



ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)



هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: King Saud University	Date: June 2, 2020
College/Department: Science/Botany and Microbiology Dept.	

A. Course Identification and General Information√

1. Course title and code: Plant Physiology (BOT 271)			
2. Credit hours: 3 (2+0+1)			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Botany B.Sc			
4. Name of faculty member responsible for the course Dr. Faheema Khan, Dr. Jawaher Alqahtani			
5. Level/year at which this course is offered Level 4			
6. Pre-requisites for this course (if any): General Botany (BOT 102)			
7. Co-requisites for this course (if any)		None	
8. Location if not on main campus			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

B Objectives

1. What is the main purpose for this course?

- To understand the structure and functions of cell components.
- To understand plant water relation.
- To learn types of solution, their specifications and phenomenon of Osmosis and Diffusion.
- To understand phloem transport, and to learn the difference between active and passive transport in plants.
- To learn about mineral nutrition and to understand the role of different macronutrient and micronutrients in plants, their deficiencies and symptoms.-
- To understand photosynthesis, light and dark reactions of photosynthesis, Calvin Cycle, differences between C3 and C4 plants
- To learn phytohormones and their roles in plant growth and development.
- To learn about Amino acid, proteins, and enzyme mechanism
- To learn photoperiodism, photomorphogenesis and Vernalization.
- To understand the respiration in plants
- To learn about the plant metabolites, functions of primary and secondary metabolites
- To understand the photoperiodism, long day, short day and day neutral plants.
- To understand the concept of plant stress physiology, types of biotic and abiotic stresses avoidance and resistance.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web-based reference material, changes in content as a result of new research in the field)

- Continuous updating the course material by looking to recent research from internet
- Utilizing the internet by the students for more knowledge in Plant physiology

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Functions of cells components -Water relations- Minerals nutrition- Phloem transport-Amino acids- proteins and enzymes-Photosynthesis-Transpiration-Metabolism of N, S, lipids and aromatic compounds-Growth and differentiation-Phytohormones- Photomorphogenesis- Biological clock- Photoperiod- Vernalization-Physiological stress.

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
Introduction of the course, Understanding the functions of cell components.	1	4
Plant water relation and water movement, cohesion and adhesion, transpiration pull.	1	4
Solution types: True solutions, Suspensions, Emulsions, colloids. phenomenon of Osmosis, Diffusion	2	8
Phloem transport	1	4
Mineral nutrition in plants	2	8
Photosynthesis	2	8
Transpiration	1	4
Phytohormones	1	4
Photoperiodism, Vernalization	2	8
Nitrogen metabolism, Amino acids proteins, lipids and Enzymes.	1	4
Physiological stress, Biotic and abiotic stresses in plants	1	4

2. Course components (total contact hours and credits per semester):							
		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planned	30			60		90
	Actual	30			60		90
Credit	Planned	2			2		4
	Actual	2			2		4

3. Additional private study/learning hours expected for students per week.	15
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Describe the basic structure and cell components	-Lecture -Assignments	- Student reports. - Mid-terms - Final Exams
1.2	Recognize the plant water relation and metabolism : Photosynthesis and Respiration	-Lecture -Assignments	- Student reports. - Mid-terms - Final Exams
1.3	Describe the plant stress physiology	- Lecture - Assignments	- Student reports. - Mid-terms - Final Exams
2.0	Cognitive Skills		
2.1	Ability to collect the data about specific subject.	- Lecture - Assignments	- Practical reports
3.0	Interpersonal Skills & Responsibility		
3.1	Students will be able to work in a team	Team work	Practical reports
4.0	Communication, Information Technology, Numerical		
4.1	-Students will be able to make a power point presentation and using advanced tools in report writing	- Assignments	Oral presentation Practical reports
5.0	Psychomotor		
5.1	Slide preparation	Practical Lab	Practical Exam

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz	4	4
2	First mid-term exam	7th	8
3	Quiz	10th	4
4	Practical mid-term exam	11th	10
5	Oral presentation	12th	4
4	Second mid-term exam	13th	10
5	Practical exam	14th	20
6	Final exam	After 15th	40

D. Student Academic Counseling and Support

<p>1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)</p> <ul style="list-style-type: none"> - The faculty has a schedule of 3 office hours weekly, known to the students. - Email contact - Faculty personal website

E Learning Resources

<p>1. List Required Textbooks Peter Scott. (2008). Physiology and Behavior of Plants. Wiley-Blackwell Andres Illanes. (2001). Environmental Physiology of Plants [3 ed.]. Academic Press F. B. Salisbury and Ross. (1992) Plant Physiology</p>
<p>2. List Essential References Materials (Journals, Reports, etc.) Plant Physiology, Mohammad Al-Woheibi and others. Introduction of Plant Physiology (Practical). Al-Qurainy, F. and Al-Mulaigy, A.</p>
<p>3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.</p> <ul style="list-style-type: none"> - Microsoft programs, power point , Excel programs
<p>4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.</p>

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) -Classroom -Laboratories
2. Technology resources (AV, data show, Smart Board, software, etc.) -Smart board
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)



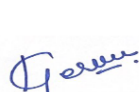
G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching -Course evaluation survey – Program evaluation survey
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department - Course reports. - Annual reports. - Peer to peer review
3. Processes for Improvement of Teaching - time to time training courses by the Deanship of Skills Development
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. The course file contains the course specification, course report, analysis of the course evaluation survey, a sample of assignments, homework, quizzes, answer sheets, student grades and the teacher evaluation survey filled by the students. All these are evaluated by the faculty and utilized for improvement of the course effectiveness

Name of Course Instructor: Dr. Faheema Khan, Jawaher Al-Qahtani

Signature: _____ Date Specification Completed: June 2, 2020

Program Coordinators: Prof. Dr. Mohammed Alyemeni, Prof. Dr. Mohamed A. El-Sheikh & Dr. Kahkashan Perveen

Signature:  ,  , and  Date Received: June 2, 2020