

# **VIDYASAGAR UNIVERSITY**

Midnapore, West Bengal



*PROPOSED CURRICULUM & SYLLABUS (DRAFT) OF*

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**BACHELOR OF SCIENCE WITH BOTANY  
(MULTIDISCIPLINARY STUDIES)**

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**3-YEAR UNDERGRADUATE PROGRAMME**  
*(w.e.f. Academic Year 2023-2024)*

*Based on*

**Curriculum & Credit Framework for Undergraduate Programmes  
(CCFUP), 2023 & NEP, 2020**

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VIDYASAGAR UNIVERSITY, PASCHIM MIDNAPORE, WEST BENGAL

**VIDYASAGAR UNIVERSITY**  
**BACHELOR OF SCIENCE IN LIFE SCIENCES with BOTANY**  
*(under CCFUP, 2023)*

Level	YR.	SEM	Course Type	Course Code	Course Title	Credit	L-T-P	Marks				
								CA	ESE	TOTAL		
B.Sc. in Life Sc. with Botany	1 <sup>st</sup>	I	<b>SEMESTER-I</b>									
			Major (Disc.-A1)	BOTPMJ101	T: Plant Groups and Texa; P: Practical <i>(To be studied by the students taken Botany as Discipline-A)</i>			4	3-0-1	15	60	75
			SEC	SEC01	<i>To be chosen from SEC-01 of Discipline A/B/C of their Hons. prog.</i>			3	0-0-3	10	40	50
			AEC	AEC01	Communicative English-1 <i>(common for all programmes)</i>			2	2-0-0	10	40	50
			MDC	MDC01	Multidisciplinary Course-1 <i>(to be chosen from the list )</i>			3	3-0-0	10	40	50
			VAC	VAC01	VAC-01: ENVS <i>(common for all programmes)</i>			4	2-0-2	50	50	100
			Minor (Disc.-C1)	BOT MI 01/C1	T: Plant Science-I; P: Practical <i>(To be studied by the students taken Botany as Discipline-C)</i>			4	3-0-1	15	60	75
		<b>Semester-I Total</b>						<b>20</b>				<b>400</b>
		II	<b>SEMESTER-II</b>									
			Major (Disc.-B1)		<i>To be decided</i> <i>(Same as like A1 for students taken Botany as Discipline-B )</i>			4	3-0-1	15	60	75
			SEC	SEC02	<i>To be chosen from SEC-02 of Discipline A/B/C of their Hons. prog.</i>			3	0-0-3	10	40	50
			AEC	AEC02	MIL-1 <i>(common for all programmes)</i>			2	2-0-0	10	40	50
			MDC	MDC02	Multi Disciplinary Course-02 <i>(to be chosen from the list )</i>			3	3-0-0	10	40	50
			VAC	VAC02	VAC-02 <i>(to be chosen from the list)</i>			4	4-0-0	10	40	50
			Minor (Disc.-C2)	BOT MI 02/C2	T: Plant Science-II; P: Practical <i>(To be studied by the students taken Botany as Discipline-C)</i>			4	3-0-1	15	60	75
			Summer Intern.	CS	Community Service			4	0-0-4	-	-	50
		<b>Semester-II Total</b>						<b>24</b>				<b>400</b>
		<b>TOTAL of YEAR-1</b>						<b>44</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>800</b>

P MJ= Major Programme (Multidisciplinary), MI = Minor, A/B = Choice of Major Discipline; C= Choice of Minor Discipline; SEC = Skill Enhancement Course, AEC = Ability Enhancement Course, MDC = Multidisciplinary Course, VAC = Value Added Course; CA= Continuous Assessment, ESE= End Semester Examination, T = Theory, P= Practical, L-T-P = Lecture-Tutorial-Practical, MIL = Modern Indian Language, ENVS = Environmental Studies

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MAJOR (MJ)

**MJ A1/B1: Plant Groups and Texa**

**Credits 04 (FM: 75)**

**MJ A1/B1T: Plant Groups and Texa**

**Credits 03 [45L]**

**Course contents:**

UNIT	Topic	No. of Lectures
1	<b>Introduction to microbial world-</b> Whittaker's five-kingdom system <b>Virus:</b> General characteristics, classification (Baltimore), Economic importance. <b>Bacteria:</b> General characteristics, Bergey's Classification, Economic importance. <b>Algae:</b> General characteristics; habitat, classification (Van Den Hoek, 1995), lifecycle patterns of <i>Volvox</i> and <i>Batrachospermum</i> , Economic importance. <b>Fungi:</b> General characteristics, Classification (Ainsworth, up to Order), life cycle patterns of <i>Rhizopus</i> and <i>Agaricus</i> , economic importance. Brief account of lichen and mycorrhiza.	15
2	<b>Bryophytes:</b> General characteristics, classification (Proskauer, 1957), morphology, anatomy and reproduction of <i>Riccia</i> , <i>Anthoceros</i> and <i>Funaria</i> , economic importance of bryophytes. <b>Pteridophytes:</b> General characteristics, Classification (Sporne, 1975), morphology, anatomy and reproduction of <i>Lycopodium</i> , <i>Adiantum</i> and <i>Marsilea</i> . Economic importance	15
3	<b>Gymnosperms:</b> General characteristics, Classification (Sporne, 1965), morphology, anatomy and reproduction of <i>Cycas</i> and <i>Pinus</i> . Economic importance. <b>Paleobotany:</b> Geological time scale and important events, Types of plant fossils.	15

**MJ A1/B1P: Practical**

**Credits 01**

**Course Outline:**

1. Electron micrographs/Models of viruses – T-Phage and Sars-CoV2.
2. Study of Curd organisms through Gram staining.
3. Study of vegetative and reproductive structure of *Volvox*, and *Batrachospermum*.
4. Study of morphology and reproductive structure of *Rhizopus* and *Agaricus*.
5. Study of morphology of thallus and reproductive structure of *Riccia*, *Anthoceros* and *Funaria*.
6. Study of morphology vegetative and reproductive structure of *Lycopodium*, *Adiantum* and *Marsilea*.
7. Study of morphology and vegetative structure of *Cycas* and *Pinus*.
8. Study of fossil types (impressions, compressions, petrification).

**MINOR (MI)**

**MI-1/C1: Same as Minor-1 (BOTMI01) of Botany (Hons) programme**

**Credits 04  
Full Marks: 75**

**MI-2/C2: Same as Minor-2 (BOTMI02) of Botany (Hons) programme**

**Credits 04  
Full Marks: 75**

**SKILL ENHANCEMENT COURSE (SEC)**

**TO BE CHOSEN FROM THE BUCKET OF SECs OF SELECTED DISCIPLINE A/B/C  
(As per A/B/C Hons. Prog. Syllabus)**