جامعة المجمعة
Majmaah University

وكالة الجامعة للشؤون التعليمية
إدارة البرامج الدراسية والتطوير

نموذج (5)

(Course Syllabus)

Plant Physiology

اسم المقرر:	وظائف اعضاء نبات
رقم المقرر:	BIOL-223
اسم ورقم المتطلب السابق:	تصنيف نبات BIOL-222
اسم ورقم المتطلب المرافق:	-
مستوى المقرر:	الرابع
الساعات المعتمدة:	3

Course Information:	
Module Title:	Plant Physiology
Module ID:	BIOL-223
Prerequisite (Co-requisite) :	Plant Taxonomy, BIOL-222
Co-requisite :	-
Course Level:	4th
Credit Hours:	3

معلومات المقرر:

Module Description:

This course deals with the metabolic and biochemical reactions in plant growth and growth regulators in the plant and the importance of mineral nutrition for the plant and determine the importance of aquaculture and functions of essential mineral elements and symptoms of undernourishment on plant growth.

Module Aims:

1	Study of growth patterns in plants and factors affecting it
2	The study of plant growth regulators
3	Growth and ethylene inhibitors and vital tests
4	The study of flowers and flowering hormones
5	The study of mineral nutrition and its importance and physiological functions of the elements and symptoms of undernourishment and study of aquaculture and their uses
6	Study the metabolism of plants, such as free energy and oxidative and reductive force
7	The study of enzymes in terms of structure, specialization, catalytic reaction, label division and the factors influencing the process of photosynthesis, nitrogen metabolism and lipid metabolism

Learning Outcomes:

1	To be known how can define the concept of the physiology of the plant
2	Can be multiple types of solutions, and the laws that govern their movement
3	Student can be describing the concept of mineral nutrition
4	It can be comparing the absorption methods of plant
5	Student can describe photosynthesis and breathing in plant operation
6	Can comparing the processes of photosynthesis and respiration in plant construction
7	Describes the water relations of the cell

Course Contents:

(Subjects)	(Hours)	(Weeks)
Solutions: (Introduction - types of solutions laws - mobility controller laws)	**3**	**1**
Mineral nutrition: major and micro elements and it is sources, physiological roles of the elements and the effects of it is shortage, water and sand farms, and methods of preparation of nutritious solution, theories of absorption mineral elements, the kinetics of absorption, the transmission mechanism of solution through membranes, transmission elements and reuse.	**6**	**2**
Organic nutrition: **Photosynthesis:** The concept of photosynthesis, pigments and spectrum of absorption, transformation of light energy into chemical energy, optical phosphorylation and interactions of light and dark, carbon pathway in photosynthesis, Calvin cycle, Glycogen pathway, factors affecting the photosynthesis process	**6**	**4**
Breathing: Chemical reactions of breathing, factors affecting the breathing process, relationship between breathing and photosynthesis	**3**	**2**
Water relations of the cell and plant:	**3**	**2**

Properties and presence ways of water in soil, the movement of water from the soil to the roots and between cells and transport in wood, stomata movement and transpiration and methods of measurement and calculate the average, factors affecting transpiration		
Growth regulators and physiological effects	**3**	**2**
Physiological responses to environmental stresses	**3**	**2**

Textbook and References:

ISBN	Publishing Year	Publisher	Author's Name	Textbook title
	2002	مطبعة جامعة الملك سعود للنشر العلمى و المطابع - الرياض	محمد عمر -على الهلال-محمد حمد الوهيبى	فسيولوجيا النبات العامة الجزء الثانى
	1422	مطبعة جامعة الملك سعود للنشر العلمى و المطابع - الرياض	الوهيبى – محمد حمد	التغذية المعدنية فى النبات
	1418	مطبعة جامعة الملك سعود للنشر العلمى و المطابع - الرياض	الوهيبى – محمد حمد	العلاقات المائية فى النبات
	Publishing Year	Publisher	Author's Name	Reference
978-3330013919	2016	LAP LAMBERT Academic Publishing	Misganaw Meragiaw Mollaw	Plant Physiology: Lecture Notes on Principles and Concepts
978-1944749118	2016	Momentum Press	A Malcolm Campbell and Christopher J Paradise	Plant Physiology Paperback
978-1334418778	2016	Forgotten Books	Vladimir Ivanovich Palladin	Plant Physiology