



## Course Specifications

<b>Course Title:</b>	<b>General Botany</b>
<b>Course Code:</b>	<b>BIO241</b>
<b>Program:</b>	<b>Bachelor of Science in Biology</b>
<b>Department:</b>	<b>Department of Biology</b>
<b>College:</b>	<b>Faculty of Science</b>
<b>Institution:</b>	<b>University of Tabuk</b>

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## A. Course Identification

<b>1. Credit hours:</b>	<b>3 (2 Theoretical + 1 Practical) hours</b>			
<b>2. Course type</b>				
a.	University <input type="checkbox"/>	College <input type="checkbox"/>	Department <input checked="" type="checkbox"/>	Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>		
<b>3. Level/year at which this course is offered:</b>	<b>Level 4/ Second semester/ Second year</b>			
<b>4. Pre-requisites for this course (if any):</b>	<b>General Biology 2 (BIO202)</b>			
<b>5. Co-requisites for this course (if any):</b>	None			

## 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other (Laboratory)	2	50%

## 7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	26
2	Laboratory/Studio	26
3	Tutorial	
4	Others (specify)	
	<b>Total</b>	<b>52</b>

## B. Course Objectives and Learning Outcomes

### 1. Course Description

- This course provides introduction to botany, a broad overview of the morphology and anatomy of plant. It explains structure, function, and modification of different plant organs such as roots, stems, leaves, flowers, inflorescence, and fruits. Outline the different types of seed ( monocot & dicot) and stages of seed germination.

### 2. Course Main Objective

**By the end of this course, the students should be able to:**

- Providing students with an introduction to the plant morphology, different plant parts modification purpose and various uses of modification, like root, stem, leaf etc.
- Describing the ultra-structure of different plant tissue and different types of plant cells.
- Recognizing the different types of plant roots, stems, leaves, flowers, fruits, and seeds.
- Describing the different types of plant tissue and anatomy of root, stem, and leaf.
- Identifying different organs of plants and recognize their functions, modifications and ecological adaptations in natural environment.
- Using of compound microscope to observe the prepared slides of plant tissues.



### 3. Course Learning Outcomes

CLOs		Aligned PLOs
<b>1</b>	<b>Knowledge and Understanding</b>	
1.1	To describe the structure, morphology, function and modification of plant organs (such as roots, stems, leaves, flowers, and fruits).	K1
1.2	To describe different types of seeds and methods of seed germination.	K2
<b>2</b>	<b>Skills :</b>	
2.1	To differentiate morphologically between monocot & dicot, seeds, roots, stems and leaves.	S3
2.2	To examine the morphological structure of primary plant body of monocot & dicot root, stem and leaves.	S2
2.3	To compare the structure and germination of different types of seeds. .	S5
<b>3</b>	<b>Values:</b>	
3.1	To work independently as a member or as a team in a germination and examination of plant parts project.	V1

### C. Course Content

#### 1-Theoretical Part:

No	List of Theoretical Topics	Contact Hours
1	Introduction to botany	2
2	Seed and seed germination 1	2
3	Seed and seed germination 1	2
4	Morphology of roots	2
5	Morphology of stems 1	2
6	Morphology of stems 2	2
7	Morphology of leaves 1	2
	<b>Midterm Exam</b>	
8	Morphology of leaves 2	2
9	Anatomy of roots (monocot-dicot)	2
10	Anatomy of stems (monocot-dicot)	2
11	Anatomy of leaves (monocot-dicot)	2
12	Morphology of the flower and inflorescence	2
13	Fruits and revision	2
	<b>Final Exam</b>	
<b>Total</b>		<b>26</b>

#### 2- Practical Part:

No	List of Practical Topics	Contact Hours
1	Introduction to botany Lab – Lab safety & Essential Instruments and Facilities	2
2	Parts of a flowering plants	2
3	Examination of different types of plant seeds (Monocot and dicot)	2



4	Germination of seed and types of seedlings.	2
5	Examination of roots and root modifications in (Monocot and dicot)	2
6	Examination of stem and stem modifications in (Monocot and dicot)	2
7	Examination of leaf and leaf modification in (Monocot and dicot)	2
	<b>Midterm Exam</b>	
8	The flower	2
9	The Fruits	2
10	Plant anatomy, Anatomy of Root (Monocot-Dicot)	2
11	Plant anatomy, Anatomy of Root (Monocot-Dicot)	2
12	Anatomy of Stems (Monocot-Dicot)	2
13	Anatomy of Leaf (Monocot-Dicot)	2
	<b>Final Practical Exam</b>	
<b>Total</b>		<b>26</b>

