



UNIVERSITI TEKNOLOGI MARA

AGA212: ANNUAL HERBAL PLANT PRODUCTION

Course Name (English)	ANNUAL HERBAL PLANT PRODUCTION APPROVED
Course Code	AGA212
MQF Credit	3
Course Description	This course will interactively engage students cognitively on major industrial annual herbal crops in pharmaceutical industry. Students will identify, discuss and explain economic importance of the above crop as well as the agronomic practices. Topics such as crop protection and after harvest activities including processing of products of the above crops will also be part of the interactive learning Process
Transferable Skills	Knowledge gained from lectures via discussions with lecturers. Practical experience in Field Work and Project.
Teaching Methodologies	Lectures, Blended Learning, Discussion, Peer Practice
CLO	CLO1 Discuss the major varietal characteristics of the industrial crops as well as their production and commercial potential. CLO2 Discuss on current issues in major annual herbal plant production in Malaysia through oral presentation and written assignments. CLO3 Apply the techniques of planting, maintenance and harvesting of the above crops and be able to relate the biotic and abiotic factors to demonstrate the postharvest system and processing techniques of the crops discussed.
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction 1.1) Definition of annual herbs 1.2) Major annual herb crop in Malaysia: 1.3) i. Hibiscus sabdariffa - Roselle 1.4) ii. Abelmoschus esculentus - Ocra 1.5) iii. Ocimum basilicum - Basil 1.6) vi. Cassia angustifolia - Senna	
2. Soil and Climatic Requirements 2.1) Types of soil 2.2) Topography 2.3) Physical and chemical properties 2.4) Relative humidity, sunlight and temperature	
3. Propagation 3.1) Methods of propagation 3.2) Budding, grafting and cutting 3.3) Nursery management	
4. Field Planting 4.1) Land preparation 4.2) Planting density	
5. General Maintenance 5.1) Fertilizer application 5.2) Irrigation 5.3) Integrated pest management (Insect, disease and weed) 5.4) Special requirement (pruning, shading, etc)	

6. Harvesting

6.1) Maturation time

6.2) Harvesting technique

7. Methods of Processing and Packaging

7.1) Post harvest handling

7.2) Processing (manual, milling etc)

7.3) Final herbal production

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Video presentation	20%	CLO3
	Group Project	Project paper at least 2 persons in a group	20%	CLO2
	Test	Test	20%	CLO1

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> • Herbal Medicinal Research Centre 2002, <i>Compendium of Medicinal Plants used in Malaysia</i>, 1 and 2 Ed., Institute for Medical Research • Khadijah Hussin dan Mohd Ruzi Abdul Rahman 2006, <i>Anatomical Atlas of Malaysian Medicinal Plants</i>, 2 Ed., UKM • Muhammad Zakaria dan Mustafa Ali Mohamad 2010, <i>Traditional Malay Medicinal plants</i>, Institut Tejemahan Negara Malaysia • Shukla, R.S. and Chandel, P 2005, <i>Textbook of Plant Ecology: Ethnobotany and Soil Science [Paperback]</i>, 10 Ed., S Chand & Co Ltd; • Swami, S., Dutt, H.D. and Vasisht, R.K 2006, <i>Compendium of Medicinal and Aromatic Plant. Asia</i>, 2 Ed. • Wong J. 2009, <i>Grow Your Own Drugs: Easy Recipes for Natural Remedies and Beauty Treats Collin</i>, 1 Ed.
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources