

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

**Course Specifications
(CS)**

Course Specifications

Institution: University of Dammam

Date: 2013/2014

A. Course Identification and General Information

1. Course title and code: Plant physiology 2 Biol. 433N			
2. Credit hours: 3 hours			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Bachelor of Science in Biology			
4. Name of faculty member responsible for the course A specific team from the Biology Department			
5. Level/year at which this course is offered			
6. Pre-requisites for this course (if any)			
7. Co-requisites for this course (if any)			
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="10%"/>
b. blended (traditional and online)	<input type="text" value="70%"/>	<input checked="" type="checkbox"/>	What percentage?
c. e-learning	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="20%"/>
d. correspondence		What percentage?	<input type="text"/>
f. other	<input type="text"/>	What percentage?	<input type="text"/>
percentage? Comments:			
The mentioned percentage can changed according the students and learning environment			

B Objectives

1. What is the main purpose for this course?

By studying plant physiology 2 course the students should be able to:

- = identify growth and growth regulators in plants
- = differentiate between different physiological responses of plants against growth regulators.
- = analyses of the importance of nutrient mineral elements for plant.
- = conclude the importance of aquatic culture, the role of essential minerals and its deficiency symptoms.
- = communicate effectively during discussions and group learning.

= acquire the skills of all practical lessons

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)

- 1- Comparing the course contents with the similar in local and international universities.
- 2- Updating the course contents with advanced information and techniques .
- 3- Updating the learning sources
- 4- Supporting the new teaching methodology
- 5- Encourages students self-learning and feedback
- 6- Maximize cooperation and groups learning

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

Course Description:

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
Growth –growth phases - factors affecting growth rate	1	2
Plant growth regulators – auxin	1	2
Gibberellins	1	2
Cytokinins and new growth regulators	1	2
Ethylene	1	2

Abscise acid and growth inhibitors	1	2
Mineral nutrition and plant growth	1	2
Methods of studying and determination of nutrient minerals in plants	1	2
Mineral nutrients absorption	2	4
Mineral nutrients deficiency symptoms	2	4
Photoperiodism and Vernalization	2	4
Practical section		
Experiment 1: identification of elongation zoon Experiment 2: measuring leaf growth in dicot and monocot plants	1	1
Experiment 3: role of auxin in plant elongation	1	1
Experiment 4: role of gibberellin in alpha amylase enzyme induction	1	1
Experiment 5: effect of ethylene on seedling growth in dark	1	1
Experiment 6: effect of Indol acetic acid , gibberellin and cytokinin on chlorophyll content on cucumber cotyledons	1	1
Experiment 7: evolution of plant ash content	1	1
Experiment 8: detection of mineral elements in plant ash	1	1
Experiment 9: allocation of Cl ⁻ ions in plants	1	1
Experiment 10: osmosis phenomenon by using potato cubs	1	1
Experiment 11: Chardakov's methods for measuring water potential tension	1	1

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	2X 13= 26		11 X 2 = 22			
Credit	26		11			

3. Additional private study/learning hours expected for students per week.
Thirty hours in search, library, homework, discussion.... etc...

30h

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	Course Teaching	Course Assessment
1.0	Knowledge		
1.1	Understanding the concept of growth and growth dynamics	Lecture, open discussion. Brainstorm, PowerPoint presentation, problem solving, groups learning, feedback, illustrating figures, videos, laboratory lessons.	Quiz, assignment, homework, oral discussion, test, Worksheets, exam.
1.2	Comparing between physiological effects of different growth regulators on plant life.		
1.3	Comparing between the biosynthetic pathways, allocation, and translocation of different growth regulators.		
1.4	Conclusion the importance of light for plant growth		
1.5	Determination the macro and micro nutrient minerals in plants. functions. deficiency symptoms		
1.6	Analysis of advantage and disadvantage of solid and aquaculture.		
2.0	Cognitive Skills		
2.1	Distinguish between deficiency symptoms of different elements	Brainstorming, problem solving, group discussion, laboratory lessons, assignments,	Reports of laboratory experiments, worksheets, homework, discussion
2.2	Classify the growth regulators according to its action		
2.3	Determination of the mode of action of growth regulators practically in laboratory		
2.4	Interpretation experimental results		
2.5	Discover the applicable possibility and benefits of growth regulators.		
3.0	Interpersonal Skills & Responsibility		
3.1	Induce Cooperation between students	Group learning, assignments, group activities, discussion, self-learning.	Evaluation the group activities, Open discussion, Oral quiz, self evaluation.
3.2	Leadership skills improvement		
3.3	Development self-learning ability		
3.4	Time management		
3.5	Responsibility		

