

DEPARTMENT OF BOTANY				CLASS: II B.Sc. Zoology				
Sem	Course type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
I	Allied- I	20U3BAC1	Allied Botany - I	4	4	25	75	100

Course Objectives

1. Understand the diversity of plants and their economic importance.
2. Compare the life cycle patterns from lower to higher plants.
3. Discuss the structure and reproductive characters of different groups of plants.

Unit-I (10 Hours)

Plant Kingdom - Cryptogams and Phanerogams - salient features of Algae - Structure, reproduction and life cycle of *Caulerpa* - economic importance of Algae.

Unit-II: Fungi & Lichens(10 Hours)

General characters of Fungi - structure, reproduction and life cycle of *Puccinia* - economic importance of Fungi - Salient features of Lichens - structure and reproduction of *Usnea*.

Unit-III: Bryophytes & Pteridophytes (10 Hours)

General characters of Bryophytes - Structure, reproduction and life cycle of *Marchantia*. Salient features of Pteridophytes - Structure, reproduction and life cycle of *Lycopodium*.

Unit-IV: Gymnosperms (10 Hours)

General characters of Gymnosperms - structure, reproduction and life cycle of *Cycas* - economic importance of Gymnosperms.

Unit-V (20 Hours)

Taxonomy - Plant Nomenclature - Herbarium methods - Natural system of classification - vegetative characters, floral characters and economic importance of Rutaceae, Apocynaceae, Amaranthaceae and Poaceae.

Books for Study

1. Sharma OP(1992). Text Book of Algae, Tata McGraw Hill Publication Company Ltd., New Delhi, 1992.
2. Vashishta BR, Sinha AK & Singh VP (2011). Botany for Degree students Fungi, S. Chand Publishing Company, New Delhi.

Book for References

1. Rashid A (1999). An introduction to Pteridophyta, Vikas Publishing House Pvt. Ltd., 1999.
2. Vashishta BR, Sinha AK & Kumar A (2011). Botany for Degree students: Gymnosperms, S. Chand Publishing Company, New Delh.
3. Lawrence GHM (1969). Taxonomy of Vascular Plants, Oxford & IBH Publishing Company Pvt. Ltd., New Delhi.
4. Sambamurty AVSS (2009). Taxonomy of Angiosperms,I.K. International Publishing House Pvt. Ltd., New Delhi, 2009.

Web Resources

1. <https://www.easybiologyclass.com/?s=algae>
2. <https://www.britannica.com/search?query=fungi>
3. <https://www.britannica.com/science/lichen>
4. <https://indiabiodiversity.org>
5. <https://www.easybiologyclass.com/classification-of-gymnosperms-by-sporne-short-notes/>

Course Learning Outcomes:

	CLO Statement	Knowledge Level
CLO-1	Analyze the plant kingdom with specific groups and their features and economic importance	K4
CLO-2	Apply the characters for identification of fungi and lichens	K3
CLO-3	Understand the general characters and life cycle of Bryophytes and Pteridiophytes	K2
CLO-4	Examine the characters for grouping of plant kingdom	K2
CLO-5	Analyze the structure and reproduction in Gymnosperms	K4

Mapping Programme Specific Outcomes with Course Learning Outcome:

	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6	PSO-7	PSO-8	PSO-9
CLO-1	-	-	1	1	-	-	-	-	-
CLO-2	-	-	-	1	-	-	-	-	-
CLO-3	-	-	2	1	-	-	-	-	-
CLO-4	-	-	1	1	-	-	-	-	-
CLO-5	-	-	1	2	-	-	-	-	-

3-Advance application; 2- Intermediate level; 1- Basic level

Mapping Programme Outcomes with Course Learning Outcome:

	PO-1	PO-2	PO-3	PO-4	PO-5
CLO-1	3	2	3	2	3
CLO-2	3	-	2	3	2
CLO-3	2	2	3	-	3
CLO-4	-	1	-	1	2
CLO-5	-	1	-	-	-

3-Advance application; 2- Intermediate level; 1- Basic level

Lesson Plan:

Unit	Description	Staff Name	Hours	Mode
I	a) Plant Kingdom - Cryptogams and Phanerogams	-	2	Black Board
	b) Salient features of Algae	-	1	Discussion
	c) Structure & reproduction of Algae	-	2	Seminar
	d) Life cycle of <i>Caulerpa</i>	-	3	Power Point
	e) Economic importance of Algae	-	2	LMS
II	a) General characters of Fungi	-	2	Power Point
	b) Structure, reproduction of <i>Puccinia</i>	-	2	Black Board
	c) Life cycle of <i>Puccinia</i>	-	2	Power Point
	d) Economic importance of Fungi	-	1	Discussion
	e) Salient features of Lichens	-	1	Black Board
	f) Structure and reproduction of <i>Usnea</i> .	-	2	Virtual Lab
III	a) General characters of Bryophytes	-	2	Interaction
	b) Structure, reproduction of <i>Marchantia</i>	-	2	Black Board
	c) Life cycle of <i>Marchantia</i>	-	2	Power Point
	d) Salient features of Pteridophytes	-	1	Seminar
	e) Structure, reproduction of <i>Lycopodium</i>	-	1	Power Point
	f) Life cycle of <i>Lycopodium</i>	-	2	LMS
IV	a) General characters of Gymnosperms	-	3	Discussion
	b) Structure, reproduction of <i>Cycas</i>	-	5	Black Board
	c) Life cycle of <i>Cycas</i>	-	3	LMS
	d) Economic importance of Gymnosperms.	-	4	Black Board
V	a) Plant Nomenclature	-	2	Interaction
	b) Herbarium methods	-	3	Virtual Lab
	c) Natural system of classification	-	3	Black Board
	d) Vegetative & Floral characters	-	3	Power Point
	e) Economic importance of Rutaceae, Apocynaceae, Amaranthaceae and Poaceae.	-	4	Discussion
Total			60	

Course Designer: Dr. N. Janakiraman, Assistant Professor

Blue Print – Model for External Examination
Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

Sl. No	CLOs	K – Level	Section – A		Section – B		Section C (Either/ Choice)	Section D (Open Choice)
			MCQs		Short Answer			
			No. of Questions	K – Level	No. of Questions	K – Level		
1	CLO 1	Up to K 2	2	K1 or K2	1	K1	2(K1&K1)	1 (K2)
2	CLO 2	Up to K 3	2	K1 or K2	1	K1	2(K2&K2)	1 (K3)
3	CLO 3	Up to K 3	2	K1 or K2	1	K2	2(K3&K3)	1 (K3)
4	CLO 4	Up to K 4	2	K1 or K2	1	K2	2(K4&K4)	1 (K4)
5	CLO 5	Up to K 3	2	K1 or K2	1	K2	2(K3&K3)	1 (K3)
No. of Question to be asked			10		5		10	5
No. of Question to be answered			10		5		5	3
Mark for each question			1		2		5	10
Total Marks for each section			10		10		25	30

K1 - Remembering and recalling facts with specific answers

K2- Basic understanding of fact and stating main ideas with general answers

K3- Application oriented – Solving Problems

K4- Examining, analyzing, presentation and make inferences with evidences

Distribution of Section- wise marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	Total Marks	% of Marks without choice	Consolidated
K1	5	4	10	-	19	15.83	42%
K2	5	6	10	10	31	25.83	
K3	-	-	20	30	50	41.67	42%
K4	-	-	10	10	20	16.67	16%
Total Marks	10	10	50	50	120	100.00	100%

Blue Print - Model for Internal Examination
Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

Sl. No	CLOs	K – Level	Section – A		Section – B		Section C (Either/ Choice)	Section D (Open Choice)	Total
			MCQs		Short Answer				
			No. of Questions	K – Level	No. of Questions	K - Level			
1	CLO 1	Up to K 2	2	K1&K2	1	K1	2(K2&K2)	2 (K2/K3)	
2	CLO 2	Up to K 3	2	K1&K2	2	K2	2(K3&K3)	1 (K4)	
No. of Question to be asked			4		3		4	3	14
No. of Question to be answered			4		2		2	2	10
Mark for each question			1		2		5	10	
Total Marks for each section			4		6		10	20	40

K1 - Remembering and recalling facts with specific answers

K2- Basic understanding of fact and stating main ideas with general answers

K3- Application oriented – Solving Problems

K4- Examining, analyzing, presentation and make inferences with evidences

Distribution of Section- wise Marks with K Levels *

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	Total Marks	% of Marks without choice	Consolidated
K1	2	2		-	4	6.67	50
K2	2	4	10	10	26	43.33	
K3	-	-	10	10	20	33.33	33
K4	-	-		10	10	16.67	17
Total Marks	4	6	20	30	60	100.00	100%