCE**

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| <b>Course Name (English)</b>   | ENVIRONMENTAL SCIENCE <b>APPROVED</b>  |
| <b>Course Code</b>   | EVT427   |
| <b>MQF Credit</b>  | 3  |
| <b>Course Description</b>  | This course will interactively engage students cognitively and scientifically in areas of environmental science. Students will state concept, principles and sources of the environment, atmosphere, water (aquatic), land (soil) and waste. The chemistry, formation, effects and cycles of pollutants will also be explained. The designated lecture session is used to discuss issues related to the environment and identify ways to control environmental problems in terms of technologies and management. Lecture sessions employ a mixture of lectures and active learning (self and peer discussions). The outcomes shall be assessed through a variety of tools that include the traditional paper examination, assignments, field visit report, presentation, informal interviews, classroom engagement and online quiz (blended learning). |
| <b>Transferable Skills</b>   | Able to present information orally and be a team player.   |
| <b>Teaching Methodologies</b>  | Lectures, Case Study, Discussion, Presentation   |
| <b>CLO</b>   | CLO1 State the concepts and principles in the study of environmental science<br>CLO2 Analyse current environmental issues using environmental science knowledge<br>CLO3 Write a complete report on a selected environmental issue<br>CLO4 Present verbally a selected environmental issue.   |
| <b>Pre-Requisite Courses</b>   | No course recommendations  |
| <b>Topics</b>  |  |
| <b>1. Introduction to Environmental Science</b><br>1.1) Definition and goals of environmental science<br>1.2) Cultural changes and environment<br>1.3) Environmental problem and sustainability                                      |  |
| <b>2. Human Population and Its Impact</b><br>2.1) Human population growth<br>2.2) Factors influencing human population size<br>2.3) Population age structure<br>2.4) Slowing human population growth                                 |  |
| <b>3. Matter, Energy and Life</b><br>3.1) Elements of life<br>3.2) Energy for life<br>3.3) Species and ecosystem<br>3.4) Material cycles and life process  |  |
| <b>4. Biodiversity</b><br>4.1) Definition of biodiversity<br>4.2) Types of biodiversity<br>4.3) Issues and management of biodiversity  |  |
| <b>5. Non-renewable Resource-Mineral</b><br>5.1) Nature and formation of mineral resources<br>5.2) Finding and removing non-renewable mineral resources<br>5.3) Environmental effect of extracting , processing and using mineral    |  |
| <b>6. Energy and Sustainability</b><br>6.1) Evaluating energy resources<br>6.2) Non-renewable energy: nuclear, fossil fuel-coal, oil and natural gas.<br>6.3) Renewable energy: solar, wind, hydro, geothermal, hydrogen and biomass |  |

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| <p><b>7. Air Pollution</b><br/> 7.1) The atmosphere<br/> 7.2) Types and sources of air pollution<br/> 7.3) Effect of air pollution on living organism<br/> 7.4) Preventing and reducing air pollution.</p>  |
| <p><b>8. Water Pollution</b><br/> 8.1) Types and sources of water pollution<br/> 8.2) Effect of water pollution<br/> 8.3) Water pollution of stream, lake and ocean<br/> 8.4) Preventing and reducing water pollution</p>   |
| <p><b>9. Solid and Hazardous Waste</b><br/> 9.1) Wasting resources<br/> 9.2) Producing less waste and pollution<br/> 9.3) Reuse<br/> 9.4) Recycling<br/> 9.5) Achieving low-waste society</p>   |
| <p><b>10. Soil Pollution</b><br/> 10.1) Definition and types of soil pollution<br/> 10.2) Causes of soil pollution<br/> 10.3) Controlling or reducing soil pollution</p>  |
| <p><b>11. Economics, Environment and Sustainability</b><br/> 11.1) Economic resources and system and environmental problems<br/> 11.2) Monitoring economic and environmental progress<br/> 11.3) Harmful external cost and full cost pricing<br/> 11.4) The economics of pollution control and resource management<br/> 11.5) Market force to improve environmental quality</p> |
| <p><b>12. Group Oral Presentation</b><br/> 12.1) n/a</p>  |
| <p><b>13. Group Oral Presentation</b><br/> 13.1) n/a</p>  |

| Assessment Breakdown  | %      |
|-----------------------|--------|
| Continuous Assessment | 60.00% |
| Final Assessment      | 40.00% |

| Details of Continuous Assessment | Assessment Type | Assessment Description                                    | % of Total Mark | CLO  |
|----------------------------------|-----------------|---|-----------------|------|
|                                  | Online Quiz     | Quiz 1  | 3%              | CLO1 |
|                                  | Online Quiz     | Quiz 2  | 3%              | CLO1 |
|                                  | Online Quiz     | Quiz 3  | 4%              | CLO1 |
|                                  | Presentation    | Group Oral Presentation on a selected environmental issue | 10%             | CLO4 |
|                                  | Test            | Test 1  | 4%              | CLO2 |
|                                  | Test            | Test 2  | 4%              | CLO2 |
|                                  | Test            | Test 3  | 4%              | CLO2 |
|                                  | Test            | Test 1  | 6%              | CLO1 |
|                                  | Test            | Test 2  | 6%              | CLO1 |
|                                  | Test            | Test 3  | 6%              | CLO1 |
|                                  | Written Report  | Written report on selected environmental issue            | 10%             | CLO3 |

| Reading List       | Recommended Text                                      | Williams, P.C and Mary, A.C 2009, <i>Principles of Environmental Science Inquiry and Applications</i> , 5 Ed., McGraw-Hill Companies U.S.A. |
|--------------------|---|---|
|                    | Reference Book Resources                              | Miller, G.T and Spoolman, S.E. 2015, <i>Living in the Environment</i> , 18 Ed., Cengage Learning  |
| Article/Paper List | This Course does not have any article/paper resources |   |
| Other References   | This Course does not have any other resources         |   |