هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	**Plant hormones**
Course Code:	**344BOT -2**
Program:	**Bachelor of Science in Biology**
Department:	**Biology**
College:	**Science**
Institution:	**Jazan University**

Table of Contents

A. Course Identification

1. Credit hours: 2hours (Lectures/Week 1 h + Practical/Week 2h)
2. Course type **a.** University ☐ College ☐ Department ■ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: Level 6/ 3rd Year.
4. Pre-requisites for this course (if any): 341BOT -2 (Plant Water and soil Relationship).
5. Co-requisites for this course (if any)**: Plant Morphology and Anatomy 241Bot.**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	14	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	14
2	**Laboratory/Studio**	28
3	**Tutorial**	4
4	**Others** (specify) Exam preparation (mid-1 +Quiz + final)	9
	Total	55

B. Course Objectives and Learning Outcomes

1. Course Description

Course Title	Course No.	Credit Units			Year	Level	Pre-Requisite
		Theoretical	Practical	Total			
PLANT HORMONES	344BOT	1	1	2	3rd	5th	341BOT

2. Course Main Objective

Study of growth phenomena, plant hormones and growth regulators

2) Course Contents:

Growth (Definition, Measurement) - Differentiation – Development – Plant Hormones (Auxins, Gibberellines, Cytokinenes, Ethylene, Abscisic Acid) - Growth Movements (Tropisms, Nastic Movements) – Tropisms (Phototropism, Geotropism) –Tissue Culture - Stress Physiology – Phytochrome (Photoperiodism, Flowering).

3) Practical:

Phototropism, Geotropism, Nastic Movements, Auxin and Elongation of Barley Seedling, Effect of Gebberillines on Growth of Lettuce, Effect of Kenetine on Callus, Tissue Culture, Plant hormones and differentiation. Photoperiodism

4) Assessment:

Exams: on Blackboard system Essay/Objective, Quizs, Homework, research work, translations
Practical: Identifying samples and slides, drawings.
Quiz 20%
Practical 30%
Final 50%

5) Teaching Methods:

Lectures, photographs, slides, multimedia, web-based learning. Samples, Light microscopes, glassware, chemicals.

6) Text Books:

7) References:

- Davis P.J. (2005) Plant Hormones. Kluer Academic Publishers, Dordrecht.
- Hopkins, WG & Huner, NPA 2008, Introduction to plant physiology, 4th edn, John Wiley and Sons, New York. (ISBN 0 470 24766 5.)

أبوزيد، الشحات نصر (2000). الهرمونات النباتية والتطبيقات الزراعية. الدار العربية للنشر والتوزيع.

باصلاح، محمد عمر (1998). فسيولوجيا النبات العامة الجزء الثاني. دار رهام جده المملكة العربية السعودية

www.users.rcn.com/jkimball.ma.ultranet/BiologyPages/
www.emc.maricopa.edu
www.biology.clc.uc.edu

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Describe structures, features, and processes related to all biological aspects.	K 1
1.2	Identify items and their related functions on tissue and organ diagrams	K 2
2	**Skills :**	
2.1	Explain aspects, theories, and processes relevant to contents of Biology courses	S 1
2.2	Compare different structures and features related contents of Biology courses	S 2
2.3	Interpret experimental data in relevant situations	S 3
2.4	Appraise critically biological scientific theories.	S 4
3	**Values (Skills):**	
3.1	Illustrate ability to work in groups and responsibility	V 1

C. Course Content

No	List of Topics	Contact Hours
1	Plant Growth. Definition, Measurement, Differentiation, Development.	2
2	Plant Hormones. Auxins. Gibberellins. Cytokinins.	2
3	Plant Hormones. Ethylene. Abscisic Acid.	2
4	Plant Movements. Nastic Movements.	2
5	Plant movements: Tropisms.	2
6	Plant Hormones. Circadian rhythms, Biological Clock.	2
7	Plant hormones. Photoperiodism, Tissue culture technique.	2
Total		14

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Demonstrate structures, features, and processes related to courses,	Lecture	Quizzes, Short Answer Question, MCQs
1.2	Identify items and their related functions on diagrams,	Lectures, Lab work	Quizzes, Short Answer Question, MCQs
2.0	**Skills**		
2.1	Explain aspects, theories, and processes relevant to Biology courses,	Lectures, Lab work	Quizzes, Short Answer Question
2.2	Compare different structures and features related to Biology courses,	Lectures, Lab work, Group Discussions	Quizzes, Short Answer Question, Lab work assessment
2.3	Interpret experimental data and apply in relevant situations,	Lab work	Short Answer Question, Assignments
2.4	Appraise critically biological scientific theories.	Lectures, Lab work, Group Discussions	Quizzes, Short Answer Question, Lab work assessment
3.0	**Values**		
3.1	Illustrate ability to work in groups and responsibility	Group Discussion, Lab work	Lab work assessment

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Written assignment	4	5
2	Theoretical quiz	6	5
3	Mid-term exam	8	10
4	Practical Mid-term exam	9	10
5	Practical assignment	12	5
6	Final practical exam	14	15
7	Final Exam	16	50

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice : -10 Office hours/faculty/week. -Online and by academic mail.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	أبوزيد، الشحات نصر (2000). الهرمونات النباتية والتطبيقات الزراعية. الدار العربية للنشر والتوزيع. باصلاح، محمد عمر (1998). فسيولوجيا النبات العامة الجزء الثاني. دار رهام جده المملكة العربية السعودية
Essential References Materials	Hopkins, WG & Huner, NPA (2008). Introduction to plant physiology, 4th edn, John Wiley and Sons, New York. (ISBN 0 470 24766 5.) Davis P.J. (2005) Plant Hormones. Kluer Academic Publishers, Dordrecht.
Electronic Materials	www.users.rcn.com/jkimball.ma.ultranet/BiologyPages/ www.emc.maricopa.edu www.biology.clc.uc.edu
Other Learning Materials	Contents uploaded on Blackboard system

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	1 Lecture room(s) for groups of 50 students. 1 Laboratory for group of 25 students.
Technology Resources (AV, data show, Smart Board, software, etc.)	AV, data show, Smart Board, Blackboard system, software content
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Light microscopes, glassware, chemicals, consumables, dissection tools.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	Students, Faculty	Direct (Questionnaire)
Effectiveness of assessment	Peer Reviewer	Direct (Cross Check marking)
Extent of achievement of course learning outcomes	Program Leader	Indirect (QA Committee)
Quality of learning resources	QA. Committee	Indirect (Benchmarking)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	