



"Education for Knowledge, Science, and Culture"  
- Shikshanmaharshi Dr. Bapuji Salunkhe

**Shri Swami Vivekanand Shikshan Sanstha's  
Vivekanand College, Kolhapur  
(Autonomous)**



**Department of Botany**

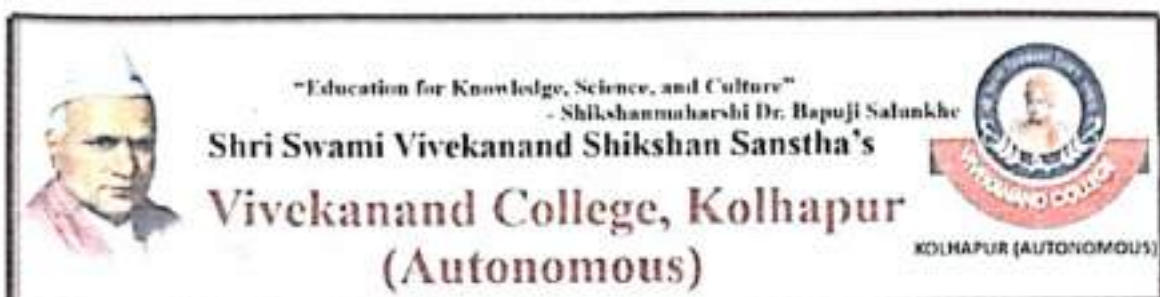
**Annual Teaching Plan**

**2022-2023**

Annual Teaching Plan (2022-2023)

Department of Botany





**Department of Botany  
Annual Teaching Plan  
(2022-2023)**

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**Head**  
 Department of Botany  
 Department of Botany  
 Vivekanand College  
 Kolhapur



  
**Principal**  
 Vivekanand College  
 Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Bhaurav Tukaram Dangat

Programme: B.Sc. I

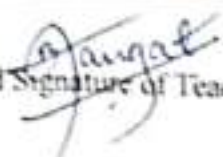
Semester: II

Subject: Botany

Course Title: "Angiosperms Taxonomy"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<p align="center"><b>Unit 1.</b> <b>Angiosperms Taxonomy</b></p>	<p><b>1a.</b> Salient features of Angiosperms. <b>1b.</b> Taxonomy – Introduction, Function ( Identification, Nomenclature and Classification), Importance.</p>
04	04	08		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<p align="center"><b>Unit.1:</b> <b>"Angiosperms Taxonomy "</b></p>	<p><b>1c.</b> Salient features of International Code of Botanical Nomenclature (ICBN).</p>
04	04	08		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<p align="center"><b>Unit.1:</b> <b>"Angiosperms Taxonomy "</b></p>	<p><b>1d.</b> Bentham and Hooker's System of classification with its Merits and demerits.</p>
04	04	08		
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<p align="center"><b>Unit.1:</b> <b>"Angiosperms Taxonomy "</b></p>	<p><b>1e.</b> Morphological, floral, distinguishing characters and economic importance of following families. i. Malvaceae ii. Solanaceae</p>
04	04	08		
Month: May			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<p align="center"><b>Unit.1:</b> <b>"Angiosperms Taxonomy "</b></p>	<p>iii. Nyctaginaceae iv. Amaryllidaceae</p>
02	04	06		

Name and Signature of Teacher




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Kolhapur

# Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Academic Year: 2022-2023

## Annual Teaching Plan

Name of the teacher: **Dr. Bhaurav Tukaram Dangat**

Programme: **B.Sc. II**

Semester: **IV**

Subject: **Botany**

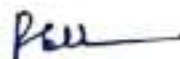
Course Title: **"Plant Anatomy and Plant Metabolism"**

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit: II Tissue and Tissue System</b>	<b>2a. Meristem:</b> <b>a)</b> Introduction, Characteristics and Classification of meristems based on position <b>b)</b> Theories of structural development- i) Apical cell theory
04	04	08		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit: II Tissue and Tissue System</b>	ii) Histogen theory iii) Tunica Corpus theory.
04	04	08		
Month: March			Module/Unit:	Sub-units planned
04	04	08	<b>Unit: II Tissue and Tissue System</b>	<b>2b. Permanent tissue:</b> i) Simple tissue- Parenchyma, Collenchyma and Sclerenchyma ii) Complex tissue: Xylem and Phloem

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## Department of Botany

Academic Year: 2022-2023

### Annual Teaching Plan

Name of the teacher: **Dr. Bhaurav Tukaram Dangat**

Programme: **B.Sc. II**

Semester: **IV**

Subject: **Plant Protection**

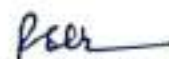
Course Title: **"Weed Science and Insect Pest"**

Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Section : I</b> <b>"Weed Science"</b>	<b>Unit II.</b> Study of following weeds with reference to a) Gross morphology b) Reproduction c) Ecology d) Dispersal e) Management
04	04	08		
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Section : I</b> <b>"Weed Science"</b>	1. <i>Argemone Mexicana</i> 2. <i>Portulaca oleracea</i> 3. <i>Parthenium hysterophorus</i> 4. <i>Eupatorium</i> species
04	04	08		
Month: May			Module/Unit:	Sub-units planned
04	04	08	<b>Section : I</b> <b>"Weed Science"</b>	5. <i>Alternanthera sessilis</i> 6. <i>Amaranthus spinosus</i> 7. <i>Cassia tora</i> 8. <i>Cyperus rotundus</i> 9. <i>Cynodon dactylon</i>

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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**

Academic Year: 2022-2023

**Annual Teaching Plan**

Name of the teacher: **Dr. Bhaurav Tukaram Dangat**

Programme: **B.Sc. III**

Semester: **VI**

Subject: **Botany**

Course Title: **"Horticulture, Forestry and Herbal Technology"**

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Section II</b> <b>Unit : 2</b> <b>Gardening and Ornamental Plants</b>	<b>2a:</b> Gardening- Definition, Objective, Types of Gardening
02				
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Gardening and Ornamental Plants</b>	<b>2a:</b> Importance and Landscape Garden
03				
Month: March			Module/Unit:	Sub-units planned
03			<b>Gardening and Ornamental Plants</b>	<b>2b:</b> Ornamental plants: Herbs, Shrubs, Trees
Month: April			Module/Unit:	Sub-units planned
03			<b>Gardening and Ornamental Plants</b>	<b>2b:</b> Indoor plants, Lawn and Climber

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**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany

Academic Year: 2022-2023

**Annual Teaching Plan**

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme - B.Sc. I

Semester- I

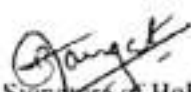
Subject: Botany

Course Title: " Biodiversityin Microbes , Algae and Fungi ."

Month -August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper -I Section -I Unit I.  Microbes	1a.- Virus : Discovery,  General characters, DNA virus and RNA virus
04	-	04		
Month -September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Microbes	Economic importance of virus.  1b.- Bacteria : Discovery,  General Characters
04	-	04		
Month- October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Microbes	Economic importance of virus.  1b.- Bacteria : Discovery,  General Characters
03	-	03		
Month- November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Microbes	Cell structure, Mode of  Reproduction, Economic  Importance
04	-	04		

  
Name and Signature of Teacher  
( Dr. A. R. Kasarkar )



  
Name and Signature of HoD  
( Dr. B. T. Dangot )

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Department of Botany

Academic Year: 2022-2023

**Annual Teaching Plan**

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme - B. Sc. II

Semester- III

Subject: Botany

Course Title: " Taxonomic Literature and Plant Families ."

Month - August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper -III Section - I Unit III.	Flora, Monograph, Revisions,
03	-	03	Taxonomic Literature	Manuals, Journals, Reference Books
Month - September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Taxonomic Literature &	Research Papers, Websites and
04	-	04	Plant Families	Catalogues Study of family Amaranthaceae
Month- October			Module/Unit:	Sub-units planned
03	-	03	Plant Families	Study of family Orchidaceae, Liliaceae

Name and Signature of Teacher  
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## Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Academic Year: 2022-2023

### Annual Teaching Plan

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme - B. Sc. II

Semester- III

Subject: Plant Protection Course Title: " General Agriculture and Plant Pathology ."

Month -August			Module/Unit.	Sub-units planned
Lectures	Practicals	Total	Paper -I Section - I Unit IV.	Chemical Methods
04	08	12	Methods of Plant Protection Part -II	
Month -September			Module/Unit.	Sub-units planned
Lectures	Practicals	Total	Methods of Plant Protection Part -II	Biological Methods Legal Methods
04	08	12		
Month- October			Module/Unit.	Sub-units planned
04	08	12	Methods of Plant Protection Part -II	Legal Methods Crop Resistance

Name and Signature of Teacher

(Dr. A. R. Kasarkar)

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## Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Academic Year: 2022-2023  
Annual Teaching Plan

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme - B. Sc. III

Semester- V

Subject: Botany

Course Title: " Cytological and Research Technique in Life Science ."

Month -August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper -IX Section - I Unit II.	2a. Glyoxisomes, Peroxisomes
03	05	09	Cell Organelle	- Structure , Composition and Functions
Month -September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Cell Organelle	Lysosomes - Structure , Composition and Functions
05	10	15		2b. Cell Cycle
3onth- October			Module/Unit:	Sub-units planned
03	10	13	Cell Organelle	2b. Cell Cycle 2c. Apoptosis

Name and Signature of Teacher  
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**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany  
Academic Year: 2022-2023  
**Annual Teaching Plan**

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme - B.Sc. I

Semester- II

Subject: Botany

Course Title: " Angiosperms Taxonomy ."

Month - <b>January</b>			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper -IV Section - I Unit I. Angiosperms Taxonomy	Salient Features of Angiosperms, Taxonomy- Introduction, Function, Importance
04	-	04		
Month - <b>February</b>			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Angiosperms Taxonomy	ICBN, Bentham and Hookers System of Classification
04	-	04		
Month- <b>March</b>			Module/Unit:	Sub-units planned
04	-	04	Angiosperms Taxonomy	Family Malvaceae, Solanaceae, Nyctaginaceae, Amaryllidaceae

  
Name and Signature of Teacher  
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Name and Signature of HoD  
(Dr. B. T. Dangat)  
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**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany

Academic Year: 2022-2023

**Annual Teaching Plan**

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme - B. Sc. II

Semester- IV

Subject: Botany

Course Title: " Plant Anatomy and Plant Metabolism ."

Month - <b>January</b>			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper -IV Section - II Unit IV Seed Dormancy and Germination	Concept of Dormancy, Causes and types of seed dormancy
03	-	03		
Month - <b>February</b>			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Seed Dormancy and Germination	Methods of breaking of seed dormancy. Seed Germination
04	-	04		
Month- <b>March</b>			Module/Unit:	Sub-units planned
04	-	04	Seed Dormancy and Germination	Types of Seed Germination, Factors affecting on seed germination

Name and Signature of Teacher

(Dr. A. R. Kasarkar)

Name and Signature of HoD

(Dr. B. T. Dangat)

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Department of Botany  
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Kolhapur



## Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Academic Year: 2022-2023  
Annual Teaching Plan

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme - B. Sc. II

Semester- IV

Subject: Plant Protection Course Title: " Weed Science and Insect Pest ."

Month -January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper -IV Section -I Unit IV	Nematode, Birds
03	16	19	Non Insect pest and House Hold Pest	
Month -February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Non Insect pest and House Hold Pest	Rats, House hold pest
04	16	20		
Month- March			Module/Unit:	Sub-units planned
04	16	20	Non Insect pest and House Hold Pest	<i>Drosophila</i> , House fly and Mosquito
Month- April			Module/Unit:	Sub-units planned
-	08	08		



Name and Signature of Teacher

(Dr. A. R. Kasarkar)



Name and Signature of HoD

(Dr. B. T. Dangat)

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## Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Academic Year: 2022-2023

### Annual Teaching Plan

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme - B. Sc. III

Semester- VI

Subject: Botany

Course Title: " Horticulture , Forestry and Herbal Technology ."

Month -January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper -XVI Section - II	Introduction and Importance
03	15	18	Unit I	Methods of Propagation :
			Horticulture	Asexual
Month -February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Horticulture	Methods of Propagation : Sexual
04	20	24		Plant Nursery : Introduction,
				Types of Nursery.
Month- March			Module/Unit:	Sub-units planned
04	20	24	Horticulture	Infrastructure and requirement,
				Fertilizers and pesticides
				Commercial importance

Name and Signature of Teacher

(Dr. A. R. Kasarkar)

Name and Signature of HoD

(Dr. B. T. Dangat)

Head

Department of Botany  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2021-2022

Name of the teacher: **Dr. Jyoti Mahadev Gorule**

Programme: **B. Sc. I**

Semester: **I**

Subject: **Botany**

Course Title: **"Biodiversity in cryptogams and Gymnosperms"**

Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	-	-
00	00	00		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
00	03	03		
Month: October			Module/Unit:	Sub-units planned
00	04	04		
Month: November			Module/Unit:	Sub-units planned
00	03	04		
Month: December			Module/Unit:	Sub-units planned
00	02	02		

*J.M. Gorule*  
 Name and Signature of Teacher  
 [Dr. J.M. Gorule]

*J. Gangat*  
 Name and Signature of HoD  
 Department of Botany  
 Vivekanand College  
 Kolhapur



Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2021-2022

Name of the teacher: Dr. Jyoti Mahadev Gorule

Programme: B. Sc. I

Semester: II

Subject: Botany

Course Title: "Plant Ecology and Taxonomy" and "Biodiversity in cryptogams and Gymnosperms"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Botany - Paper II Section-I Unit- I "Plant Ecology and Taxonomy"	1a. Introduction and definition of Ecology
02	01	03		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Botany - Paper II Section-I Unit- I "Plant Ecology and Taxonomy"	1b. Ecological factors: i. Edaphic factors- Soil: Origin and formation.
02	03	05		
Month: March			Module/Unit:	Sub-units planned
02	04	06	Botany - Paper II Section-I Unit- I "Plant Ecology and Taxonomy"	Composition- soil water soil air, soil temperature soil organic matter and soil microbes.
Month: April				
02	04	06	Botany - Paper II Section-I Unit- I "Plant Ecology and Taxonomy"	ii. Climatic factors- Light Temperature, Precipitation
Month: May				
01	00	01	Botany - Paper II Section-I Unit- I "Plant Ecology and Taxonomy"	atmospheric humidity and Rainfall

Name and Signature of Teacher  
[Dr. J.M. Gorule]



Name and Signature of HoE  
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Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2021-2022

Name of the teacher: Dr. Jyoti Mahadev Gorule

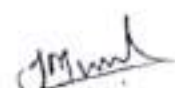
Programme: B. Sc. II

Semester: III

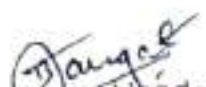
Subject: Plant Protection

Course Title: "General Agriculture and Plant Pathology"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	-	-
0	00	00		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I: 2 b: Advanced Agricultural practices with reference to concept and applications	A) Organic Farming B) Transgenic methods ( <i>Agrobacterium</i> mediated gene transfer ), Examples of Transgenic crops.
02	00	02		
Month: October			Module/Unit:	Sub-units planned
02	00	02	Unit. III. Methods of Plant Protection part -I .	3a: Cultural methods – Tillage, crop rotation, trap crops, fertilizer applications 3b: Mechanical methods – Field sanitation, Hand picking.
Month: November			Module/Unit:	Sub-units planned
03	00	03	Unit. III. Methods of Plant Protection part -I .	Destruction of infected plants / plant parts Destruction of egg masses, light traps, use of sticky bands, bagging for the pests.
Month: December			Module/Unit:	Sub-units planned
01	00	01	Unit. III. Methods of Plant Protection part -I .	3c: Physical methods – Heat and soil solarisation

  
Name and Signature of Teacher  
( Dr. J. M. Gorule )



  
Name and Signature of HOD  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: ~~2021-2022~~ 2022-2023

Name of the teacher: **Dr. Jyoti Mahadev Gorule**

Programme: **B. Sc. II** Semester: **IV**

Subject: **Plant Protection**

Course Title: **"Weed Science and Insect Pest"**

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	-	-
00	00	00		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: Unit . II. Study of insect pests	Jowar – Stem borer Sugarcane – White grub
03	00	03		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: Unit . II. Study of insect pests	Gram – Pod borer Mango – Hoppers Brinjal – Fruit borer
04	00	04		
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: Unit . II. Study of insect pests	Rose – Bud borer Rice Weevil
03	00	03		
Month: May			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: Unit . II. Study of insect pests	Pulse beetle
02	00	02		

*J.M. Gorule*  
 Name and Signature of Teacher  
 [Dr. J.M. Gorule]



*Jyoti Mahadev Gorule*  
 Name and Signature of HoD  
 Department of Botany  
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 Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Jyoti Mahadev Gorule**


Programme: **B. Sc. III**

Semester: **V**

Subject: **Botany**

Course Title: **"Microbiology, Plant Pathology and Biofertilizers" and Plant Systematics and Paleobotany**

Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	"Microbiology, Plant Pathology and Biofertilizers" Section – II Unit : I Microbiology	Introduction and Definition
01	00	01		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	"Microbiology, Plant Pathology and Biofertilizers" Section – II Unit : I Microbiology	Methods of Microbiology Micro-organisms in Biological World
03	00	03		
Month: October			Module/Unit:	Sub-units planned
01	00	01	"Microbiology, Plant Pathology and Biofertilizers" Section – II Unit : I Microbiology	Micro-organisms in Biological World
Month: November			Module/Unit:	Sub-units planned
04	00	04	"Microbiology, Plant Pathology and Biofertilizers" Section – II Unit : I Microbiology Plant Systematics and Paleobotany Section – II Unit : III Plant Families	Scope of microbes in Industry and Environment  Apiaceae
Month: December			Module/Unit:	Sub-units planned
01	00	01	Section – II Unit : III Plant Families	Rubiaceae

  
Name and Signature of Teacher  
[J.M. Gorule]



  
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Department of Botany  
Annual Teaching Plan

Academic Year: 2021-2022

Name of the teacher: Dr. Jyoti Mahadev Gorule

Programme: B. Sc. III

Semester: VI

Subject: Botany

Course Title: Biostatistics, Economic Botany and Ethnobotany",

"Horticulture, Forestry and Herbal Technology"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Biostatistics, Economic Botany and Ethnobotany Section II: Unit III Economic Botany II	Beverages- Tea and Coffee Fiber Yielding Plants- Cotton and <i>Hibiscus cannabinis</i>
04	00	04		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Biostatistics, Economic Botany and Ethnobotany Section II: Unit III Economic Botany II	Oil Yielding Plants- <i>Pongamia pinnata</i> and Sunflower Dye Yielding Plants- <i>Bixa</i> and <i>Lawsonia</i>
04	00	04		
Month: March			Module/Unit:	Sub-units planned
04	00	04	Horticulture, Forestry and Herbal Technology Section II: Unit III Forestry	3a: Introduction, Forest types of India 3b: Wild life and Biosphere reserves
Month: April			Module/Unit:	Sub-units planned
04	00	04	Horticulture, Forestry and Herbal Technology Section II: Unit III Forestry	3c: Social and Agricultural Forestry 3d: Forest research education and Training institutions
Month: May			Module/Unit:	Sub-units planned
02	00	02	Horticulture, Forestry and Herbal Technology Section II: Unit III Forestry	3e: Forest Acts 3f: Different Plant as a forest products

Name and Signature of Teacher  
[Dr. J.M. Gorule]



Name and Signature of HoD  
Department of Botany  
Vivekanand College  
Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2021-2022

Name of the teacher: Dr. Jyoti Mahadev Gorule


Programme: B. Sc. II

Semester: III

Subject: Botany

Course Title: "Taxonomy, Embryology and Plant Physiology"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
0	01	01		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
00	03	03		
Month: October			Module/Unit:	Sub-units planned
00	03	03		
Month: November			Module/Unit:	Sub-units planned
04	04	04		
Month: December			Module/Unit:	Sub-units planned
00	02	02		

  
 Name and Signature of Teacher  
 [Dr. J.M. Gorule]

  
 Name and Signature of HoD  
 Head  
 Department of Botany  
 Vivekanand College  
 Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2021-2022

Name of the teacher: Dr. Jyoti Mahadev Gorule

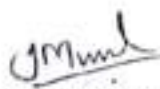
Programme: B. Sc. II

Semester: IV


Subject: Botany

Course Title: "Taxonomy, Embryology and Plant Physiology"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
00	00	00		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
00	04	04		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
00	04	04		
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
00	03	03		
Month: May			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
00	01	01		

  
 Name and Signature of Teacher  
 [Dr. J.M. Gorule]



  
 Name and Signature of HoD  
 Department of Botany  
 Vivekanand College  
 Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**  
Department of Botany  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Annapurna Ram Alvikar**

Programme : **B.Sc I**

Semester: **II**

Subject: **Botany**

Course Title: **"Plant Ecology"**

Month : Jan			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I : Unit I – Ecological factors and <b>Plant Communities</b>	Ia: Introduction,
01	00	01		
Month : February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I : Unit I – Ecological factors and <b>Plant Communities</b>	Definition of Ecology Ib: Ecological Factors:
03	00	03		
Month : March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I : Unit I – Ecological factors and <b>Plant Communities</b>	i: Edaphic factors: Soil: Origin and Formation. ii ; Climatic factors
04	00	04		
Month : April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I : Unit I – Ecological factors and <b>Plant Communities</b>	ii : Climatic factors iii: Ecological adaptations
02	00	02		
Month : May			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I : Unit I – Ecological factors and <b>Plant Communities</b>	iii: Ecological adaptations
01	00	01		

Name and Signature of Teacher  
(Dr. Annapurna. R. Alvikar)



Name and Signature of HoD  
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**Vivekanand College, Kolhapur (Autonomous)**  
 Department of Botany  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Annapurna Ram Alvikar**


Programme : **B.Sc II**

Semester: **III**

Subject: **Botany**

Course Title: **"Plant Physiology"**

Month : September			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section II : Unit III : Photosynthesis	3a: Introduction: Ultrastructure of Photosynthetic apparatus 3b: Photosynthetic pigments
04	04	08		
Month : October			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section II : Unit III : Photosynthesis	3c: Mechanism of Photosynthesis a) : Light Reactions- Cyclic Photophosphorylation
02	02	04		
Month : November			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section II : Unit III : Photosynthesis	b) Dark reaction c) CAM pathway
04	04	08		
Month : December			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section II : Unit III : Photosynthesis	3d: Significance of Photosynthesis
02	02	04		

  
 Name and Signature of Teacher  
 (Dr. Annapurna. R. Alvikar)



  
 Name and Signature of HoD  
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 Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**  
 Department of Botany  
 Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Annapurna Ram Alvikar

Programme : B.Sc II

Semester: IV

Subject: Botany

Course Title: "Plant Physiology"

Month : January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section-II: Unit I: 'Enzymes'	1a. Introduction
01	00	01		
Month : February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section-II: Unit I: 'Enzymes'	1a. Chemical nature and Properties of enzymes, Classification Nomenclature of Enzymes
04	04	08		
Month : March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section-II: Unit I: 'Enzymes'	1b. Mechanism of enzymes action-Lock and Key hypothesis 1c. Factors affecting on enzyme activity-
03	04	07		
Month : April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section-II: Unit I: 'Enzymes'	1d. Allosteric modification and Feedback inhibition
02	02	04		
Month : May			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section-II: Unit I: 'Enzymes'	1d. Feedback inhibition
01	00	01		

Name and Signature of Teacher

(Dr. Annapurna. R. Alvikar)



Name and Signature of HoD

Head  
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**Vivekanand College, Kolhapur (Autonomous)**  
Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: **Dr. Annapurna Ram Alvikar**

Programme : **B.Sc III**

Semester: **V**

Subject: **Botany**

Course Title: **"Plant Biochemistry and Stress Physiology"**

Month : August			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section-I: Unit 2: 'Lipid Metabolism'	2a. Introduction,
01	00	01		
Month : September			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section-I: Unit 2: 'Lipid Metabolism'	2a. classification of lipids 2b. Properties of Fatty acids – Steric acid and Palmatic acid
03	00	03		
Month : October			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section-I: Unit 2: 'Lipid Metabolism'	2b. Properties of Fatty acids –and Linolenic acid. 2c. Beta oxidation
03	00	03		
Month : November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section-I: Unit 2: 'Lipid Metabolism'	2d. Glyconeogenesis
02	00	02		
Month : December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section-I: Unit 2: 'Lipid Metabolism'	2e. Significance of Lipids.
01	00	01		

Name and Signature of Teacher  
(Dr. Annapurna. R. Alvikar)



Name and Signature of HoD  
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Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**  
 Department of Botany  
 Annual Teaching Plan

Academic Year: **2022-2023**

Name of the teacher: **Dr. Annapurna Ram Alvikar**

Programme : **B.Sc III**

Semester: **VI**

Subject: **Botany**

Course Title: **"Molecular Biology and Biotechnology"**

Month : January			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section-I: Unit 2: <b>'Recombinant DNA Technology'</b>	2a. Introduction and Principle
01	00	01		
Month : February			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section-I: Unit 2: <b>'Recombinant DNA Technology'</b>	2b. Enzymes involved in recombinant DNA technology,
03	00	03		
Month : March			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section-I: Unit 2: <b>'Recombinant DNA Technology'</b>	2c. Cloning vectors- (Plasmid, Bacteriophage and Cosmids)
03	00	03		
Month : April			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section-I: Unit 2: <b>'Recombinant DNA Technology'</b>	2d. Gene amplification: PCR techniques
02	00	02		
Month : May			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Section-I: Unit 2: <b>'Recombinant DNA Technology'</b>	2d. Gene amplification: PCR techniques
01	00	01		

Name and Signature of Teacher  
 (Dr. Annapurna. R. Alvikar)



Name and Signature of HoD  
 Head  
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**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr.Sarika Dipak Patil.

Programme: B. Sc. III


Semester: V

Subject: Botany

Course Title: "Cytology and Research Techniques in life sciences and Microbiology, Plant Pathology and Biofertilizers"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section I:  Unit II: Cell Organelles	Introduction Glyoxisomes
02	--	02		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Unit 1: Cell as a unit of life	Peroxisomes and Lysosomes- Structure,Function and Composition
03	--	03		
Month: October			Module/Unit:	Sub-units planned
03	--	03	Unit 1: Cell as a unit of life	Cell Cycle Apoptosis

  
(Dr. Sarika D. Patil).  
Name and Signature of Teacher

  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Sarika Dipak Patil.**

Programme: **B. Sc. III**

Semester: **VI**

Subject: **Botany**

Course Title: **Genetics and Plant breeding**

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I: <b>Unit I: Heredity</b>	Introduction
02	--	02		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit I: Heredity</b>	Terminologies
02	--	02		
Month: March			Module/Unit:	Sub-units planned
02	--	02	<b>Unit I: Heredity</b>	Laws of Inheritance Monohybrid and Dihybrid
Month: April			Module/Unit:	Sub-units planned
03	--	03	<b>Unit I: Heredity</b>	Multiple Allelism

  
**(Dr. Sarika D. Patil.)**  
 Name and Signature of Teacher

  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr.Sarika Dipak Patil.

Programme: B. Sc. II

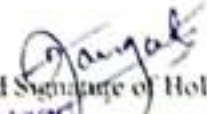
Semester: III

Subject: Botany

Course Title: "Taxonomy, Embryology and Plant Physiology"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals- II	Total	Section II:  <b>Unit IV : Respiration</b>	Introduction, Types of Respiration Glycolysis ETS in mitochondria
03	06	09		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit IV : Respiration</b>	Formation of Acetyl CO A TCA Cycle
02	08	10		
Month: November			Module/Unit:	Sub-units planned
02	08	10	<b>Unit IV : Respiration</b>	Significance Factors affecting on Respiration

  
 (Dr. Sarika D. Patil.)  
 Name and Signature of Teacher

  
 Name and Signature of HoD  
 HOD  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Sarika Dipak Patil.**

Programme: **B. Sc. II**

Semester: **IV**

Subject: **Botany**

Course Title: **"Plant Anatomy and Plant Metabolism"**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals- II	Total	<b>Section I: Plant Anatomy Unit IV: Plant Adaptations</b>	Mangrove Biology
02	03	05		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit IV: Plant Adaptations</b>	Xeric Adaptations
02	03	05		
Month: April			Module/Unit:	Sub-units planned
03	04	07	<b>Unit IV: Plant Adaptations</b>	Carnivorous Plants Epiphytic and Parasitic Plants

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(Dr. Sarika D. Patil.)  
 Name and Signature of Teacher

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 Vivekanand College  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr.Sarika Dipak Patil.

Programme: B. Sc. II


Semester: III

Subject: **Plant Protection**

Course Title: "General Agriculture and Plant Pathology"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: <b>Unit III : Crop Diseases</b>	Study of following crop diseases Phytoplasma-Little leaf of Brinjal Viral-Tobacco Mosaic Virus
03	--	03		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit III: Crop Diseases</b>	Bacterial-Oily spot of Pomegranate Fungal-Rust of Soybean
03	--	03		
Month: November			Module/Unit:	Sub-units planned
03	--	03	<b>Unit III: Crop Diseases</b>	Fungal-White Rust of Crucifers Grain smut of Jowar Tikka Disease of Ground Nut
Month: December			Module/Unit:	Sub-units planned
03	--	03	<b>Unit III: Crop Diseases</b>	Powdery mildew of Rose Downy Midew of Grapes

  
 (Dr. Sarika D. Patil.)  
 Name and Signature of Teacher

  
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 Kolhapur





**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Sarika Dipak Patil.**

Programme: **B. Sc. II**

Semester: **IV**


Subject: **Plant Protection**

Course Title: **"Weed Science and Insect Pest"**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: April			Module/Unit:	Sub-units planned
	03	03	--	--
Month: May			Module/Unit:	Sub-units planned
	03	03	--	--

  
(Dr. Sarika D. Patil)  
Name and Signature of Teacher



  
Name and Signature of HOD  
Department of Botany  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Sarika Dipak Patil

Programme: B. Sc. I


Semester: I

Subject: Botany

Course Title: "Biodiversity in cryptogams and Gymnosperms"

Month: September			Module/Units:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: November			Module/Unit:	Sub-units planned
--	04	04	--	--
Month: November			Module/Unit:	Sub-units planned
--	04	04	--	--

  
 (Dr. Sarika D. Patil)  
 Name and Signature of Teacher

  
 Name and Signature of HOD  
 Head  
 Department of Botany  
 Vivekanand College  
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Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Dr. Sarika Dipak Patil

Programme: B. Sc. I

Semester: II

Subject: Botany

Course Title: "Plant Ecology and Taxonomy"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Unit 1: Ecological Factors and Plant communities	Ecological adaptations: Hydrophytes, Xerophytes
03	03	06		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 1: Ecological Factors and Plant communities	Ecological adaptations: Epiphytes and parasites Soil Pollution
04	04	08		
Month: April			Module/Unit:	Sub-units planned
04	04	06	Unit 1: Ecological Factors and Plant communities	Ecological succession Ecological Interaction

  
(Dr. Sarika D. Patil).  
Name and Signature of Teacher

  
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Vivekanand College  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Priya Digambar Patil**

Programme: **B. Sc. I**

Semester: **I**

Subject: **Botany**

Course Title: **"Biodiversity in cryptogams and Gymnosperms"**

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: November			Module/Unit:	Sub-units planned
--	04	04	--	--
Month: November			Module/Unit:	Sub-units planned
--	04	04	--	--

*Priya D. Patil*  
 Name and Signature of Teacher  
 (Dr. Priya D. Patil)



*D. Gangal*  
 Name and Signature of HoD  
 Head  
 Department of Botany  
 Vivekanand College  
 Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Priya Digambar Patil

Programme: B. Sc. I

Semester: II

Subject: Botany

Course Title: "Plant Ecology and Taxonomy"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	<b>Unit 1: Ecological Factors and Plant communities</b>	Ecological adaptations: Hydrophytes, Xerophytes
03	03	06		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 1: Ecological Factors and Plant communities</b>	Ecological adaptations: Epiphytes and parasites Soil Pollution
04	04	08		
Month: April			Module/Unit:	Sub-units planned
04	04	06	<b>Unit 1: Ecological Factors and Plant communities</b>	Ecological succession Ecological Interaction

*Priya Patil*  
 Name and Signature of Teacher  
 (Dr. Priya D. Patil)



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 Name and Signature of HoD  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Priya Digambar Patil**

Programme: B. Sc. II

Semester: III

Subject: Botany

Course Title: "Taxonomy, Embryology and Plant Physiology"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Section II: <b>Unit 1: Organization of flower</b>	Introduction, Concept of flower as a modified shoot Structure of typical flower Structure of typical stamen
03	03	06		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 1: Organization of flower</b>	Microsporogenesis  Pollen germination and development of male gametophyte  Structure of typical gynoecium
03	04	07		
Month: November			Module/Unit:	Sub-units planned
04	04	08	<b>Unit 1: Organization of flower</b>	Structure of typical ovule and types of ovules Megasporesogenesis and development of female gametophyte Structure of embryo sac and types of embryo sac

*Priya Patil*  
 Name and Signature of Teacher  
 (Dr. Priya D. Patil)



*Priya Patil*  
 Name and Signature of HoD  
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 Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Priya Digambar Patil

Programme: B. Sc. II

Semester: IV

Subject: Botany

Course Title: "Taxonomy, Embryology and Plant Physiology"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	--	--
--	03	03		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
01	04	04		
Month: April			Module/Unit:	Sub-units planned
--	04	04	--	--

*Priya Patil*  
 Name and Signature of Teacher  
 (Dr. Priya D. Patil)

*Jangal*  
 Name and Signature of HoD  
 Head  
 Department of Botany  
 Vivekanand College  
 Kolhapur



Academic Year: 2022-2023

Name of the teacher: Dr. Priya Digambar Patil

Programme: B. Sc II

Semester: III

Subject: Plant Protection

Course Title: "General Agriculture and Plant Pathology"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: <b>Unit 1: Crop Diseases</b>	Introduction and importance of plant pathology, Concept of disease, Terminologies involved in plant protection, Phytoalexins and siderophores.
03	--	03		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 1: Crop Diseases</b>	Classification of plant diseases based on pathogens, symptoms, severity.  Classification of plant diseases based on spread, occurrence of disease
04	--	04		
Month: November			Module/Unit:	Sub-units planned
04	--	04	<b>Unit 1: Crop Diseases</b>	Classification of plant diseases based on transmission of pathogens through, host and cause.
Month: December			Module/Unit:	Sub-units planned
04	--	04	<b>Unit 2: Mechanism of plant infection</b>	Mechanism of infection in fungi  Mechanism of infection in bacteria and virus.  Factors affecting infection

Name and Signature of Teacher

(Dr. Priya D. Patil)



Name and Signature of HoD

Head  
Department of Botany  
Vivekanand College  
Kolhapur





**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: **Dr. Priya Digambar Patil**

Programme: **B. Sc. II**

Semester: **IV**

Subject: **Plant Protection**

Course Title: **"Weed Science and Insect Pest"**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: <b>Unit 1: Introduction to insect pests</b>	Definition and losses caused by insect pests
02	--	02		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 1: Introduction to insect pests</b>	Causes for insects to assume pest status  Classification of insect pest based on- a) Occurrence of pest b) Intensity of pest c) Level of infestation d) Food requirement
04	--	04		
Month: April			Module/Unit:	Sub-units planned
05	--	05	<b>Unit 4: Recent trends in pest management</b>	Introduction a) Attractants b) Repellents c) Antifeedants d) Pheromones
Month: May			Module/Unit:	Sub-units planned
03	--	03	<b>Unit 4: Recent trends in pest management</b>	e) Chemosterilants  Precautionary measures used during pesticides

Name and Signature of Teacher

(Dr. Priya D. Patil)



Name and Signature of HoD

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# Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Priya Digambar Patil


Programme: B. Sc. III

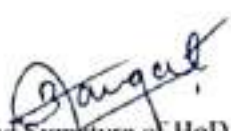
Semester: V

Subject: Botany

Course Title: "Cytology and Research Techniques in life sciences and Microbiology, Plant Pathology and Biofertilizers"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section I: Unit 1: Cell as a unit of life	Introduction, The cell theory
02	--	02		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Unit 1: Cell as a unit of life	Prokaryotic and eukaryotic cells Cell size and shape Eukaryotic cell components Cell membrane and cell wall
04	--	04		
Month: October			Module/Unit:	Sub-units planned
05	--	05	Unit 1: Cell as a unit of life	Functions of membrane Models of plasma membrane Fluidity of membrane Membrane proteins

  
Name and Signature of Teacher  
(Dr. Priya D. Patil)

  
Name and Signature of HoD  
Head  
Department of Botany  
Vivekanand College  
Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Priya Digambar Patil**

Programme: **B. Sc. III**

Semester: **VI**

Subject: **Botany**

Course Title: **"Molecular Biology and Biotechnology and Horticulture, Forestry and Herbal Technology"**

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I: <b>Unit 3: Genetic Engineering</b>	Introduction, Methods of gene transfer
02	--	02		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 3: Genetic Engineering</b>	Direct gene transfer, Agrobacterium mediated gene transfer
04	--	04		
Month: March			Module/Unit:	Sub-units planned
04	--	04	<b>Unit 3: Genetic Engineering</b>	Transgenic plants (Bt cotton & Golden Rice) Applications of genetic transformation
Month: April			Module/Unit:	Sub-units planned
03	--	03	<b>Unit 3: Genetic Engineering</b>	Blotting techniques- Northern, Southern and DNA fingerprinting

Name and Signature of Teacher

(**Dr. Priya D. Patil**)

Name and Signature of HoD

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**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: **Dr. Lubdha Abhijeet Kagale**

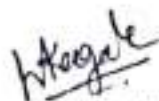
Programme: **B. Sc. III**


Semester: **V**

Subject: **Botany**

Course Title: "Cytology and Research Techniques in Life Sciences"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper – DSC 7 E 1 Section – I Unit - III Analytical techniques in plant sciences	Chromatography- Principles, Paper chromatography, TLC
03	--	03		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Unit - III Analytical techniques in plant sciences	Principles of Microscopy- Light microscope, Fluorescence Microscope, Electron Microscopy (TEM, SEM)
03	--	03		
Month: October			Module/Unit:	Sub-units planned
03	--	03	Unit - III Analytical techniques in plant sciences	Micrometry, Microphotography, Electrophoresis

  
Name and Signature of Teacher  
**Dr. Lubdha A. Kagale**

  
Name and Signature of HOD  
**Dr. B. T. Dangat**



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**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany  
Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Lubdha Abhijeet Kagale**

