



## UNIVERSITI TEKNOLOGI MARA

### AGA542: TROPICAL ORCHARD MANAGEMENT

<b>Course Name (English)</b>	TROPICAL ORCHARD MANAGEMENT <b>APPROVED</b>
<b>Course Code</b>	AGA542
<b>MQF Credit</b>	3
<b>Course Description</b>	This course will deal with the orchard management of common tropical fruit crops of mango, citrus, guava, durian, rambutan, banana, starfruit, mangosteen, papaya, grape, and jackfruit. The course will cover the economic importance of the crop, soil and climatic requirements, varietal selection, propagation, planting, fertilization and irrigation, pests and diseases, pruning, harvesting, and post-harvest handling.
<b>Transferable Skills</b>	Information Management and Life Long Learning – LL3 Ability to show interest in learning new knowledge.  Entrepreneurship – KK2 Ability to plan business planning.
<b>Teaching Methodologies</b>	Lectures, Blended Learning, Field Trip
<b>CLO</b>	CLO1 Show common tropical orchard fruits cultivated in Malaysia. CLO2 Explain the principles of planting and managing of fruit crops. CLO3 Explain the procedures in setting up an orchard and problems related to the crops.
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<b>1. 1.0 INTRODUCTION</b> 1.1) 1.1 Importance of fruits: human nutrition, vitamins, and minerals 1.2) 1.2 Types of tropical fruit crops 1.3) 1.3 Types of fruit farms: orchard, plantations, estate 1.4) 1.4 Principles and objectives of setting up an orchard	
<b>2. 2.0 ORCHARD PLANNING</b> 2.1) 2.1 Importance of setting up an orchard 2.2) 2.2 Site selection 2.3) 2.3 Soil requirements: soil types, pH and topography 2.4) 2.4 Climatic requirements: temperature, rainfall, humidity, light 2.5) 2.5 Size of the orchard 2.6) 2.6 Varietal selection 2.7) 2.6.1 High yield 2.8) 2.6.2 Pests and diseases tolerance 2.9) 2.6.3 Export potential	
<b>3. 3.0 ORCHARD ESTABLISHMENT</b> 3.1) 3.1 Orchard design 3.2) 3.1.1 Factors affecting the layout 3.3) 3.1.2 Types of layout 3.4) 3.2 Procurement and pre-treatment of planting materials 3.5) 3.3 Planting systems 3.6) 3.4 Land preparation 3.7) 3.5 Soil testing 3.8) 3.6 Cover crops establishment 3.9) 3.7 Preparation and treatments of planting holes	

<b>4. 4.0 FERTILIZER MANAGEMENT</b> 4.1) 4.1 Macro and micronutrients 4.2) 4.2 Types of fertilizer and application methods 4.3) 4.3 Nutritional status: soil and leaf analysis 4.4) 4.4 Fertilizer scheduling 4.5) 4.5 Composting of plant residues
<b>5. 5.0 IRRIGATION MANAGEMENT</b> 5.1) 5.1 Water requirements and frequency 5.2) 5.2 Type of irrigation system: drip irrigation, micro sprinklers, and furrow 5.3) 5.3 Irrigation components: tank, piping system and pump
<b>6. 6.0 ORCHARD MAINTENANCE</b> 6.1) 6.1 Pruning 6.2) 6.2 Integrated Pest and Disease Management 6.3) 6.3 Weeds Management 6.4) 6.4 Plant growth regulators and flowering hormone
<b>7. 7.0 HARVESTING AND POST-HARVEST HANDLING</b> 7.1) 7.1 Ripening index 7.2) 7.2 Ripening hormone 7.3) 7.3 Post-harvest treatment 7.4) 7.4 Packaging and processing
<b>8. 7.0 CURRENT ISSUES AND PROBLEMS IN ORCHARD MANAGEMENT</b> 8.1) n/a

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment				
	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Concept Map	10%	CLO1
	Case Study	n/a	20%	CLO3
	Presentation	Video Presentation	20%	CLO2

Reading List	Reference Book Resources	<ul style="list-style-type: none"> <li>• Mazumdar, B.C. 2004, <i>Principles and Methods of Orchard Establishment</i>, Daya Publishing House Delhi, India</li> <li>• Othman Yaakob 1980, <i>Fruit Production in Malaysia</i>, Universiti Putra Malaysia Serdang, Selangor</li> <li>• Warren, W. and L.I. Tettoni 1997, <i>Tropical Garden Plants</i>, Thames &amp; Hudson</li> <li>• Poincelot, R.P. 2004, <i>Sustainable Horticulture</i></li> </ul>
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	