UNIVERSITI TEKNOLOGI MARA

AGR482: CROP MANAGEMENT

Course Name (English)	CROP MANAGEMENT APPROVED
Course Code	AGR482
MQF Credit	3
Course Description	This course focuses on an examination of the agricultural industry, while also highlighting the role that scientific concepts play in agricultural processes. The coverage includes everything from the history of agriculture, soils, plant structures, and entomology, nursery, row crops, and biotechnology. An introduction to the principles of crop science and crop production includes the developmental morphology of crop seeds, seedlings, and plants as well as crop community dynamics in relation to biotic and environmental interactions that influence productivity. This course in crop management requires students to combine knowledge of soil, crop, ecological, economic, political, and social influences on cropping systems and agronomic knowledge with analytical, managerial, and communication skills to resolve related problems.
Transferable Skills	Knowledge, Communication, Leadership, Teamwork, Life Long Learning
Teaching Methodologies	Lectures, Blended Learning, Discussion
CLO	CLO1 Define and explain the role that scientific concepts play in agricultural processes including plant morphological features and physiological processes to crop production. CLO2 Interpret the importance of cultural practices for major cultivated crops including seedbed preparation, planting, fertilizing, irrigation, harvesting, storage, and processing. CLO3 Collaborate and interact cooperatively with group members to construct business plan using the right combination of resources and understand the role crop production plays in ecological and societal issues such as hunger, global warming, and environmental pollution.
Pre-Requisite Courses	No course recommendations

Topics
1. 1. Importance of Crops Plants 1.1) i. To human kind and their welfare 1.2) ii. To GDP 1.3) iii.To balance of trade
2. 2. Important Field Crops 2.1) n/a
3. 3. Crop Environments 3.1) i. Air 3.2) ii. Water 3.3) iii. Light 3.4) iv. Temperature 3.5) v. Soil
4. 4. Agronomic Problems 4.1) i. World population and food supply 4.2) ii. Pollution - air, water and soil 4.3) iii. Organic and sustainable agriculture

5. 5. Growth and Development of Crop Plants 5.1) 1. Botany of Plant 5.2) i.Anatomy and Structure 5.3) ii.Structure and Function 5.4) 2. Crop Propagation 5.5) i.Asexual Propagation - vegetative 5.6) ii.Sexual - seed 5.7) 1.seed quality 5.8) 2.seed certification
6. 6. Crop Physiology 6.1) i. Essential elements and nutrition 6.2) ii. Role of water and water management 6.3) iii. Photosynthesis and respiration
7. 7. Cropping system and Practices 7.1) i. Monoculture 7.2) ii. Multiple cropping and intercropping 7.3) iii. Organic cropping systems 7.4) iv. Tillage 7.5) v. Rotation 7.6) vi. Stand establishment 7.7) vii. GIS/GPS site specific application
8. 8. Pest control and Resistance Management 8.1) n/a
9. 9. Harvesting, Storing, and Marketing Practices 9.1) n/a
10. 10. Crop Breeding and Improvement 10.1) i. Genetic modification 10.2) ii. Biotechnology - tissue culture, transgenic palnt 10.3) iii. Selection and hybridization

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Case Study	Written report Chapter 9: Identify the main issue in harvesting, storing and marketing practices of the common crop related to agriculture sector in Malaysia. (E.g Oil Palm, Rubber, Cocoa, Paddy, Corn and other cash crop). Chapter 10: Discuss the acceptance level of GMO product in the market and argue on the consumer concerns and ethical issues of Genetically Modified Organisms (GMO's).	10%	CLO2
Presentation	Video Presentation: In video presentation, students must proposed 1 product that using the right combination of resources and understand the role crop production plays in ecological and societal issues such as hunger, global warming, and environmental pollution.	20%	CLO3
Test	Online Test	30%	CLO1

Reading List

Recommended Text

- **L.Devere Burton and Elmer L. Cooper 2005, *Crop Science Principles and Practices*, 5 Ed., R.Mullen Pearson Custom Publishing Agrisicience**

Reference Book Resources

- **Dr. Ray V. Herren 2011, *Exploring Agriscience*, 4 Ed., Thomson Learning**
- **Jasper S. Lee and Diana L. Turner 2010, *Agriscience*, 5 Ed., Prentice Hall**
- **Taiz, L. and Zeiger, E. 2006, *Plant Physiology*, 4 Ed., Sinauer Associates, Inc Sunderland, MA**

Article/Paper List

Reference Article/Paper Resources

- **Sparks, LD. 2011, Advances in Agronomy, *Academic Press*, Vol. 113**
- **Sadras, V.O. and Calderini, D.eds 2009, Crop Physiology: Applications for Genetic Improvement and Agronomy, *Elsevier INc.***

Other References

This Course does not have any other resources