



The Islamia University of Bahawalpur

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DEPARTMENT OF BOTANY Tentative Course Plan

Class:

Semester-

Session:

Instructor	Iqra Khadim		Email:ikhadim179 @gmail.com	
Course Title	Plant Physiology-II		Program	BS (7 TH Semester)
Course Number	BOTA-01704		Credit Hours	3(2+1)
Lectureday: period (00:00a.m to 00: 00a.m), Room# 00			
Course Objective:				
Methods of Teaching				
<ul style="list-style-type: none"> Assigned readings Group activities & Discussion Audiovisual aids lectures Web-assisted instruction Student-Directed Teaching 				
Resource Material	1. Text Books			
	i. Plant Physiology” by S N Pandey and B K Sinha			
	2.Reference Books		3.Research Papers	
	i	Plant Physiology. Book and Web Reference. TEXT required: . Taiz & Zeiger (2006) Plant Physiology. 4th Edition. Sinauer. Taiz L & Zeiger E (2002)	i	
	li		ii	
	4.Hot Research Papers		5.Web Resources	
i		i		
li		ii		
Office Help Hours				
Grading	Exam (Date to be announced) Mid- Exam (30%) Final Exam (50%) Problem Session/Assignments (20%)			
Problem Sessionday: 00 and 00 periods (0:00-00:00am), Room# 00			
SEQUENCE OF TOPICS TO BE COVERED				
Lecturer #	Topics (outline of main topics and sub topics)	Chapter #	Tutorial /Laboratory	
1	Introductory Lecture to the Subject			
2	Plant growth regulators, major natural hormones and their synthetic analogues	Plant growth regulators	Determination of K uptake by excised roots	
3	Bioassay, structure, biosynthesis, receptors	.		
4	Signal transduction and mode of action, transport physiol. effect of auxins Gibberellins, cytokinins, abscisic acid, ethylene			
5	Signal transduction and mode of action, transport physiol. effect of polyamines, Brassinosteroids, jasmonates, and salicylic acid		To investigate the preferential absorption of ions by corn seedlings and potato slices	

6	Water relations, the soil- plant- atmosphere continuum- an overview	Water relations	
7	Structure of water, physio chemical properties of water		
8	Water in soil and its potential, water in cell components		
9	Absorption of water in plants, Aquaporins their structure and types		
10	Cell water relations terminology, Hofler diagram		
11	Analysis of change in turgor, water and osmotic potential with change in cell volume, Osmoregulation		
12	Methods for measurement of water, osmotic and turgor potential, pressure chamber, psychrometry, pressure probe, pressure volume curve		To determine osmotic potential of massive tissue by freezing point depression method or by osmometer
13	Plant mineral nutrition, Absorption of mineral nutrients- roots, mycorrhizae	Plant mineral nutrition	
14	Effect of soil pH on nutrient availability, Passive and active transport and their energetics		
15	, Essential and beneficial elements- their function and deficiency symptoms in plants		
16	Fertilizers and their significance in Agriculture		
	Mid Term Exam	Course/Discussion from session 1 to 16	
17	Phytochromes	Phytochromes	
18	Discovery of phytochromes and cryptochromes		
19	Physical and chemical properties of phytochromes and their role in biological processes		
20	Control of flowering	Control of flowering	
21	Autonomous versus environmental regulation		To investigate water potential of a plant tissue by dye method and water potential apparatus
22	Circadian rhythms		
23	Classification of plants according to photoperiodic reaction and induction		
24	Role of photoperiodism in flowering		
25	Biochemical signaling involved in flowering		
26	Vernalization and its effect on flowering		
27	Floral meristem and floral organ development		
28	Floral organ identity genes and the ABC model		
29	Gene regulation		
30	Signal transduction		
31	Gene regulation in prokaryotes		

32	Gene regulation in eukaryotes		
	Final Term Exam	Course/Discussion from session 1- 32	

Student Evaluation criteria:

Attendance	5%
Workshop / Assignments/Case study	5%
Surprise Test/Sudden Test , Quizzes	5%
Class Participation	5%
Mid Term Paper	30%
Final Term paper	50%
Total	100%

Student Responsibilities:

Students must attend class. Failure to attend class may result in failure in the course. Students must also arrive on time and remain in class for the entire period. Cellular Phones and Beeper must be Turned off (Proper classroom decorum [behavior] adopts, Course outlines and calendars explain requirements and assignments, students are responsible for knowing what they say. Students are also responsible for doing all assigned work on time. Excessive absences (more than 03) will result in "F Grade".

Instructor / Tutor

Approved by:

Chairman