Programme: **B. Sc. III**

Semester: **VI**

Subject: **Botany**

Course Title: "**Biostatistics, Economic botany And Ethnobotany**"

**Horticulture, Forestry and Herbal Technology**

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper – DSC 1007 G Section – II Unit - IV Ethnobotany	Introduction and objectives, Data collection, Herbarium, Field work,
04	--	04		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Ethnobotany	Role of ethnobotany in modern medicine, Ancient literature, Sacred groves
05	--	05		
Month: March			Module/Unit:	Sub-units planned
04	--	04	Ethanobotany and Herbal technology	Archaeological findings,  Pharmacognosy,  Phytochemicals
Month: April			Module/Unit:	Sub-units planned
04	--	04	Herbal technology	Drugs- Types and adulteration Scope of Pharmacognosy

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Name and Signature of Teacher

*Dr. Lubdha A. Kagale*



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**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany  
Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Lubdha Abhijeet Kagale**

Programme: **B. Sc. II**

Semester: **III**

Subject: **Plant Protection**

Course Title: **"General Agriculture and Plant Pathology"**

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper – DSC 1012C2 Section – II Unit - I Crop diseases	Isolation, Inoculation and pure culture of fungi and Bacteria
02	05	07		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section – II Unit - IV Management of crop diseases and Pathophysiological skills	Principles, Classification of fungicides on chemical nature, Mode of action
02	04	06		
Month: November			Module/Unit:	Sub-units planned
02	03	05	Management of crop diseases and Pathophysiological skills	Fungicide formulation, Properties of Fungicides, mode of action,
Month: December			Module/Unit:	Sub-units planned
03	02	05	Management of crop diseases and Pathophysiological skills	Chemical nature and properties of Carbendazim and COC

*Kagale*  
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**Dr. Lubdha A. Kagale**

*B. T. Dangat*  
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**Dr. B. T. Dangat**



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Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Lubdha Abhijeet Kagale

Programme: B. Sc. II

Semester: IV

Subject: Plant Protection

Course Title: "Weed Science and Insect Pest"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper – DSC 1011D2 Section – II Unit - III Management of Insect Pest	Principal of insect pest control, classification based on mode of entry
02	04	06		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Management of Insect Pest	Systemic insecticide and fumigants, mode of action and chemical nature
02	04	06		
Month: April			Module/Unit:	Sub-units planned
01	04	05	Management of Insect Pest	Plant origin insecticides, Nature of formulations, Adjuvants and Need of Formulations
Month: May			Module/Unit:	Sub-units planned
01	02	03	Management of Insect Pest	Inorganic and organic Insecticides- Organophosphates, Synthetic pyrethroids

*L. Kagale*

Name and Signature of Teacher

Dr. Lubdha A. Kagale



*B. T. Dangat*

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**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany  
Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Lubdha Abhijeet Kagale**

Programme: **B. Sc. II**

Semester: **III**

Subject: **Botany**

Course Title: **"Taxonomy and Embryology"**

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper DSC- 7 Unit IV Plant Families Taxonomy and Embryology and Plant Physiology  Plant Anatomy and Plant Metabolism	Family Introduction
02	08	10		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit IV -Plant Families Taxonomy and Embryology and Plant Physiology  Plant Anatomy and Plant Metabolism	Lamiaceae, Annonaceae
02	06	08		
Month: November			Module/Unit:	Sub-units planned
01	05	06	Unit IV- Plant Families Taxonomy and Embryology and Plant Physiology  Plant Anatomy and Plant Metabolism	Meliaceae
Month: December			Module/Unit:	Sub-units planned
01	09	10	Unit IV- Plant Families Taxonomy and Embryology and Plant Physiology  Plant Anatomy and Plant Metabolism	Apocynaceae

Name and Signature of Teacher

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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Lubdha Abbijeet Kagale

Programme: B. Sc. II

Semester: IV

Subject: Botany

Course Title: "Taxonomy and Embryology", "Plant Anatomy and Plant Metabolism"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Taxonomy and Embryology and Plant Physiology	Practicals
-	07	07	Plant Anatomy and Plant Metabolism	
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Taxonomy and Embryology and Plant Physiology	Practicals
-	07	07	Plant Anatomy and Plant Metabolism	
Month: April			Module/Unit:	Sub-units planned
-	06	06	Taxonomy and Embryology and Plant Physiology	Practicals
			Plant Anatomy and Plant Metabolism	

*L. Kagale*

Name and Signature of Teacher

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 Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Ketaki Prakash Patil

Programme: B. Sc. I

Semester: I

Subject: Botany

Course Title: "Biodiversity in microbes, Algae and fungi"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Biodiversity in microbes, Algae and fungi DCS 1007A1	General characters, classification as per ainsworth
03	--	03	2b. Fungi	
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	2b. Fungi	-Economic importance -VAM fungi and it's importanes
03	--	03		
Month: November			Module/Unit:	Sub-units planned
03	--	03	2b. Fungi	Morphology and life cycles 1. Zygomycotina 2. Ascomycotina

Name and Signature of Teacher

Dr. Ketaki P. Patil

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Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Ketaki Prakash Patil

Programme: B. Sc. I

Semester: II

Subject: Botany

Course Title: "Plant Ecology"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper DSC- 7D section- II Plant Metabolism Unit II: Ecosystem and Phyto- geography	Ecosystem- Introduction, Composition and types
04	04	08		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit II: Ecosystem and Phyto- geography	Terrestrial ecosystem Food chain
04	04	08		
Month: march			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit II: Ecosystem and Phyto- geography	Food web Ecological pyramids
04	04	08		
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit II: Ecosystem and Phyto- geography	Phytogeographical regions of India
03	04	07		

Name and Signature of Teacher

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**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Ketaki Prakash Patil**

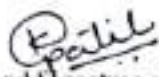
Programme: **B. Sc. II**


Semester: **III**

Subject: **Plant Protection**

Course Title: "General Agriculture and plant pathology"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I: DSC 1012 C2 Unit II: Introduction of agriculture and study of major crops	Fruit crop : Mango Vegetable crop: Brinjal
02	--	02		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Introduction of agriculture and study of major crops	Spice : Turmeric Floriculture: Rose
02	--	02		
Month: November			Module/Unit:	Sub-units planned
02	--	02	Introduction of agriculture and study of major crops	Organic farming: Introduction, Importance and Limitations
Month: December			Module/Unit:	Sub-units planned
03	--	03	Introduction of agriculture and study of major crops	Transgenic methods( Agrobacterium mediated gene transfer) Examples of transgenic plant

  
Name and Signature of Teacher  
**Dr. Ketaki P. Patil**

  
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**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Ketaki Prakash Patil

Programme: B. Sc. II (Practical)

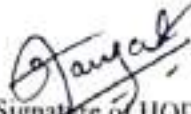
Semester: III

Course Title: "Plant Anatomy and Plant Metabolism"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Practical II: Plant anatomy and Plant Metabolism	
--	04	04		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Practical II: Plant anatomy and Plant Metabolism	
--	04	04		
Month: November			Module/Unit:	Sub-units planned
--	04	04	Practical II: Plant anatomy and Plant Metabolism	
Month: December			Module/Unit:	Sub-units planned
--	03	03	Practical II: Plant anatomy and Plant Metabolism	

  
Name and Signature of Teacher

Dr. Ketaki P. Patil

  
Name and Signature of HOD  
Head  
Department of Botany  
Vivekanand College  
Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany  
Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Ketaki Prakash Patil**

Programme: **B. Sc. II**

Semester: **IV**

Subject: **Botany**

Course Title: "Plant Metabolism"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper DSC- 7D section- II Plant Metabolism Unit III: Growth and Development	Definition and Phases of growth
03	--	03		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit III: Growth and Development	Plant growth regulators: Auxin, Cytokinin, Gibberellins, Abscisic acid
03	--	03		
Month: march			Module/Unit:	Sub-units planned
02	--	02	Unit III: Growth and Development	Photoperiodism and foreign concept: LDP, SDP, DNP
Month: April			Module/Unit:	Sub-units planned
02	--	02	Unit III: Growth and Development	Vernalization: Concept, site of vernalization and it's significanes

Name and Signature of Teacher

*Patil*  
Dr. Ketaki P. Patil

Name and Signature of HOD

*D. J. Dangan*  
Dr. D. J. Dangan  
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**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: **Dr. Ketaki Prakash Patil**

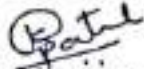
Programme: **B. Se. III**

Semester: **V**

Subject: **Botany**

Course Title: "Plant Biochemistry and stress Physiology"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper – DSC 7 E 2 Section – I Unit - I Carbohydrates metabolism	Introduction and classification of carbohydrates
03	04	07		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Unit - I Carbohydrates metabolism	Properties of monosaccharide's, oligosaccharides and polysaccharides
03	03	06		
Month: October			Module/Unit:	Sub-units planned
03	04	03	Unit - I Carbohydrates metabolism	Significances

  
Name and Signature of Teacher  
**Dr. Ketaki P. Patil**

  
Name and Signature of HOD  
**Dr. U. S. Barthod**  
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Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Ketaki Prakash Patil**

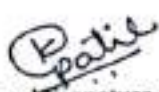
Programme: **B. Sc, III**

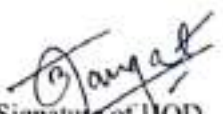
Semester: **VI**

Subject: **Botany**

Course Title: **"Molecular Biology and Biotechnology"**

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper – DSC 1007 H Section – I Unit - I Genetic Material	Nucleic Acid (DNA/ RNA)
04	04	08		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Genetic Material	Griffith and Avery's transformation experiment Harshey chase bacteriophage experiment
05	04	09		
Month: March			Module/Unit:	Sub-units planned
04	04	08	Genetic Material	DNA structure and types of DNA
Month: April			Module/Unit:	Sub-units planned
04	04	08	Genetic Material	DNA replication Types of RNA

  
 Name and Signature of Teacher  
**Dr. Ketaki P. Patil**

  
 Name and Signature of HOD  
**Dr. B. H. Bangat**  
 Department of Botany  
 Vivekanand College  
 Kolhapur





## Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Mrunalini Nilesh Desai

Programme: B. Sc. III

Semester: V

Subject: Botany

Course Title: "Plants Systematics and Paleobotany"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section II: <b>Unit 4: Paleobotany</b>	General account, Types of Fossils
02	--	02		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	<b>Unit 4: Paleobotany</b>	Geological Time Scale
02	--	02		
Month: October			Module/Unit:	Sub-units planned
09	--	09	<b>Microbiology, Plant Pathology and Biofertilizers"</b> Section II: <b>Unit 2: Plant Pathology</b>	a. Classification of Plant Diseases based on pathogens, crops and symptoms. b. Study of mechanism of infection in disease development c. Prevention and Control of plant diseases. d. Role of Quarantine, Significance of Plant Pathology

  
Name and Signature of Teacher  
(Dr. M. N. Desai)



  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Mrunalini Nilesh Desai**

Programme: **B. Sc. III**

Semester: **VI**

Subject: **Botany**

Course Title: **"Biostatistics, Economic botany And Ethnobotany"**

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: <b>Unit 2: Economic Botany</b>	Study of following economical important plant with reference to origin, morphology, parts used and uses. -Introduction Cereals: Jowar
02	--	02		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 2: Economic Botany</b>	Cereals: Rice Legumes: Soybean Vigna
03	--	03		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 2: Economic Botany</b>	Vegetables: Amaranthus Chilly Spices: Clove
03	--	03		
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 2: Economic Botany</b>	Spices: Black Pepper
01	--	01		

Name and Signature of Teacher

(Dr. M. N. Desai)



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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Mrunalini Nilesh Desai**

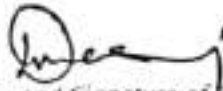
Programme: **B. Sc. II**

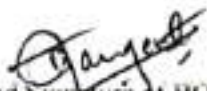
Semester: **III**

Subject: **Botany**

Course Title: **"Taxonomy, Embryology and Plant Physiology"**

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Section II: <b>Plant Physiology</b>  Unit II: Mineral Nutrition	a. Introduction Criteria of Essentiality b. Micro and Macro Nutrients
02	06	08		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit II: Mineral Nutrition	c. Mineral nutrition uptake: Passive and Active
02	08	10		
Month: November			Module/Unit:	Sub-units planned
03	08	11	Unit II: Mineral Nutrition	d. Role and deficiency disorders of micro nutrients and micronutrients. e. Effect of excess minerals on plant growth

  
 Name and Signature of Teacher  
 (Dr. M. N. Desai)

  
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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Mrunalini Nilesh Desai**

Programme: **B. Sc. II**

Semester: **IV**

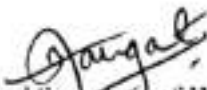
Subject: **Botany**

Course Title: "**Plant Anatomy and Plant Metabolism**"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	<b>Section I Plant Anatomy Unit III: Primary and Secondary structure of Plant body</b>	Primary structure of Monocotyledon root, stem and leaf
02	03	05		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit III: Primary and Secondary structure of Plant body</b>	Primary structure of Dicotyledon root, stem and leaf, Normal secondary growth in dicot root and stem
03	04	07		
Month: April			Module/Unit:	Sub-units planned
03	04	07	<b>Unit III: Primary and Secondary structure of Plant body</b>	Anamalous secondary growth in Bignonia and Dracaena stem, Periderm and Lenticel

  
Name and Signature of Teacher

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Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Mrunalini Nilesh Desai

Programme: B. Sc. II

Semester: III

Subject: Plant Protection

Course Title: "General Agriculture and Plant Pathology"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I: General Agriculture:  Unit 1: Introduction of Agriculture and study of Major crops:	Introduction and importance of Agriculture Study of following crops with reference to Botanical name, morphology, soil and climate. Economic importance.
02	--	02		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 1: Introduction of Agriculture and study of Major crops:	A. Cereal- Rice
02	--	02		
Month: November			Module/Unit:	Sub-units planned
02	--	02	Unit 1: Introduction of Agriculture and study of Major crops:	B. Oil seed crop: Soyben C. Pulse crop: Gram
Month: December			Module/Unit:	Sub-units planned
01	--	01	Unit 1: Introduction of Agriculture and study of Major crops:	D. Cash crop: Sugarcane

Name and Signature of Teacher

(Dr. M. N. Desai)



Name and Signature of HoD

Department of Botany  
Vivekanand College  
Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Mrunalini Nilesh Desai**

Programme: **B. Sc. II**

Semester: **IV**


Subject: **Plant Protection**

Course Title: **"Weed Science and Insect Pest"**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I: <b>Unit 1: Introduction of Weeds</b>	Definition Beneficial effect of weeds Characteristics of Weeds
02	--	02		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 1: Introduction of Weeds</b>	Classification of Weeds
02	--	02		
Month: April			Module/Unit:	Sub-units planned
01	--	01	<b>Unit 1: Introduction of Weeds</b>	Weed Biology and Ecology
Month: May			Module/Unit:	Sub-units planned
01	--	01	<b>Unit 1: Introduction of Weeds</b>	Study of parasitic, aquatic, poisonous noxious weeds.

  
 Name and Signature of Teacher

**(Dr. M. N. Desai)**

  
 Name and Signature of Ho  
 Head  
 Department of Botany  
 Vivekanand College  
 Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Mrunalini Nilesh Desai**

Programme: **B. Sc. I**

Semester: **I**

Subject: **Botany**

Course Title: **"Biodiversity in cryptogams and Gymnosperms"**

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: November			Module/Unit:	Sub-units planned
--	04	04	--	--
Month: November			Module/Unit:	Sub-units planned
--	04	04	--	--

Name and Signature of Teacher

(**Dr. M. N. Desai**)

Name and Signature of HoD

Department of Botany  
 Vivekanand College  
 Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Mrunalini Nilesh Desai**


Programme: **B. Sc. I**

Semester: **II**

Subject: **Botany**

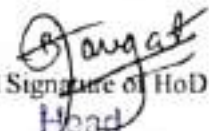
Course Title: **"Plant Ecology and Taxonomy"**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Unit 1: Ecological Factors and Plant communities	Ecological adaptations: Hydrophytes, Xerophytes
03	03	06		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 1: Ecological Factors and Plant communities	Ecological adaptations: Epiphytes and parasites Soil Pollution
04	04	08		
Month: April			Module/Unit:	Sub-units planned
04	04	06	Unit 1: Ecological Factors and Plant communities	Ecological succession Ecological Interaction



Name and Signature of Teacher

(Dr. M. N. Desai)



Name and Signature of HoD  
Head

Department of Botany  
Vivekanand College,  
Kolhapur





**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Shital B. Koparde


Programme: B. Sc. I

Semester: I


Subject: Botany

Course Title: "Bryophytes, Pteridophytes and Gymnosperms"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 1: Pteridophytes	General Characters and classification of pteridophytes
03	04	07		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 1: Pteridophytes	Morphology, anatomy and life cycle of <i>Selaginella</i>
04	04	08		
Month: November			Module/Unit:	Sub-units planned
04	04	08	Unit 1: Pteridophytes	Morphology, anatomy and life cycle of <i>Pteris</i> , Heterospory and seed habit in Pteridophytes

  
 Name and Signature of Teacher  
 Dr. Shital B. Koparde



  
 Name and Signature of HOD  
 Dr. B. J. Dargast  
 Head  
 Department of Botany  
 Vivekanand College  
 Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Shital B. Koparde**

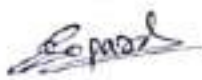
Programme: **B. Sc. I**

Semester: **II**

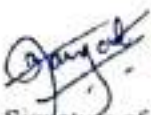
Subject: **Botany**

Course Title: "**Angiosperm Taxonomy**"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Unit 2: Morphology and modification of Angiosperms	Morphology and modification of Root
04	03	07		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 2: Morphology and modification of Angiosperms	Morphology and modification of Stem
04	04	08		
Month: April			Module/Unit:	Sub-units planned
04	04	08	Unit 2: Morphology and modification of Angiosperms	Morphology and modification of leaf

  
Name and Signature of Teacher  
**Dr. S. B. Koparde**



  
Name and Signature of HOD  
**Dr. B. Deepa Dargat**  
Department of Botany  
Vivekanand College  
Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Shital B. Koparde**

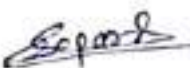
Programme: **B. Sc. II**


Semester: **III**

Subject: **Botany**

Course Title: **"Taxonomy, Embryology and Plant Physiology"**

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	-	-
00	03	03		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	-	-
00	04	04		
Month: November			Module/Unit:	Sub-units planned
00	04	04	-	-

  
Name and Signature of Teacher  
**Dr. S. B. Koparde**

  
Name and Signature of HOD  
**Dr. B. T. Dargat**  
Head  
Department of Botany  
Vivekanand College  
Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Shital B. Koparde**

Programme: **B. Sc. II**

Semester: **IV**

Subject: **Botany**

Course Title: **"Taxonomy, Embryology and Plant Physiology"**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals- II	Total	--	--
00	03	03		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
00	04	04		
Month: April			Module/Unit:	Sub-units planned
00	04	04	--	--

Name and Signature of Teacher

Dr. S. B. Koparde



Name and Signature of HOD

Dr. B. TheDangaj  
Department of Botany  
Vivekanand College  
Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Shital B. Koparde

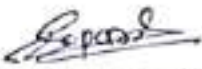
Programme: B. Sc. III

Semester: V


Subject: Botany

Course Title: "Cytology and Research Techniques in life sciences and Microbiology, Plant Pathology and Biofertilizers"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section II: Unit 3: Study of plant diseases	Rust of Wheat, Red rot of Sugarcane
02	--	02		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section II: Unit 3: Study of plant diseases	Rust of Soybean, Mosaic of Bean, Leaf spot of turmeric, White rust of <i>Amaranthus</i>
05	03	08		
Month: October			Module/Unit:	Sub-units planned
05	04	09	Section II: Unit 3: Study of plant diseases Unit 4: Paleobotany	Leaf curl of Papaya, Study of genera- <i>Lyginopteris</i> , <i>Enigmocarpon</i> , Application of Paleobotany

  
Name and Signature of Teacher  
Dr. S. B. Koparde



  
Name and Signature of HOD  
Dr. B. T. H. D. Jagtap  
Head of Department  
Department of Botany  
Vivekanand College  
Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Shital B. Koparde

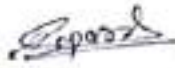
Programme: B. Sc. III

Semester: VI

Subject: Botany

Course Title: Genetics and plant breeding, Biostatistics, Economic Botany and Ethnobotany

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper – DSC 7 G Section – I Unit - IV Plant Breeding	Introduction and objectives, Plant genetic resources, Centers of Origin and domestication of crop plants
02	04	06		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Plant Breeding	Methods of Plant breeding
04	04	08		
Month: March			Module/Unit:	Sub-units planned
04	04	08	Plant Breeding	Methods of Plant breeding
Month: April			Module/Unit:	Sub-units planned
03	03	06	Plant Breeding	Mutation breeding

  
Name and Signature of Teacher  
Dr. S. B. Koparde



  
Name and Signature of HOD  
Dr. B. T. Daryat  
Head  
Department of Botany  
Vivekanand College  
Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: **Dr. Priyanka Pravin Jadhav**

Programme: **B. Sc. III**

Semester: **V**

Subject: **Botany**

Course Title: **"Cytology and Research Techniques in life sciences and Microbiology, Plant Pathology and Biofertilizers"**

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section I: <b>Unit 4: Radiation biology</b>	4a. Radioactive isotopes
02	--	02		4b. Effect of radiation on biological system
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	<b>Unit 4: Radiation biology</b>	4c. Beneficial effects of radioactions
04	--	04		4d. Autoradiography Technique
Month: October			Module/Unit:	Sub-units planned
04	--	04	<b>Unit 4: Radiation biology</b>	4e. Geiger-Muller experiment /liquid Scintillation counter
				4f. Precautionary measures

*PP Jadhav*  
Name and Signature of Teacher  
(**Dr. P. P. Jadhav**)



*B. T. Dahgat*  
Name and Signature of HOD  
(**Dr. B. T. Dahgat**)  
Head  
Department of Botany  
Vivekanand College  
Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Priyanka Pravin Jadhav

Programme: B. Sc. II Semester: III

Subject: Botany

Course Title: "Plant anatomy and plant metabolism"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Practical:-II Plant anatomy and plant metabolism	
	03	03		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Practical:-II Plant anatomy and plant metabolism	
	04	04		
Month: November			Module/Unit:	Sub-units planned
	04	04	Practical:-II Plant anatomy and plant metabolism	

*P.P. Jadhav*  
 Name and Signature of Teacher  
 (Dr. P. P. Jadhav)



*B. Dangat*  
 Name and Signature of HOD  
 (Dr. B. Dangat)  
 Department of Botany  
 Vivekanand College  
 Kolhapur



Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Priyanka Pravin Jadhav

Programme: B. Sc. II

Semester: III

Subject: Botany

Course Title: "Plant anatomy and plant metabolism"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Practical:-II Plant anatomy and plant metabolism	
	03	03		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Practical:-II Plant anatomy and plant metabolism	
	04	04		
Month: November			Module/Unit:	Sub-units planned
	04	04	Practical:-II Plant anatomy and plant metabolism	

Name and Signature of Teacher

(Dr. P. P. Jadhav)

Name and Signature of HOD

(Dr. P. P. Jadhav)

Department of Botany  
Vivekanand College  
Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Priyanka Pravin Jadhav**

Programme: **B. Sc. I** Semester: **II**

Subject: **Botany**

Course Title: "**Angiosperm Taxonomy**"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Sec. II Unit 2 Morphology and Modification of Angiosperm	Morphology and Modification of Root
03	03	06		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Sec. II Unit 2 Morphology and Modification of Angiosperm	Morphology and Modification of Stem
04	04	08		
Month: April			Module/Unit:	Sub-units planned
04	--	04	Sec. II Unit 2 Morphology and Modification of Angiosperm	Morphology and Modification of leaves

*P. P. Jadhav*  
 Name and Signature of Teacher  
 (Dr. P. P. Jadhav)

*B. T. Pangat*  
 Name and Signature of HOD  
 (Dr. B. T. Pangat)  
 Head  
 Department of Botany,  
 Vivekanand College,  
 Kolhapur



Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Priyanka Pravin Jadhav

Programme: B. Sc. I Semester: I

Subject: Botany

Course Title: "Bryophytes Pteridophytes and Gymnosperms "

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II:  Unit 1: Bryophytes and Pteridophytes	1a. Bryophytes General characters, Adaptation to land habit, Classification –as per G.M.Smith up to order,
03	03	06		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 1: Bryophytes and Pteridophytes	Alternation of Generation. Economic Importance.
04	04	08		
Month: November			Module/Unit:	Sub-units planned
04	04	08	Unit 1: Bryophytes and Pteridophytes	Morphology, anatomy and life cycle (excluding developmental stages) of following type. Hepaticopsida: <i>Riccia</i> Hepaticopsida: <i>Anthoceros</i>

Name and Signature of Teacher

(Dr. P. P. Jadhav)



Name and Signature of HOD

(Dr. B. H. Dhangat)

Department of Botany  
Vivekanand College  
Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Priyanka Pravin Jadhav

Programme: B. Se. III

Semester: VI

Subject: Botany

Course Title: "Genetics and Plant Breeding & Biostatistics, Economic Botany and Ethnobotany"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I: Unit 2: Linkage and Crossing over	Linkage concept and History
02	--	02		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 2: Linkage and Crossing over	Type of Linkage Crossing over concept
04	--	04		
Month: March			Module/Unit:	Sub-units planned
04	--	04	Unit 2: Linkage and Crossing over	Significance of crossing over Cytological proof of Crossing over
Month: April			Module/Unit:	Sub-units planned
03	--	03	Unit 2: Linkage and Crossing over	Linkage maps

Name and Signature of Teacher

(Dr. P. P. Jadhav)



Name and Signature of HOD

(Dr. B. H. Dangat)

Department of Botany  
 Vivekanand College  
 Kolhapur

**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Bhairu Nathaji Shinde**

Programme: **B. Sc. I**

Semester: **II**

Subject: **Botany**

Course Title: **"Plant Ecology and Taxonomy"**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Unit 1: Ecological Factors and Plant communities	Ecological adaptations: Hydrophytes, Xerophytes
03	03	06		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 1: Ecological Factors and Plant communities	Ecological adaptations: Epiphytes and parasites Soil Pollution
04	04	08		
Month: April			Module/Unit:	Sub-units planned
04	04	08	Unit 1: Ecological Factors and Plant communities	Ecological succession Ecological Interaction



Name and Signature of Teacher

**Dr. B.N. Shinde**



Name and Signature of HoD

**Dr. B.T. Dongat**



Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Bhairu Nathaji Shinde

Programme: B. Sc. I

Semester: I

Subject: Botany

Course Title: "Biodiversity in cryptogams and Gymnosperms"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	--	--
--	04	04		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	-	-
--	04	04		
Month: November			Module/Unit:	Sub-units planned
--	04	04	--	--
Month: November			Module/Unit:	Sub-units planned
--	04	04	--	--

Name and Signature of Teacher

Dr. B. N. Shinde

Name and Signature of HoD

Dr. B. N. Dangat  
Vivekanand College  
Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: **2022-2023**

Name of the teacher: **Dr. Bhairu Nathaji Shinde**

Programme: **B. Sc. II**

Semester: **IV**

Subject: **Botany**

Course Title: **"Plant anatomy and plant metabolism"**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Unit-1: Organization of higher plant body	Plant organs
02	03	05		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit-1: Organization of higher plant body	Development of plant body
03	04	07		
Month: April			Module/Unit:	Sub-units planned
04	04	08	Unit-1: Organization of higher plant body	Internal organization

Name and Signature of Teacher

**Dr. B.N. Shinde**

Name and Signature of HoD

**Dr. B.T. Dangat**  
Head

Department of Botany  
Vivekanand College  
Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Bhairu Nathaji Shinde

Programme: B. Sc. II

Semester: III

Subject: Botany

Course Title: "Taxonomy, Embryology and Plant Physiology"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals-II	Total	Section II:  <b>Unit 1: Plant water relation</b>	Introduction, Physiological importance of water, Water transport process, mechanism of water absorption
03	06	09		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 1: Plant water relation</b>	Water transport through xylem and tracheid, Transpiration: Definition
03	08	11		
Month: November			Module/Unit:	Sub-units planned
04	08	12	<b>Unit 1: Plant water relation</b>	Types of transpiration, mechanism of stomatal movement, starch sugar hypothesis, factors affecting transpiration, significance ,antitranspirant

Name and Signature of Teacher

Dr. B. N. Shinde

Name and Signature of HoD

Dr. B. T. Dangal

Head  
Department of Botany  
Vivekanand College  
Kolhapur





Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Bhairu Nathaji Shinde

Programme: B. Sc. III

Semester: VI

Subject: Botany

Course Title: "Genetics and plant breeding and biostatistics, economic botany and ethanobotany"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: Unit 1: Biostatistics	Introduction, Statistical terms, Sampling methods
02	--	02		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 1: Biostatistics	Collection and representation of data
04	--	04		
Month: March			Module/Unit:	Sub-units planned
04	--	04	Unit 1: Biostatistics	Measure of central tendency, variances and standard deviation, coefficient of variation
Month: April			Module/Unit:	Sub-units planned
03	--	03	Unit 1: Biostatistics	Test of significance, chi-square test

Name and Signature of Teacher

Dr. B.N. Shinde

Name and Signature of HoD

Dr. B.T. Bangal .  
Head

Department of Botany  
Vivekanand College  
Kolhapur



# Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Bhairu Nathaji Shinde

Programme: B. Sc. III

Semester: V

Subject: Botany

Course Title: "Cytology and Research Techniques in life sciences and Microbiology, Plant Pathology and Biofertilizers"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section II: Unit 4: Biofertilizer	Introduction, Microbes in Agriculture- Biological nitrogen fixation
02	--	02		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Unit 4: Biofertilizer	Mycorrhizae, Organic farming: Introduction
04	--	04		
Month: October			Module/Unit:	Sub-units planned
05	--	05	Unit 4: Biofertilizer	Organic farming: concept and scope, Green manuring, biocompost making methods

Name and Signature of Teacher

Dr. B. N. Shinde

Name and Signature of HoD

Dr. B. T. Dangal,  
Head

Department of Botany,  
Vivekanand College,  
Kolhapur



**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023


Name of the teacher: Dr. Snehal Sanjay Wadkar


Programme: B. Sc. I Semester: I

Subject: Botany

Course Title: "Bryophytes Pteridophytes and Gymnosperms (Archegoniates) "

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II: <b>Unit 2: Gymnosperms</b>	2a. General characters, Classification (As per sporne, 1965) upto class with characters and suitable examples.
03	03	06		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 2: Gymnosperms</b>	2b. Morphology, Anatomy and Life Cycle of Cycadopsida- Cycas
04	04	08		
Month: November			Module/Unit:	Sub-units planned
02	04	06	<b>Unit 2: Gymnosperms</b>	2c. Evolutionary significance of Gymnosperms

  
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Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Snehal Sanjay Wadkar


Programme: B. Sc. I


Semester: II

Subject: Botany

Course Title: "Ecology"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section.II Unit 2: Ecosystem and Phyto- geography	2a. Ecosystem- Introduction, Composition and types
04	03	07		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit 2: Ecosystem and Phyto- geography	2b. Terrestrial ecosystem, Food chain, Food Web
04	04	08		
Month: April			Module/Unit:	Sub-units planned
05	--	05	Unit 2: Ecosystem and Phyto- geography	2c. Phytogeographical regions of India

  
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**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Snehal Sanjay Wadkar

Programme: B. Sc. II Semester: IV

Subject: Botany

Course Title: "Plant anatomy and plant metabolism"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section: II	2a. Introduction- Role of N <sub>2</sub> 2b. Biological nitrogen fixation
03	--	03	<b>Unit 2: Nitrogen Metabolism</b>	
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals- I & II	Total	<b>Unit 2: Nitrogen Metabolism</b>	2c. General structure and role of Nitrogenase  2d. Mechanism and Reduction of nitrate into Ammonia
04	--	04		
Month: April			Module/Unit:	Sub-units planned
04	--	04	<b>Unit 2: Nitrogen Metabolism</b>	2e. Mechanism of Ammonia assimilation in plants  2f. nif genes

  
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**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: **Dr. Snehal Sanjay Wadkar**

Programme: **B. Sc. II** Semester: **III**

Subject: **Plant Protection**

Course Title: **"Weed Science and Insect Pests"**

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Practical:-I	
--	04	04		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Practical:-I	
--	04	04		
Month: November			Module/Unit:	Sub-units planned
--	04	04	Practical:-I	



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**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Botany**  
**Annual Teaching Plan**

Academic Year: 2022-2023


Name of the teacher: Dr. Snehal Sanjay Wadkar

Programme: B. Sc. II Semester: IV

Subject: Plant Protection

Course Title: "Weed Science and Insect Pests"

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Practical:-I	
--	04	04		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Practical:-I	
--	04	04		
Month: April			Module/Unit:	Sub-units planned
--	04	04	Practical:-I	

  
 Name and Signature of Teacher  
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Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Annual Teaching Plan

Academic Year: 2022-2023

Name of the teacher: Dr. Snehal Sanjay Wadkar

Programme: B. Sc. III

Semester: V

Subject: Botany

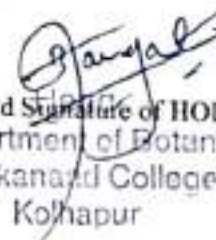
Course Title: "Plant Biochemistry and Stress Physiology & Plants Systematics and Palaeobotany"

Month: August			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section I: <b>Unit 1: Protein Metabolism</b>	1a. Introduction, Properties and characters of amino acids 1b. Protein- Structure and classification 1c. Protein synthesis
06	09	15		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Section II: <b>Unit 1: Importance of Plant Systematics</b>	1a Introduction to Systematics, Evidences from Palenology, Cytology, Phytochemistry, Molecular Data
06	09	15		
Month: October			Module/Unit:	Sub-units planned
06	09	15	Section II: <b>Unit 1: Importance of Plant Systematics</b>	1b Field inventory, Fuctions of Herbarium, Important herbaria and Botanical gardens of the World and India



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**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**Annual Teaching Plan**

Academic Year: 2022-2023

Name of the teacher: Dr. Snehal Sanjay Wadkar

Programme: B. Sc. III

Semester: VI

Subject: Botany

Course Title: "Genetics and Plant Breeding & Biostatistics, Economic Botany and Ethnobotany"

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I: <b>Unit 3: Extra-Chromosomal Genome</b>	1a. Introduction and Organization of genome
02	09	11		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Unit 3: Extra-Chromosomal Genome</b>	1b. Plastid Inheritance 1c. Mitochondrial Inheritance
04	09	13		
Month: March			Module/Unit:	Sub-units planned
02	09	11	<b>Unit 3: Extra-Chromosomal Genome</b>	Unit tests

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# Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Academic Year: 2022-2023

## Annual Teaching Plan

Name of the teacher: Miss. Pradnya Baban Shelar

Programme: B.Sc I

Semester: I

Subject: Botany

Course Title: Biodiversity in cryptogams and gymnosperms

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	02	02	--	--

  
(Miss. Pradnya B. Shelar)  
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# Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Academic Year: 2022-2023

## Annual Teaching Plan

Name of the teacher: **Miss. Pradnya Baban Shelar**

Programme: **B.Sc I**

Semester: **II**


Subject: **Botany**

Course Title: **Biodiversity in cryptogams and gymnosperms**

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: May			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	03	03	--	--

  
Miss. Pradnya Baban Shelar  
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# Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Academic Year: 2022-2023

## Annual Teaching Plan

Name of the teacher: Miss. Pradnya Baban Shelar

Programme: B.ScII

Semester: III

Subject: Botany

Course Title: Taxonomy, Embryology and Plant Physiology

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	02	02	--	--

*Pradnya*  
(Miss. Pradnya B. Shelar)  
Name and Signature of Teacher



*P. Gangal*  
Name and Signature of HOD  
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# Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Academic Year: 2022-2023

## Annual Teaching Plan

Name of the teacher: Miss. Pradnya Baban Shelar

Programme: B.Sc II (Plant protection)

Semester: III


Subject: Botany

Course Title: "Plant Pathology and Insect Pest"

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	04	04	--	--
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
--	02	02	--	--

  
Miss. Pradnya B. Shelar  
Name and Signature of Teacher



  
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## Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Academic Year: 2022-2023

### Annual Teaching Plan

Name of the teacher: Miss. Pradnya Baban Shelar

Programme: B.Sc II

Semester: IV

Subject: Botany

Course Title: Plant anatomy and plant metabolism

Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section- 1	2c. Epidermal Tissue System 2d. Secretary Tissue System
04	08	12	Unit 2:Tissue and Tissue System.	
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section- 1	2e. Mechanical tissue system 2f. Types of vascular bundle.
03	08	11	Unit 2:Tissue and Tissue System.	
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section- 1	2f. Types of vascular bundle. 2g. Introduction and scope of plant anatomy- applications in systematic, forensic and pharamacognosy.
04	06	10	Unit 2:Tissue and Tissue System.	

  
(Miss. Pradnya Baban Shelar)  
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# Vivekanand College, Kolhapur (Autonomous)

Department of Botany  
Academic Year: 2022-2023

## Annual Teaching Plan

Name of the teacher: Miss. Pradnya Baban Shelar


Programme: B.Sc III

Semester: V


Subject: Botany

Course Title: Plant biochemistry and stress physiology.

Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section: I Unit – 4: Senescence and aging	Introduction of Senescence and aging
01	04	05		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section: I Unit – 4: Senescence and aging	Pattern of senescence
01	02	03		
Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section: I Unit – 4: Senescence and aging	Physical changes during senescence
01	03	04		
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section: I Unit – 4: Senescence and aging	Control of senescence
01	02	03		

  
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# Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Academic Year: 2022-2023

## Annual Teaching Plan

Name of the teacher: Miss. Pradnya Baban Shelar

Programme: B.Sc III

Semester: VI

Subject: Botany

Course Title: Molecular biology and biotechnology

Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section- I Unit 4: Plant Tissue Culture	a.Principle and totipotency b. Components of culture media
01	--	01		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section- I Unit 4: Plant Tissue Culture	b. Sterilization techniques c. Techniques in tissue culture
04	--	04		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section- I Unit 4: Plant Tissue Culture	d. Organogenesis embryogenesis
03	--	03		
Month: April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section- I Unit 4: Plant Tissue Culture	e. Anther culture f.Application of Tissue Culture
03	--	03		





Month: May			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	<b>Section- I</b>  <b>Unit 4: Plant Tissue Culture</b>	Application of Tissue Culture
02	--			

  
 Miss. Pradnya Babar Shelar  
 Name and Signature of Teacher



  
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