



UNIVERSITI TEKNOLOGI MARA

AGA452: INTRODUCTION TO HORTICULTURE

Course Name (English)	INTRODUCTION TO HORTICULTURE APPROVED
Course Code	AGA452
MQF Credit	3
Course Description	This course is designed to introduce students to overview area and concepts involved in horticulture. Students will be introduced branches in horticulture, plant classification in horticulture, plant growth, metabolism and requirement, propagation technique and practices through theoretical and field work. This course will strengthen the students with a strong interest in horticulture by exposing them on technology and the current trends involve in the horticulture industry.
Transferable Skills	Skills and how they are developed and assessed, Project and practical experience and Internship Demonstrate ability to identify and articulate self skills, knowledge and understanding confidently and in a variety of context.
Teaching Methodologies	Lectures, Blended Learning, Seminar/Colloquium, Demonstrations
CLO	CLO1 Describe the field of horticulture and its classification, varietal characteristics and economic importance of horticultural plants.(C3,PLO1) CLO2 Display the common technology and practices in horticulture. (P3,PLO2) CLO3 Demonstrate thoughts and ideas on current issues in horticulture industry in Malaysia.(A3,PLO4) CLO4 Explain the field of horticulture and its classification, varietal characteristics and economic importance of horticultural plants.(C5,PLO1)
Pre-Requisite Courses	No course recommendations
Topics	
1. 1.0 INTRODUCTION TO HORTICULTURE 1.1) 1.1 Definition and branches of horticulture (overview). 1.2) 1.2 Scope and economic importance of horticulture: Local to Global 1.3) 1.3 Careers and opportunities. 1.4) 1.4 The overview of horticulture industry and current issues	
2. 2.0 HORTICULTURE BIOLOGY 2.1) 2.1 Classification of plants in horticulture 2.2) 2.2 Biology classification: Binomial nomenclature, genus, species, variety, cultivar, hybrid 2.3) 2.3 Classification by use 2.4) 2.4 Classification by climatic requirement 2.5) 2.5 Classification by stem and leaf texture 2.6) 2.6 Classification by growth habit 2.7) 2.7 Classification by life span	
3. 3.0 PLANT GROWTH AND METABOLISM 3.1) 3.1 Plant parts and their function 3.2) 3.2 Factors that affect plant growth 3.3) 3.2.1 Photosynthesis 3.4) 3.2.2 Transpiration 3.5) 3.2.3 Respiration 3.6) 3.3 Photoperiodism 3.7) 3.4 Plant hormones and plant growth regulators 3.8) 3.5 Plant nutrients: Functions of macronutrient and micronutrient	

4. 4.0 PLANT GROWTH REQUIREMENTS 4.1) 4.1 Basic need of plants 4.2) 4.1.1 Carbon dioxide 4.3) 4.1.2 Water 4.4) 4.1.3 Light 4.5) 4.1.4 Nutrients 4.6) 4.2 Environmental factors affecting plant growth and development 4.7) 4.2.1 Light 4.8) 4.2.2 Temperature 4.9) 4.2.3 Nutrient Supply 4.10) 4.2.4 Water 4.11) 4.2.5 Moisture
5. 5.0 PLANT PROPAGATION TECHNOLOGY 5.1) 5.1 Sexual propagation 5.2) 5.1.1 Seed resources, treatment and storage of seeds and viability test 5.3) 5.1.2 Seed germination 5.4) 5.1.3 Seed and bud dormancy 5.5) 5.1.4 Flowering: Self and cross pollination 5.6) 5.1.5 Fruit development 5.7) 5.2 Asexual 5.8) 5.2.1 Separation and division 5.9) 5.2.2 Cutting, grafting, budding, layering, micropropagation
6. 6.0 HORTICULTURAL TECHNOLOGY AND PRACTICES 6.1) 6.1 Nursery: Establishment and management of nursery 6.2) 6.2 Soilless media 6.3) 6.3 Controlling plant environment 6.4) 6.4 Training, pruning and pollarding of plant 6.5) 6.5 Pest and disease control 6.6) 6.6 Fertilizer application 6.7) 6.7 Harvesting, post-harvest handling and marketing of horticulture plant
7. 7.0 CURRENT TRENDS IN HORTICULTURE INDUSTRY 7.1) 7.1 Olericulture: Aeroponic, Hydroponic and Soilless 7.2) 7.2 Ornamental horticulture: Topiary, Bonsai, Indoor plant and Terrarium 7.3) 7.3 Floriculture: Floral Design, Cut flower, dry flower and pot pourri 7.4) 7.4 Pomology 7.5) 7.5 Landscape industry: Housing area, urban landscape, sports and recreational 7.6) Parks.
8. Test 8.1) Test 1 and Test 2
9. Final Exam 9.1) Topic 2 - Topic 7

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Group Project	student will handle the event in horticultural industry and present their works during the event.	20%	CLO3
	Test	Test 1	10%	CLO1
	Test	Test 2	10%	CLO1
	Writing Test	Test in lab, identify tools, types of fertilizer, and fungicides,	20%	CLO2

Reading List	Recommended Text	• Richard, N. Arteca 2015, <i>Introduction to Horticultural Science</i> , Second Ed., Cengage USA
	Reference Book Resources	<ul style="list-style-type: none"> • Shry, C. Jr and Reiley, E. 2011, <i>Introductory Horticulture</i>, Eight Edition Ed., Cengage Learning • Charles, B.S 2000, <i>Introduction to Horticulture</i>, Interstate Publisher • George Acquaah 2011, <i>Horticulture: Principle and Practice</i>, Pearson Education • Adams. C.R. Bamford, K.M. Early, M.P 2012, <i>Principle of Horticulture</i>, Fifth Edition Ed., Elsevier Ltd. • Gail, M.L. 2007, <i>Horticulture</i>, Infobase Publishing
Article/Paper List	This Course does not have any article/paper resources	
Other References	• n/a Shry, C.Jr. and Reiley, 2011, <i>Introductory Horticulture, Eight Edition</i> , Cengage Learning	