



UNIVERSITI TEKNOLOGI MARA

AGR614: PLANT PATHOLOGY

Course Name (English)	PLANT PATHOLOGY APPROVED
Course Code	AGR614
MQF Credit	3
Course Description	This course will provide the student with concepts that form the basis for understanding the causes, mechanisms and control of plant diseases. The course emphasizes the biological and ecological aspects of pathogenesis and the role of plant diseases in plant production. Using the specific examples, the students will be introduced to all major types of plant pathogens. Students will become aware that plant pathology is a multidisciplinary branch of biology and that plant diseases are having a significant impact on society
Transferable Skills	knowledge of plant pathology for plantation management
Teaching Methodologies	Lectures, Reading Into Writing Task, Discussion, Presentation
CLO	CLO1 Learn basic principles and concepts of plant pathology CLO2 Apply principles and concepts of plant pathology to specific diseases of importance to: Agronomy, Classical, Horticulture, and Turf CLO3 Construct a 'disease cycle' for any plant disease and design a Plant Health Management Strategy based on the disease cycle CLO4 Consider multiple factors including; host and parasite biology, plant culture, epidemiology, environment, and economics when designing and implementing a plant health management strategy CLO5 Present oral and written 'arguments' based on facts and objective reasoning CLO6 Experience team activities including writing, role-playing, and discussion responses
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction 1.1) Health, Disease, and Plant Pathology 1.2) History of Plant Pathology 1.3) Significance of Plant Disease 1.4) Types of Plant Diseases	
2. Causes of plant disease 2.1) Abiotic causes 2.2) Biotic causes 2.3) Fungi 2.4) Bacteria 2.5) Viruses and viroids 2.6) Nematodes 2.7) Parasitic plants	
3. Diagnosis of plant diseases 3.1) Gross Observation: Symptoms and Signs 3.2) Culture and Microscopic Examination: Koch's Postulates 3.3) Molecular Methods	
4. Parasitism and disease development 4.1) Parasitism and Pathogenesis 4.2) Disease Triangle 4.3) Disease Cycle	

5. How pathogens attack plants 5.1) Mechanical Forces 5.2) Chemical/ Biochemical Methods
6. Effects on host physiological functions 6.1) Photosynthesis 6.2) Respiration 6.3) Translocation and adsorption 6.4) Transpiration
7. Plant defence mechanisms 7.1) Pre-existing Structural and Chemical Defence 7.2) Induced Structural and Biochemical Defence
8. Genetics of plant diseases 8.1) Types of Resistance 8.2) Gene for Gene Concepts
9. Plant disease epidemiology 9.1) Elements of Epidemic 9.2) Development and Forecasting of Epidemic
10. Plant disease control 10.1) Concept of Disease Control/Management 10.2) Avoidance/Exclusion 10.3) Eradication 10.4) Resistance 10.5) Protection 10.6) Integrated Disease Management

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	10%	CLO4 , CLO5 , CLO6
	Lab Exercise	n/a	20%	CLO3 , CLO4
	Test	Monthly Test	30%	CLO1 , CLO2 , CLO3 , CLO4

Reading List	Recommended Text	• Agrios, G.N 2005, <i>Plant Pathology</i> , Academic Press New York
	Reference Book Resources	<ul style="list-style-type: none"> • Horst, R.K 2001, <i>Wescott's plant disease handbook</i>, Kulwer Academic Publishers • Leonard, K.J & W.E. Fry 1989, <i>Plant disease epidemiology</i>, McGraw-Hill Publishing company • Robert, N.T, Mark, T.W. & Alan, S. W 2004, <i>Plant pathology: concept and laboratory exerc</i>, CRC Press • John, A.L 1998, <i>Plant pathology and plant pathogens</i>, Blackwell publishing company • Sharma, P.D 2004, <i>Plant pathology</i>, Rastologi Publication
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	