UNIVERSITI TEKNOLOGI MARA

AGR701: SOIL FERTILITY MANAGEMENT

Course Name (English)	SOIL FERTILITY MANAGEMENT APPROVED
Course Code	AGR701
MQF Credit	3
Course Description	This course is designed to provide a fundamental understanding of soil fertility and management under the Malaysian conditions. After the introductory section on the concept of soil fertility, the course concentrates on some important approaches to overcoming problems of low fertility soils with particular reference to some major plantation areas. Aspects of managing soil fertility and conserving soil against its deterioration such as soil erosion, depletion of nutrients in soil and stresses occurring in soil that affect plant growth are also covered. This is followed by discussions on the management of some problem soils in Malaysia.
Transferable Skills	Communication skill, ethics and professionalism through oral presentation, discussion and readings.
Teaching Methodologies	Lectures, Discussion, Presentation, Supervision
CLO	CLO1 Construct and elaborate the concept of soil fertility in relation to crop performance and productivity CLO2 Compose and formulate on the approach in enhancing and improving the status of soil fertility in plantation CLO3 Describe the principles and constraints in overcoming fertility problems in marginal soils CLO4 Display and explain the processes that lead to soil fertility degradation CLO5 Display and explain the distribution, properties and management of some problem soils in Malaysia
Pre-Requisite Courses	No course recommendations

Topics
1. Soil Moisture and Plant Available Water 1.1) Soil water and plant nutrition 1.2) Different types of water in soil 1.3) Factors affecting soil water content 1.4) Soil water management and conservation
2. Nutrient Uptake by Plant Roots 2.1) Major and minor nutrients 2.2) Concept of nutrient availability 2.3) Factors affecting nutrient availability 2.4) Fertilizer and fertilizer use
3. Nutrient Losses From Soil 3.1) Soil erosion and nutrient loss 3.2) Nutrient leaching and soil properties 3.3) Conservation of soil fertility
4. Importance of Soil Organic Matter 4.1) Soil organic matter and Conservation of Soil Fertility 4.2) Soil organic matter management and Carbon Sequestration
5. Improving Low Fertility Soils 5.1) Soil fertility improvement - chemical approach 5.2) Soil fertility improvement - biological approach 5.3) Soil fertility improvement - physical approach

6. Management of Marginal Soils for plantation crops
6.1) Management of sandy soils
6.2) Management of acid sulfate soils
6.3) Management of peat soils
6.4) Management of steep land

Assessment Breakdown	%
Continuous Assessment	70.00%
Final Assessment	30.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Assignment	Online assignment (individual)	15%	CLO1
Assignment	Online assignment (individual)	15%	CLO5
Assignment	Online assignment (group)	20%	CLO3
Presentation	Online presentation	20%	CLO4

Reading List	This Course does not have any book resources
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources