



المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

Course Specifications

Institution: University of Tabuk	Date: 12.8.1440
College/Department : Science/ Biology	

A. Course Identification and General Information

1. Course title and code: Plant Anatomy [BIO 342]		
2. Credit hours: 3		
3. Program(s) in which the course is offered: Biology (If general elective available in many programs indicate this rather than list programs)		
4. Name of faculty member responsible for the course: Dr. Zahid Hameed Siddiqui		
5. Level/year at which this course is offered: 6		
6. Pre-requisites for this course (if any): BIO 341 (General Botany 2)		
7. Co-requisites for this course (if any): None		
8. Location if not on main campus: N.A.		
9. Mode of Instruction (mark all that apply):		
a. Traditional classroom	<input checked="" type="checkbox"/> What percentage?	<input type="text" value="75%"/>
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 (Lab work)	<input checked="" type="checkbox"/> What percentage?	<input type="text" value="25%"/>
Comments:		

B Objectives

1. What is the main purpose for this course?

At the end of this course students learn the following:

- Provide students with modern information needed to reach a clear knowledge and understanding of the internal structure of the plant organs.
- Provide information on the plant tissue system (Epidermal, Ground and Vascular tissues), primary and secondary growth.
- Introduce students to the scientific concept of anatomical terms.
- Develop student's ability to learn and understand the relationship between the internal structure of the plants and the surrounding environment.
- Develop the skills to distinguish between monocot and dicot plants.

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 of the study material by looking at recent research and access to the latest versions of the published books through internet.
- Review course content on a regular basis by plant anatomist, in the internal structure of the plants and their relation with the surrounding environment to add advance and modern knowledge.
- Update the practical materials.
- The use of high-accuracy optical microscopes to examine plant specimens.
- Evaluation of the course content and its scientific benefit by students in practical ways.
- Encourage students for discussion during the lecture.

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

Course Description:

- This course includes introduction to plant cell, description of cell structure and function, The Plant tissues; meristematic tissues (structure of apical shoot and root), permanent tissues (dermal tissue system, ground tissue system and vascular tissue system, internal structure of root, stem and leaves, secondary growth and Anomalous, Phellogen and formation of periderm, secretory structures, and ecological effect on plant.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction (The Plant cell: protoplast)	1	3
Introduction (The Plant cell: the cell wall)	1	3

The Plant tissues: meristematic tissues Shoot apical meristem Root apical meristem	1	3
The Plant tissues: Permanent tissues - Dermal tissue system - Ground tissue system	1	3
The Plant tissues: Permanent tissues - Vascular tissue system a) xylem b) phloem	1	3
The Plant tissues: Permanent tissues - Dermal tissue system	1	3
The Plant tissues: Permanent tissues - Lateral meristem: Vascular cambium	1	3
Revision and Pre Final Exam		
Mid Term Vacation		
Primary body: Stem	1	3
Primary body: Leaf	1	3
Primary body: Root	1	3
Secondary growth and Anomalous	1	3
Phellogen & formation of periderm, and Secretary structures	1	3
Ecological effect on plant. Revision	1	3
Final Exam		

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planned	26	N.A.	26	N.A.	N.A.	52
	Actual	26		26			52
Credit	Planned	2		1			3
	Actual	2		1			3

3. Additional private study/learning hours expected for students per week.

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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

A brief summary of the knowledge or skills that course is intended to develop.

- A description of the teaching strategies to be used in the course to develop that knowledge or skill.
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	- Define the concepts, and terminology for Plant anatomy.	- Lecture	- Written or oral questions.
1.2	- Outline of the internal structures of the plants.	- Practical lessons.	- Practical Exam.
1.3	- Recognize the relationship between plant structures and its development.	- Research individually or collectively. - Connect through the internet.	- Group discussion and dialogue. - Activities and homework evaluations
2.0	Cognitive Skills		
2.1	- Summarize the advancement in plant anatomy.	- Group discussion	- Direct questions.
2.2	- Evaluate the evolutionary relationships between plant communities.	- Homework. - Practical lessons.	- Periodic exam.
2.3	- Interpret the relation between the plants and the environment surrounding them.	- Ordering of teaching assistants job interviews with students in office hours.	- Periodic texts. - Practical tests.
2.4	- Judge and estimate what is required when you get updated information on botany.	- The application of the scientific method of thinking. - Collect data from internet, references journals, and record it in tables.	- Measuring the ability for analysis and interpretation.
3.0	Interpersonal Skills & Responsibility The students should be able to:		
3.1	- Appraise their time in self-study of the course materials.	- Homework. - Conduct research.	- Project discussion.
3.2	- Operate in teamwork.	- Working in groups	- Student evaluation by teacher. - Observation of student behavior in the

			lab.
3.3	- Analyze, write and exchange the data.	- Ordering of teaching assistants job interviews with students in office hours.	- Periodic exam. - Oral discussion.
4.0	Communication, Information Technology, Numerical The students should be able to:		
4.1	- Interpret results and take responsibility.	- Homework project.	- Oral discussion.
4.2	- Interpret modern ways of gathering information, such as computers and the Internet.	- Homework activities.	- Writing the reports and oral discussion.
4.3	- Commitment to the ethics of scientific research and work in the research team.	- Practical lessons	- Observation of student behavior in the lab.
5.0	Psychomotor The students should be able to:		
5.1	- Draw samples from the plant thoroughly microscope .	- Practical lessons	- Practical exercises
5.2	- Prepare glass slides in laboratories.	- Practical lessons	- Practical exercises

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	Short Quizzes, collective projects and reports	3	10%
2	Pre-final practical exam	8	10%
3	Pre-final theoretical exam	8	25%
4	Final practical exam	15	15%
5	Final Theoretical exam	15	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: 8 hours / week
 - Academic Guidance for about 20 students as determined by admission and registration.
 - Direct supervision of staff for lab works.
 - Electronic communication through university web page and e-mail.

E Learning Resources

<p>1. List Required Textbooks EG Cutter (1977) Plant Anatomy Part 1. Cells and Tissues. Edward Arnold, London.</p>
<p>2. List Essential References Materials (Journals, Reports, etc.)</p> <ul style="list-style-type: none"> - PH Raven, Evert RF, Eichhorn SE (1999) Biology of Plants, 6th edition. WH Freeman, New York - Campbell, Neil A.; Jane B. Reece (2002). Biology (6th Ed.). Benjamin Cummings - Debbie Swarthout and C. Michael Hogan. 2010. Stomata. Encyclopedia of Earth. National Council for Science and the Environment, Washington DC.
<p>3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.</p> <ul style="list-style-type: none"> - http://onlinelibrary.wiley.com/book/10.1002/0470047380?globalMessage=0 - http://aob.oxfordjournals.org/cgi/content/abstract/79/6/667 - http://www.biologie.uni-hamburg.de/b-online/e05/05a.htm
<p>4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.</p>

F. Facilities Required

<p>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.)</p>
<p>1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)</p> <ul style="list-style-type: none"> - Classrooms accommodate about 60 students/ Room - Laboratories accommodate about 30 students/ Lab. - Anatomical slides for lab study.
<p>2. Technology resources (AV, data show, Smart Board, software, etc.)</p> <ul style="list-style-type: none"> - Well equipped lab and lecture room with computers and display screens installed with curtains on the windows are required.
<p>3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)</p> <ul style="list-style-type: none"> - A number of computers should be available for students.

G Course Evaluation and Improvement Processes

<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> - Questionnaires. - Direct meetings between students and faculty members.

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department -Peer consultation by departmental course committee.
3. Processes for Improvement of Teaching - Discussion sessions with colleagues and the Quality Assurance Committee of the department and faculty. - Implementation of suggestions by the administration - Implementation of suggestions by departmental course committee. - Monitoring of teaching activates by the administration
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) -Reviewing assessments by chairman, colleagues and the committee of development in the department.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Scheduled comparison with similar courses on the local and global level. - Review content periodically by the Committee on development of the department. - Using statistics of student questionnaires to assess course to improve the quality of course.

Name of Course Instructor: Dr. Zahid Hameed Siddiqui

Signature:



Date Specification Completed 12.8.1440

Program Coordinator: **Dr. Omar Salem Obeid Bahattab**

Signature: *Omar Bahattab*

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