

**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**

**DEPARTMENT OF BOTANY**

**COURSE CURRICULUM**

<b>PART- A: Introduction</b>			
Program: Bachelor in Life Sciences (Diploma / Degree/Honors)		Semester – III/IV/V/VI/VII/VIII	Session: 2024-2025
1	Course Code	<b>BOGE -01 T</b>	
2	Course Title	<b>Elementary Botany</b>	
3	Course Type	<b>Generic elective (GE)</b>	
4	Pre-requisite (if, any)	<i>As per program</i>	
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to ➤ Understand the Basics of Botany and its branches. ➤ Get acquainted with complex interrelationship between organisms and environment. ➤ Develop a comprehensive understanding of the identification, cultivation, and processing of medicinal plants, and their chemical constituents. ➤ Utilize plants resources for livelihood.	
6	Credit Value	<b>3 Credits</b>	<i>Credit = 15 Hours - learning &amp; Observation</i>
7	Total Marks	Max. Marks: <b>100</b>	Min Passing Marks: <b>40</b>
<b>PART -B: Content of the Course</b>			
Total No. of Teaching-learning Periods (01 Hr. per period) - 45 Periods (45 Hours)			
Unit	Topics (Course contents)		No. of Period
<b>I</b>	<b>Basics of Plant Science:</b> Differences and resemblances between; living and nonliving plants and animals, plant and animal cell. Concept of prokaryotes and eukaryotes. Important features of thallophyta, Bryophyta, Pteridophyta, Gymnosperm and Angiosperm. Structure and function of a typical flowering plant.		<b>12</b>
<b>II</b>	<b>Branches of botany:</b> General idea, features, and significance; Anatomy, Cytology, Economic Botany, Ethnobotany, Forestry, Genetics, Histology, Microbiology, Paleobotany, Phytochemistry, Phytopathology, Plant biotechnology, Plant breeding, Plant ecology, Plant morphology, Plant physiology, Plant Taxonomy, etc,		<b>11</b>
<b>III</b>	<b>Plants for human welfare:</b> Plant Resources for Rural livelihood – Mahua, Tendu patta, Bamboo and Firewood. Ethnobotany in India: Methods to study Ethnobotany, Applications of Ethnobotany, ethnomedicinal plants and ethnoecology. Application of plant products for certain diseases- Cough and cold, Jaundice, Infertility, Diabetes, Blood pressure and Skin diseases.		<b>11</b>
<b>IV</b>	<b>Ancient Indian Botany:</b> Indigenous Medicinal Sciences; Definition and Scope-Ayurveda: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments, Siddha: Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine. Unani: History, concept. Charaksamhita. Ancient and modern Botanists and their contributions.-Charak, Jagdish Chandra Bose, B.P.Pal, Desikachary, K.C. Mehta M.S. Swaminathan etc.		<b>11</b>
Keywords	<i>Prokaryotes, Ethnobotany, Taxonomy, Ayurveda</i>		

**Signature of Convener & Members (CBos) :**

1. *R. S. Rao*

2. *M. S. Swaminathan*

3. *J. S. Chandra*

4. *M. S. Swaminathan*

5. *M. S. Swaminathan*

6. *Deep*

7. *Blair*

8. *M. S. Swaminathan*

9. *M. S. Swaminathan*

10. *Deep*

## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books Recommended –

1. College Botany Ganguli Kar and dutta , HIMALAYA Publishers
2. "Handbook of Medicinal Plants" by L.D. Kapoor
3. "Indian Medicinal Plants: An Illustrated Dictionary" by C.P. Khare
4. "Medicinal Plants in India: Conservation and Sustainable Utilization in the Emerging Global Scenario" edited by V.K. Gupta
5. "A Compendium of Medicinal Plants in India: An Introduction to Ayurveda" by S.L. Kochhar
6. A handbook of forest utilization by T. Mehta
7. Plants and human welfare by O.P.Sharma

#### Reference Books Recommended –

1. Charak Samhita
2. Medicinal Plants of India" by C.P. Khare

#### Online Resources–

- e-books and e-learning portals
- [www.swayam.ac.in](http://www.swayam.ac.in)
- [www.ignou.ac.in](http://www.ignou.ac.in)
- [www.egyankosh.ac.in](http://www.egyankosh.ac.in)
- [www.iitm.ac.in](http://www.iitm.ac.in)
- [www.eskillindia.org](http://www.eskillindia.org)
- [www.eshiksha.mp.gov.in](http://www.eshiksha.mp.gov.in)
- [www.vlab.co.in](http://www.vlab.co.in)
- [www.internshala.com](http://www.internshala.com)
- [www.ndl.iitkgp.ac.in](http://www.ndl.iitkgp.ac.in)

