



UNIVERSITI TEKNOLOGI MARA

AGR149: BOTANY AND TAXONOMY OF PLANTS

Course Name (English)	BOTANY AND TAXONOMY OF PLANTS APPROVED
Course Code	AGR149
MQF Credit	3
Course Description	This course will introduce students to the basic plant taxonomy and classification, morphology and anatomy, roles and functions of plant structure with special adaptation to some nature phenomena and the basic life process in plants.
Transferable Skills	Knowledge gained from lectures via discussions with lecturers and practical skills from laboratory work
Teaching Methodologies	Blended Learning, Discussion, Project-based Learning
CLO	CLO1 Describe the different types of cells, tissues and organs and their basic life process in plants relating to their roles and functions in nature. CLO2 Apply the basic concept of plant taxonomy and classification in practice CLO3 Conduct laboratory techniques relating to plant science
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction to plant taxonomy 1.1) Definition and important of plant taxonomy 1.2) Development of the binomial system in Nomenclature 1.3) Development and classification of the Kingdom concept of Animalia (animals), Plantae (plants, some multicellular algae), Fungi (fungi), Monera (prokaryotic bacteria) and Protista (eukaryotic bacteria, most algae) 1.4) Scientific naming of plants	
2. Plant cell and tissues 2.1) Eukaryotic versus prokaryotic cells 2.2) Plant cell structure 2.3) Cellular reproduction-Mitosis and Meiosis 2.4) Plant tissue 2.5) Categories of plant tissue (Dermal, vascular, ground) 2.6) Meristematic tissues (Apical, lateral, intercalary) 2.7) Simple tissue (parenchyma, collenchyma, sclerenchyma) 2.8) Complex tissues (xylem, phloem)	
3. Plant organs 3.1) 1. Basic plant parts 3.2) 2. Roots 3.3) internal root structure 3.4) root regions 3.5) 3. Stems 3.6) Bud, node, lenticel, cuticle, trichomes 3.7) vascular cambium 3.8) secondary growth 3.9) 4. Leaves 3.10) Leaf morphology (shape; venation; apex, bases and margin) 3.11) internal structure of leaves.	

4. Flowers, Fruits & Seeds

- 4.1) 1.Differences between dicots and monocots
- 4.2) 2.Angiospermatophyta
- 4.3) Basic parts of flower
- 4.4) Double fertilization
- 4.5) Development of the seed
- 4.6) 3.Seed structure
- 4.7) types of germination
- 4.8) development of the seedlings

5. Photosynthesis

- 5.1) 1.The essence of photosynthesis
- 5.2) 2.Major step of photosynthesis
- 5.3) Light dependent reactions
- 5.4) Light independent reactions

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Individual Project	Video presentation	10%	CLO2
	Test	Online Test	30%	CLO1
	Written Report	Student grow their own plant (from seed eg. Vegetable seed) and report each step/procedure until harvest	20%	CLO3

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> • Stern, K. R., Bidlack, J. E. and Jansky, S. H 2008, <i>Introductory Plant biology</i>, 11 Ed., McGraw-Hill • Janice Glimm-Lacy and Peter B. Kaufman 2006, <i>Botany illustrated introduction to plants, major groups, flowering plant families</i>, Springer New york • Campbell, N. A and Reece, J. B. 2008, <i>Biology</i>, 8 Ed., Benjamin cummings • Thomas L. Rost, et al 2006, <i>Plant biology</i>, Thomsons Brook Cole USA • Slyvia S. Mader 2007, <i>Biology Laboratory manual</i>, McGrew-Hill Higher education Boston • Kent, M 2000, <i>Advanced biology</i>, Oxford University Press Oxford
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources