



UNIVERSITI TEKNOLOGI MARA

AGR605: AGRICULTURAL ENVIRONMENTAL MANAGEMENT

Course Name (English)	AGRICULTURAL ENVIRONMENTAL MANAGEMENT APPROVED
Course Code	AGR605
MQF Credit	3
Course Description	This course discusses various environmental issues related to agricultural activities such as agricultural sustainability, agriculture and ecosystem, pollution, resources, fertilizer, agricultural waste problems, remediation technologies, legislation issues, remediation technologies, environmental monitoring, modelling and control.
Transferable Skills	Communication skill Technical writing skill Problem solving skill
Teaching Methodologies	Lectures, Tutorial
CLO	CLO1 Understand the the concepts of sustainability, ecosystem, resources, environmental monitoring, legislation and social issues in the agriculture industry. CLO2 Explain the effects of agricultural activities on soil, water and air. CLO3 Differentiate various types of treatments available to reduce the pollution effects of agricultural activities for the sustainability of agriculture industry.
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction and Ecosystem 1.1) Environmental science 1.2) Sustainability 1.3) Ecosystem and energy 1.4) Ecosystem and physical environment 1.5) Ecosystem and living organisms	
2. Pollution 2.1) Air pollution 2.2) Water pollution 2.3) Soil pollution 2.4) Solid and hazardous waste	
3. Resources 3.1) Water 3.2) Soil 3.3) Mineral 3.4) Biological 3.5) Land 3.6) Food 3.7) Renewable	
4. Fertilizer and Pesticides 4.1) Soil acidity and fertilizer 4.2) Nitrate pollution 4.3) Heavy metals in water and soils 4.4) Effect on soil microbial population 4.5) Effect on soil structure and stability	

5. Agricultural Waste and Environmental Problems

- 5.1) Animal waste
- 5.2) Vegetative waste
- 5.3) Waste processing and composting
- 5.4) Waste for land application
- 5.5) Biological treatment of farm waste

6. Legislation and Social Issues

- 6.1) Environmental ethics
- 6.2) Environmental protection act
- 6.3) Air, Water and Forestry Act
- 6.4) Public awareness

7. Remediation Technologies

- 7.1) Phytoremediation
- 7.2) Phytoaugmentation
- 7.3) Biosparging
- 7.4) Bioventing
- 7.5) Aerobic and anaerobic biotransformation
- 7.6) Soil vapour extraction and air sparging
- 7.7) Vegetative crops

8. Environmental Monitoring, Modelling and Control

- 8.1) Water quality and supply
- 8.2) Air quality
- 8.3) Soil quality
- 8.4) EIA protocols

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	n/a	10%	CLO1 , CLO2 , CLO3
	Discussion	This is a group discussion assessment	5%	CLO1 , CLO2 , CLO3
	Presentation	n/a	10%	CLO1 , CLO2 , CLO3
	Quiz	n/a	5%	CLO1 , CLO2 , CLO3
	Test	Test 1	10%	CLO1
	Test	Test 2	10%	CLO1

Reading List	Recommended Text	Raven, P.H., Hassenzahl D.M. and Berg L. R. 2012, <i>Environment</i> , 8 Ed., John Wiley and Sons USA [ISBN: 978-0470-0957]
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	