#### Online Resources–

#### e-Resources / e-books and e-learning portals

- <https://extension.oregonstate.edu/collection/botany-basics>
- <https://www.pbs.org/video/botany-basics-iiu2bl/>
- <https://efaidnbmnnnibpcajpcglclefindmkaj/https://www2.ca.uky.edu/agcomm/pubs/ho/ho96/ho96.pdf>
- <https://www.botanytoday.com/branches-of-botany/>
- <https://efaidnbmnnnibpcajpcglclefindmkaj/https://www.unanijournal.com/articles/94/3-1-11-206.pdf>
- [https://efaidnbmnnnibpcajpcglclefindmkaj/https://wgbis.ces.iisc.ac.in/biodiversity/sahyadri/documents/botany\\_history.pdf](https://efaidnbmnnnibpcajpcglclefindmkaj/https://wgbis.ces.iisc.ac.in/biodiversity/sahyadri/documents/botany_history.pdf)
- <https://vedpuran.files.wordpress.com/2016/07/charaksamhitaatrivedajigupt-vol-1.pdf>
- <https://egyankosh.ac.in/handle/123456789/89429>

## PART -D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:

Maximum Marks: 100 Marks

Continuous Internal Assessment (CIA): 30 Marks

End Semester Exam (ESE): 70 Marks

Continuous Internal Assessment (CIA): 30 (By Course Teacher)	Internal Test / Quiz-(2): 20 +20	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 30 Marks
	Assignment / Seminar - 10	
	Total Marks - 30	

### End Semester Exam (ESE): 70

Two section – A & B  
Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20 Marks  
Section B: Descriptive answer type qts..1out of 2 from each unit-4x10=40 Marks

### Name and Signature of Convener & Members of CBOs:

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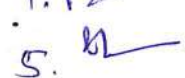
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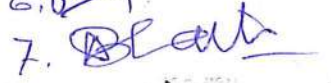
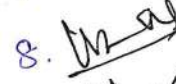


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**COURSE CURRICULUM**

<b>PART- A: Introduction</b>			
<b>Program: Bachelor in Life Sciences</b> <i>(Diploma / Degree/ Honors)</i>		<b>Semester –</b> III, IV, V, VI, VII, VIII	<b>Session: 2024-2025</b>
1	<b>Course Code</b>	<b>BOGE -01 P</b>	
2	<b>Course Title</b>	<b>Lab. Course -01 (Elementary Botany)</b>	
3	<b>Course Type</b>	<b>Laboratory course</b>	
4	<b>Pre-requisite (if, any)</b>	<b>As per program</b>	
5	<b>Course Learning Outcomes (CLO)</b>	At the end of this course, the students will be able to <ul style="list-style-type: none"> <li>➤ Understand structure of plant cell, prokaryotic cell and eukaryotic cell.</li> <li>➤ Identify pteridophytes of college campus.</li> <li>➤ Learn about the different types of plant tissues.</li> <li>➤ Learn about Ayurvedic system of medicine.</li> </ul>	
6	<b>Credit Value</b>	<b>1 Credits</b>	<b>Credit =30 Hours Laboratory or Field learning/Training</b>
7	<b>Total Marks</b>	<b>Max. Marks: 50</b>	<b>Min Passing Marks: 20</b>
<b>PART -B: Content of the Course</b>			
<b>Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)</b>			
<b>Module</b>	<b>Topics (Course contents)</b>		<b>No. of Period</b>
<b>Lab./Field Training/ Experiment Contents of Course</b>	<ol style="list-style-type: none"> <li>1. Microscopic study of plant cell.</li> <li>2. Microscopic study of prokaryotic (Bacteria) and eukaryotic cell (algae and fungi).</li> <li>3. Study of thallus structure of <i>Riccia</i> and <i>Marchantia</i>.</li> <li>4. Identification of different plants growing in college campus.</li> <li>5. Study of a typical flowering plant and it's parts.</li> <li>6. Study of internal structure of root and stem.</li> <li>7. Study of parenchyma, collenchyma and sclerenchyma.</li> <li>8. Study of medicinal plants of college campus.</li> <li>9. Study of plants used to cure cough and cold, jaundice and skin diseases.</li> <li>10. Visit to any local ayurvedic hospital / practitioner to understand Ayurveda.</li> </ol>		<b>30</b>
<b>Keywords</b>	<b><i>Prokaryotic, Parenchyma, Jaundice, Ayurveda.</i></b>		

**Signature of Convener & Members (CBoS) :**

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- [www.egvankosh.ac.in](http://www.egvankosh.ac.in)
- [www.iitm.ac.in](http://www.iitm.ac.in)
- [www.eskillindia.org](http://www.eskillindia.org)
- [www.eshiksha.mp.gov.in](http://www.eshiksha.mp.gov.in)
- [www.vlab.co.in](http://www.vlab.co.in)
- [www.internshala.com](http://www.internshala.com)
- [www.ndl.iitkgp.ac.in](http://www.ndl.iitkgp.ac.in)

#### Online Resources–

- e-Resources / e-books and e-learning portals
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5871155/>
- <https://cms.botany.org/home/careers-jobs/careers-in-botany/areas-of-specialization-in-botany.html>

## PART -D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

Continuous Internal Assessment (CIA): 15 (By Course Teacher)	Internal Test / Quiz-(2):	10 & 10	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
	Assignment/Seminar +Attendance -	05	
	Total Marks -	15	

End Semester Exam (ESE): 35	Laboratory / Field Skill Performance: On spot Assessment		Managed by Course teacher as per lab. status
	A. Performed the Task based on lab. work	- 20 Marks	
	B. Spotting based on tools & technology (written) –	10 Marks	
	C. Viva-voce (based on principle/technology)	- 05 Marks	

### Name and Signature of Convener & Members of CBoS:


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