UNIVERSITI TEKNOLOGI MARA

CMT581: ENVIRONMENTAL POLLUTION

Course Name (English)	ENVIRONMENTAL POLLUTION APPROVED
Course Code	CMT581
MQF Credit	3
Course Description	An understanding of the physical, chemical and biological processes involved during contamination of air, water and soil is essential if society is going to effectively monitor and control the effects of pollution using modern technology and engineering practices. A huge range of pollutants may be released into the environment during everyday domestic, leisure, industrial and commercial activities and many of these contaminants are potentially harmful to human health and the environment. In this module, we will focus on the origins, pathways and consequences of anthropogenic pollutants in the environment as well as discussing the various approaches to pollution control and remediation. Students will use their knowledge and skills to complete assignments that will test the learning outcomes for the module.
Transferable Skills	Receiving and responding to a variety of information sources (e.g. textual, numerical, verbal, graphical) Developing the skills necessary for self-managed and lifelong learning (e.g. working independently, time management and organisation skills) Developing an adaptable and flexible approach to study and work Communicating appropriately to a variety of audiences in written, verbal and graphical forms Using the internet critically as a means of communication and a source of information Recognising and respecting the views and opinions of other team members
Teaching Methodologies	Lectures, Blended Learning
CLO	CLO1 Discuss the concept and principles of various environmental pollutions. CLO2 Analyze the technologies for various environmental pollutions control and mitigation(PLO6) (C4) CLO3 Explain the consequences, risks, and uncertainties of climate change.
Pre-Requisite Courses	No course recommendations

Topics
1. Ecosystem & Environmental Degradation 1.1) Environment 1.2) Ecosystem 1.3) Components of an ecosystem 1.4) Global environmental crises 1.5) Causes of environmental degradation
2. Pollutants 2.1) Introduction to Pollution, Pollutants 2.2) Classifications 2.3) Form of release 2.4) Existence in nature 2.5) Nature of disposal 2.6) Cause of pollutions

3. Air Pollution 3.1) Major air pollutants and their sources 3.2) Smog 3.3) Sulfurous smog 3.4) Photochemical smog 3.5) Haze 3.6) Effects of Smog
4. Air Pollution 4.1) Indoor air pollution 4.2) source of pollutants 4.3) Effects of air pollution 4.4) Control Measures 4.5) National Air Quality Monitoring
5. Water Pollution 5.1) Sources 5.2) Causes of water pollution 5.3) Water pollution control measures 5.4) Effects of water pollution
6. Water Conservation and Management 6.1) Ground water conservation 6.2) Recycling of water 6.3) Reuse of wastewater 6.4) Water treatment for domestic use 6.5) Watershed management 6.6) Government's efforts on water conservation
7. Soil Pollution 7.1) Causes of soil pollution 7.2) Source of soil pollution 7.3) Effects of soil pollution 7.4) Control measures
8. Solid Wastes 8.1) Introduction to waste and types 8.2) Solid waste 8.3) Types of solid waste 8.4) Effects of solid waste 8.5) Waste management concept 8.6) Concept of 3R 8.7) Solid waste management 8.8) waste handling and transport 8.9) Method of disposal
9. Hazardous Waste 9.1) Sources 9.2) Hazardous waste classification 9.3) Rules & regulations 9.4) Transportation & storage 9.5) Hazardous waste management strategy
10. Electronic waste 10.1) Source and health effects 10.2) Toxic Constituents 10.3) E - Waste management and disposal
11. Radioactive Pollution 11.1) Sources 11.2) Effects of radioactive pollution 11.3) Ionizing and non-ionizing radiation 11.4) Accidents at nuclear power plants 11.5) Safe disposal of nuclear wastes 11.6) Preventive/Control measures
12. Noise Pollution 12.1) Noise limits 12.2) Health impacts 12.3) Noise reduction 12.4) Prevention and control of noise pollution
13. Climate Change 13.1) Global warming 13.2) Greenhouse effect 13.3) greenhouse gases 13.4) Global warming – impacts 13.5) Methods to reduce CO2 in atmosphere 13.6) International conventions to protect environment

14. Acidification 14.1) Acid rain 14.2) Types of acid rain 14.3) Causes of acid rain 14.4) Chemistry of acid rain 14.5) Effects of acid rain 14.6) Control measures
15. Acidification 15.1) Ocean acidification 15.2) Effects of ocean acidification 15.3) Ocean acidification on calcifying ability 15.4) Impact of ocean acidification on cloud formation
16. End-of-course conclusion 16.1) N/A

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Assignment	n/a	15%	CLO3
Group Project	n/a	15%	CLO2
Test	n/a	30%	CLO1

Reading List

Recommended Text

- **Frank R. Spellman 2017, *The Science of Environmental Pollution*, 3 Ed., 15, CRC Press United States [ISBN: 9781138626607]**
- **Mark Maslin 2014, *Climate Change*, 3 Ed., Oxford University Press, USA United States [ISBN: 0198719043]**

Article/Paper List

This Course does not have any article/paper resources

Other References

- **Blog Tanja Folnovic 2015, *Environmental Pollution***
  http://blog.agrivi.com/post/environmenta l-pollutio