



UNIVERSITI TEKNOLOGI MARA

AGC704: INSECT SYSTEMATIC

Course Name (English)	INSECT SYSTEMATIC APPROVED
Course Code	AGC704
MQF Credit	3
Course Description	In this course, students will be introduced to a variety of topics related to classification of insect using key identification and molecular techniques. As a result, students will be expected to understand the processes behind species descriptions and definitions; to locate relevant literature; to use a variety of techniques to determine species names of assigned insects, and to recognize many of the commonly encountered for Malaysian insects.
Transferable Skills	Student will be able to verify, assess & employ the key identification and molecular technique of insect.
Teaching Methodologies	Lectures, Case Study, Discussion, Presentation, Journal/Article Critique
CLO	CLO1 Explain the concept, theories in phylogenetic for identification of major insect pest in agriculture CLO2 Describe the identification of insect pest using systematics and molecular techniques CLO3 Perform effective capabilities in leadership, autonomy, and responsibility with team members to elucidate the phylogenetic techniques for examining population structure and pesticides resistance
Pre-Requisite Courses	No course recommendations
Topics	
1. 1. Techniques of systematic insect 1.1) 1.1 Purposes, terms and rules of zoological nomenclature 1.2) 1.2 Uses and abuses of insect identification keys	
2. 2. Species concept 2.1) 2.1 Original species descriptions 2.2) 2.2 Insect distributions 2.3) 2.3 Understanding of the complexity and application of the species concept	
3. 3. Classification system 3.1) 3.1 Major pests of plantation crops 3.2) 3.2 Major pests of agricultural 3.3) 3.3 Non pests	
4. 4. Introduction to the Eukaryotic vertebrate genomes 4.1) 4.1 From genes to genomes: the emergence of genome studies 4.2) 4.2 Gene structure and expression	
5. 5. Genome organization of insects 5.1) 5.1 Genome size and other physical properties 5.2) 5.2 Chromosomal organization 5.3) 5.3 Genetic elements and sequence level organization 5.4) 5.4 Morphological and resistance markers 5.5) 5.5 Genetic mapping 5.6) 5.6 Moderate to highly repetitive sequences	
6. 6. Molecular systematic, evolution and genetics of insect populations 6.1) 6.1 Insect molecular systematics and evolution 6.2) 6.2 Molecular tools for examining population structure 6.3) 6.3 Case studies and present and future applications	

7.7. The use of phylogenetic in entomology

7.1) 7.1 Improving virulence biological control agents of pest insects

7.2) 7.2 Transfection of plants with insecticidal genes for control of crop pest insects

7.3) 7.3 Molecular mechanisms for pesticide resistance

7.4) 7.4 Insect vector competence of pathogens

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Case Study	Report on Case Study based on topic given	30%	CLO3
	Presentation	Presentation on Case Study	10%	CLO3
	Test	Test 1 (covers Topic 1-4)	30%	CLO1
	Test	Test 2 (covers Topic 5-7)	30%	CLO2

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