4.0	Communication, Information Technology, Numerical		
4.1	Improve communication skills (orally)	Assignment in task Presentation Videos	Assessment policy Evaluation related activities.
4.2	Achievement skills for using devices and technology in learning.		
5.0	Psychomotor		
5.1	Laboratory activities and lessons	Small group learning. Self-evaluation Playing roles	Practical exam Follow-up
	Handling skills during practical periods		
5.2	Skills of using laboratory tools and instruments		
	Computer skills and e-learning interaction		

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top)

Course LOs #	Program Learning Outcomes (Use Program LO Code #s provided in the Program)									
	1.1	1.2		2.1		3.2		4.1		
	1.1									
2.1										

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination,	Week Due	Proportion of Total
1	Homework and essay	CONTINUOUS	4%
2	Speech and discussion	CONTINUOUS	2%
3	Practical med term test	5 th	8%
4	Med term exam	7 th	20%
5	Oral presentation	CONTINUOUS	3%
6	Group project	10 th	3%
7	Final practical exam	13 th	20%
8	Final exam	15 th	40%

D. Student Academic Counseling and Support

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)

- office hours (4 hours weekly)

- e-mails
- e-learning system
-

E Learning Resources

<p>1. List Required Textbooks</p> <p>1- Plant Physiology, by: Robert Devlin and Francis Witham (2000), El-Arabia Home Pub.</p> <p>2- General plant physiology by: M. Basalah and A. Alhelal, (1422H), KSU Pub.</p> <p>3- Growth regulators and flowering by: Emad El Dein Wasfy (1995), Academic Lib. Egypt.</p> <p>4- Plant growth materials and its uses in agriculture by: M. Khalifa, Lebanon.</p> <p>5- Illustrated general plant physiology by: Shakha Abdel Kareem, Almotanaby Lib; KSA.</p>
<p>2. List Essential References Materials (Journals, Reports, etc.)</p> <p>= Nature</p>
<p>3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)</p>
<p>4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.</p> <p>1. Sciencedirect.com</p> <p>2. Google.com</p> <p>3. <u>www.Atlas of plants.</u></p>
<p>5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.</p> <p>= University and Faculty of Science library contents.</p> <p>= videos</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.)

- = classrooms supported by
- = laptops
- = remote-control
- = pointers

2. Computing resources (AV, data show, Smart Board, software, etc.)

- = data show, projector , 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

- = questioner
- = analysis of students results
- = student evaluation for teaching staff member
- = colleges evaluations
- = self-evaluation

2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

- = self-evaluation
- = peer review of the course specification
- = acquaintance the similar course in local and international universities.
- = continuous reviewing of course by specialists

3 Processes for Improvement of Teaching

- = updating the teaching subject
- = recent text books and advanced references
- = consulting the expert teaching staff members
- = training program about advanced teaching strategies

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)

- Review papers tests by an independent faculty member.
- Diversity in the methods of the tests measure different skills, so that when the student.
- Participate in the evaluation of offers students for research projects by an independent faculty member.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Revision Course specification and its contents periodically by an internal committee and by the external committee.
- Compared to the characterization scheduled with similar decisions in other universities.
- The work of a self-study of the decision to see the weaknesses and improve them.
- Take advantage of the statistical analysis of the results of the students in the improvement and development of weaknesses.
- Update sources of learning to courses to keep up with the rapid developments in the field of science and knowledge.
- Training and development through training sessions and workshops on an ongoing basis to follow up on the latest scientific developments and educational.
- Assignment of faculty members to other universities external to acquire new skills