## D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding</b>		
1.1	To describe the structure, morphology, function and modification of plant organs (such as roots, stems, leaves, flowers, and fruits).	<ul style="list-style-type: none"> <li>- Lectures.</li> <li>- Case study and articles.</li> <li>- Activities and homework.</li> </ul>	<ul style="list-style-type: none"> <li>- Periodic exams.</li> <li>- Final exams.</li> <li>- Quizzes.</li> <li>- Homework.</li> </ul>
1.2	To describe different types of seeds and methods of seed germination.		
<b>2.0</b>	<b>Skills</b>		
2.1	To differentiate morphologically between monocot & dicot, seeds, roots, stems and leaves.	<ul style="list-style-type: none"> <li>- Lectures.</li> <li>- Individual and small group tasks.</li> <li>- Short essay.</li> <li>- Lab demonstration, dissection and drawing skills.</li> <li>- Individual presentation and working as a part of group.</li> </ul>	<ul style="list-style-type: none"> <li>- Assessment of lab reports and practical examination.</li> <li>- Individual and group presentation.</li> <li>- Case study.</li> <li>- Demonstration through charts and posters.</li> <li>- Periodic exams.</li> <li>- Final exams.</li> </ul>
2.2	To examine the morphological structure of primary plant body of monocot & dicot root, stem and leaves.		
2.3	To compare the structure and germination of different types of seeds.		
<b>3.0</b>	<b>Values</b>		
3.1	- To demonstrate the work in a team to conduct a germination and examination of plant parts.	<ul style="list-style-type: none"> <li>- Essay writing.</li> <li>- Lab demonstration.</li> <li>- Individual &amp; group presentation.</li> </ul>	<ul style="list-style-type: none"> <li>- Oral and written scientific report.</li> </ul>

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
			<ul style="list-style-type: none"> <li>- Interactive discussion and participation.</li> <li>- Work in groups.</li> </ul>

## 2. Assessment Tasks for Students

#	*Assessment task	Week Due	Percentage of Total Assessment Score
1	Quizzes + Assignments + Class discussion	1 - 13	10%
2	Midterm Theoretical Exam	8	25%
3	Midterm Practical Exam	8	10%
4	Final Practical Exam	14	15%
	Final Theoretical Exam	15	40%

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:**

- Office hours 6 hr/ week at least.
- Academic Guidance for about 30 students as determined by admission and registration.
- Direct supervision of staff for lab works.
- Electronic communication through blackboard and email.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	<ul style="list-style-type: none"> <li>- Campbell et al. (2007): Biology. Benjamin-Cummings Publishing Company.</li> <li>- Bendre, A. M. (2008): Practical Botany. Rastogi Publications, India.</li> </ul>
<b>Essential References Materials</b>	<ul style="list-style-type: none"> <li>- Campbell et al. (2007): Biology. Benjamin-Cummings Publishing Company.</li> <li>- Bendre, A. M. (2008): Practical Botany. Rastogi Publications, India.</li> </ul>
<b>Electronic Materials</b>	<ul style="list-style-type: none"> <li>- A text book of General Botany (2011): Gilbert M. Smith.</li> <li>- A Classbook of Botany (2000): A.C. Dutta.</li> </ul>
<b>Other Learning Materials</b>	<ul style="list-style-type: none"> <li>- <i>American Society for Plant Biologist.</i></li> <li>- <i>Botanicus.</i></li> </ul>



## 2. Facilities Required

Item	Resources
<p><b>Accommodation</b> Classrooms, laboratories, demonstration) (.rooms/labs, etc)</p>	<ul style="list-style-type: none"> <li>- A sufficient number of classrooms to accommodate students</li> <li>- Well-equipped practical laboratories to accommodate students</li> <li>- Virtual session provided by the blackboard (which allow discussion and sharing PowerPoint and videos.</li> </ul>
<p><b>Technology Resources</b> AV, data show, Smart Board, software,) (.etc)</p>	<ul style="list-style-type: none"> <li>- Data show</li> <li>- Wireless connection in the building for students and faculties.</li> </ul>
<p><b>Other Resources</b> Specify, e.g. if specific laboratory) equipment is required, list requirements or (attach a list</p>	<ul style="list-style-type: none"> <li>- A number of plant materials are required.</li> <li>- Anatomy microscope</li> <li>- Different types of seeds and plant fresh samples</li> <li>- Pots for seed germination</li> </ul>

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
- Effectiveness of teaching and assessment.	- Students.	Indirect - Questionnaires.
- The extent of achieving the course learning outcomes.	- Program committee. - Staff members. - Students.	Direct - Questionnaires. - Reports. - Meetings
- Quality of learning resources.	- Program leaders. - Peer Reviewer.	Direct & Indirect - Questionnaires. - Reports. - Meetings

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

Council / Committee	Biology Department Council
Reference No.	
Date	1/6/2022

