



UNIVERSITI TEKNOLOGI MARA

AGA296: PROCESSING AND PACKAGING OF HERBAL PRODUCTS

Course Name (English)	PROCESSING AND PACKAGING OF HERBAL PRODUCTS APPROVED
Course Code	AGA296
MQF Credit	4
Course Description	The course contains fundamental and practical aspects of plant material handling, extraction, separation/purification and product quality. It will provide students with skills and knowledge relevant to the production for therapeutic, cosmetic applications, manufacturing practices, and dietary regulations. Hands-on demonstration on processing techniques utilising semi-industrial scale process equipment are also conducted.
Transferable Skills	Knowledge gained from lectures via discussions with lecturers and practical skills from Laboratory Work and communication skills from project presentation.
Teaching Methodologies	Lectures, Lab Work, Practical Classes, Discussion, Directed Self-learning , Project-based Learning
CLO	CLO1 Explain the fundamental and practical aspects of raw herbal handling. CLO2 Illustrate the history of herbal product, herbal preparation, and regulator dilemma of herbs and risk of herbal preparations. CLO3 Apply various laboratory techniques relating to the extraction procedure and preparation of internal and external product of herbal products.
Pre-Requisite Courses	No course recommendations
Topics	
1. Maintenance of Building Facilities and Equipment 1.1) Introduction of building facilities and equipment 1.2) Maintenance of building facilities 1.3) Maintenance of equipment 1.4) Maintenance of general items 1.5) Maintenance of processing equipment	
2. Primary Processing of Raw Material 2.1) Introduction of processing and raw materials 2.2) Types of processing methods 2.3) Primary processing methods 2.4) Preparation of herbs raw materials for processing	
3. Extraction Procedures 3.1) Definition of extraction 3.2) Purpose of extraction 3.3) Techniques of extraction 3.4) Steps involved in herbs extraction	
4. Controlling Quality and Purity of Extract 4.1) Introduction and definition of quality and purity of extract 4.2) General consideration of quality and purity of extract 4.3) Factors that affect quality and purity of extract	
5. Spray Drying 5.1) Definition of spray drying 5.2) Uses of spray drying 5.3) Advantages and disadvantages of spray drying 5.4) Effect of spray drying 5.5) Procedures of spray drying	

6. Herbal Product Formulation

- 6.1) Introduction and definition of herbal formulation
- 6.2) Purpose of herbal formulation
- 6.3) Uses of herbal formulation
- 6.4) Contamination of herbal formulation
- 6.5) Types of herbal product

7. Packaging of Product

- 7.1) Introduction of herbs product's packaging
- 7.2) Types of herbs packaging
- 7.3) Advantages and disadvantages of various types of packaging
- 7.4) Factors of packaging selection
- 7.5) Procedures of herbs packaging

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Presentation	VIRTUAL PRESENTATION	10%	CLO3
	Test	online test	20%	CLO1
	Written Report	n/a	30%	CLO2

Reading List	Recommended Text
	<ul style="list-style-type: none"> • Heinrich, M. et al 2004, <i>Fundamentals of pharmacognosy and phytotherapy.</i>, Churchill Livingstone [ISBN: 044307 13221] • Andrew Pengelly 2004, <i>Constituents of Medicinal Plants</i>, Cab International [ISBN: 0851998070] • James A. Duke. 1998, <i>The green pharmacy: The ultimate compendium of natural remedies from the world's foremost authority on healing herbs</i>, St. Martin's Press • Ministry of Health Malaysia 2007, <i>National Policy of Traditional and Complementary Medicine.</i>, 2nd Edition Ed. • Phyllis A. Balch. 2002, <i>Prescription for herbal healing</i>, Avery, New York, • WHO/EDM/TRM/2000. 1 2000, <i>General guidelines for methodologies on research and evaluation of traditional medicine.</i>, Geneva, World Health Organization • Institute For Medical Research 2002, <i>Compendium Of Medicinal Plants Used Malaysia</i>, Volumes 1 And 2. Ed., Herbal Medicinal Research Centre.
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources