



UNIVERSITI TEKNOLOGI MARA

AGR702: ADVANCED CROP PRODUCTION

Course Name (English)	ADVANCED CROP PRODUCTION APPROVED
Course Code	AGR702
MQF Credit	3
Course Description	The course covers the use of advanced tools in plantation crop production and the concept of precision agriculture. The knowledge of crop physiology and integrated farming will be applied for optimizing the land use and production. The application of biotechnology as a revolution in plantation sectors will also be incorporated in this course.
Transferable Skills	knowledge and methodology
Teaching Methodologies	Lectures, Discussion, Presentation, Directed Self-learning , Journal/Article Critique
CLO	CLO1 Explain and apply advanced technology using Geographic Information Systems and Global Positioning systems in the management of plantation crops CLO2 Relate the physiology of some plantation crops to improve growth performance and production CLO3 Measure the viability of integrated farming and support of biotechnology in plantation sectors
Pre-Requisite Courses	No course recommendations
Topics	
1. Crop Production and Society 1.1) Plant and plant parts as source of food, fiber and shelter 1.2) Factors affecting crop production 1.3) Crop production system	
2. Modeling Land Uses 2.1) Data Collection: Geographic Information System (GIS), Global Positioning systems (GPS) and Remote Sensing 2.2) Spatial analysis 2.3) Interpretation 2.4) Modelling and decision making	
3. Land Preparation 3.1) Soil property and land classification 3.2) Terrain modification and tillage 3.3) Lining and soil amendment	
4. Planting Stock Production 4.1) Type of planting material 4.2) Nursery technique 4.3) Conventional crop improvement 4.4) Recombinant DNA technology	
5. Crop Development and Husbandry 5.1) Light requirement 5.2) Plant nutrition 5.3) Soil water management 5.4) The use of plant growth regulator 5.5) Weed, pest and disease control	

6. Integrated Farming

6.1) Concept and importance

6.2) Components : commodity crops, fruit crops, medicinal and aromatic plants, timbers, livestock production, aquaculture, apiculture

6.3) Integrated farm management

7. Yield Monitoring and Modelling

7.1) Yield monitoring

7.2) Growth modelling

7.3) Post harvest management

8. Crop Production and Environment

8.1) Environmental impact

8.2) Pollution management

8.3) Food safety

Assessment Breakdown	%
Continuous Assessment	70.00%
Final Assessment	30.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assignment	20%	CLO3
	Presentation	Video presentation	20%	CLO1
	Test	Mid-term assessment	30%	CLO3

Reading List	This Course does not have any book resources
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Article/Paper List	This Course does not have any article/paper resources
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Other References	<ul style="list-style-type: none"> • n/a Brase; T.A. 2006, <i>Precision Agriculture</i>., Thomson Delmar Learning. • n/a Hopkins, W.G., and Huner, N.P.A. 2004, <i>Introduction to Plant Physiology</i>., John Wiley & Sons, Inc. • n/a Salisbury, F.B., and Ross, C.W. 1992, <i>Plant Physiology</i>., Wadsworth Publishing Company, California. • n/a Turner, P.P. 1974, <i>Oil Palm Cultivation and Management</i>., Incorporated Society of Planters, Kuala Lumpur. • n/a Young, A. 1991, <i>Agroforestry for Soil Conservation</i>., C.A.B International, Wallingford, Oxon, U.K • n/a Buck, L.E., Lassoie, J.P. and Fernandes, E.C.M. 1998, <i>Agroforestry in Sustainable Agricultural Systems</i> ., Lewis Publishers, CRC Press, U.S. • n/a Engelstad, O.P. 1985, <i>Fertiliser Technology and Use</i>., SSSA, Inc. Madison, Wisconsin. • n/a Othman Yaacob and Subhadrabandhu. S. 1995, <i>The Production of Economic Fruits in South East Asia</i> ., Oxford Univ. Press • n/a Piggot, C. J. 1995, <i>Growing Oil Palms</i>., Incorporated Society of Planters, Malaysia. • n/a RRIM. 1979, <i>Rubber Planting and Nursery Techniques</i>., RRIM, Malaysia. • n/a Wastie, R.L. and Earp. D.A. 1985, <i>Advances in Oil Palm Cultivation</i>., Incorporated Society of Planters, Malaysia • n/a Demers, M.N. 2000, <i>Fundamentals of Geographic Information Systems</i> ., John Wiley & Sons, Inc. U.S. • n/a Herren, R.V. 2003, <i>Introduction to Biotechnology: An Agricultural Revolution</i> ., Delmar Learning, New York, United States of America.
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