



"Education for Knowledge, Science, and Culture"

- Shikshanmaharshi Dr. Bapuji Satunkhe

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur
(Empowered Autonomous)



Department of Botany

Annual Teaching Plan

2023-2024

Annual Teaching Plan (2023-2024)

Department of Botany





"Education for Knowledge, Science, and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe
**Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur
(Empowered Autonomous)**



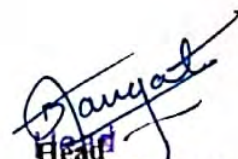
Department of Botany

Annual Teaching Plan

2023-2024

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Head
Department of Botany
Vivekanand College
Kolhapur




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Annual Teaching Plan (2023-24)

Department of Botany

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

Academic Year: 2023-2024

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

Programme: **B.Sc. I**

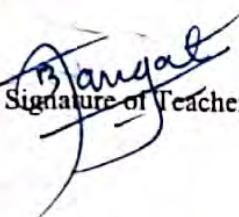
Semester: **I**

Subject: **Botany**

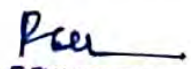
Paper No.: **DSC03BOT12**

Course Title: **"Plant Morphology"**

| Month: August | | | Module/Unit: | Sub-units planned |
|--|-------------|-------|--|---|
| Lectures | Practical's | Total | Unit. I: General organization of plant body | 1a: Root System- introduction, types and modification of root with one example each |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit. I: General organization of plant body | 1b: Shoot System- introduction, types and modification of stem with one example each |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit. I: General organization of plant body | 1c: Leaf- introduction, types- simple and complex, phyllotaxy, leaf venation and modification of stem with one example each |
| 04 | 04 | 08 | | |
| Practical's (Plant Morphology + OE (Agri based microenterprises)) | | | | |

Name and Signature of Teacher





Principal
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Vivekanand College, Kolhapur (Autonomous)
Department of Botany

Annual Teaching Plan

Academic Year: **2023-2024**

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

Programme: **B.Sc. II**

Semester: **III**

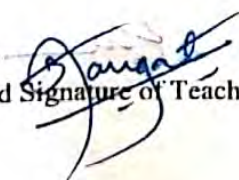
Subject: **Botany**

Paper: **DSC 1007 C**

Course Title: **"Taxonomy, Embryology"**

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-------------|-------|--------------------------------|--|
| Lectures | Practical's | Total | Unit IV: Plant Families | Morphological, floral distinguishing characters and economic importance of following families i) Annonaceae ii) Meliaceae |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit IV: Plant Families | Morphological, floral distinguishing characters and economic importance of following families iii) Apocynaceae iv) Lamiaceae |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit IV: Plant Families | Morphological, floral distinguishing characters and economic importance of following families v) Amaranthaceae vi) Orchidaceae |

Name and Signature of Teacher




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

Academic Year: 2023-2024

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

Programme: **B.Sc. II**

Semester: **III**

Subject: **Plant Protection**

Paper: **DSC-1012 C2**

Course Title: **“General Agriculture and Plant pathology”**

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-------------|-------|----------------------------------|---|
| Lectures | Practical's | Total | | |
| 04 | 04 | 08 | Unit I: Crop Diseases | 1a: Introduction and importance of Plant Pathology. 1b: Definition and concept of disease, Terminologies used in Plant Pathology: Host, Pathogen, Inoculum, Virulence, Pathogenicity, Pathogenesis, Predisposition, Symptoms, Infection, Incubation period, Etiology, Disease cycle, Resistance, Susceptibility, Immunity, Hypersensitivity, Cross protection, Phytoalexins, Siderophores, Inoculum potential, Dissemination, Virus, Mycoplasma, Viroid. |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | | |
| 04 | 04 | 08 | Unit I: Crop Diseases | 1c: Classification of plant diseases – Based on a) Pathogens, b) Symptoms, c) Severity, spread and occurrence of disease d) transmission of pathogens through e) Host f) Cause (Biotic, Abiotic and Mesobiotic) g) epidemiology 1d. Symptoms and signs of plant diseases (Chlorosis, Necrosis, Mildew, Rust and Smuts) |



| Month: October | | | Module/Unit: | Sub-units planned |
|----------------|----|----|------------------------------|--|
| 04 | 04 | 08 | Unit I: Crop Diseases | 1e: Methods of studying plant pathogens and Koch's Postulates a) Isolation of Fungi and Bacteria b) Methods of purification of Fungi and Bacteria c) Koch's Postulates |

Name and Signature of Teacher

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Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Bhaurav Tukaram Dangat

Programme: B.Sc. III

Semester: V

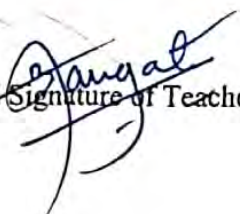
Subject: Botany

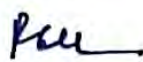
Paper No.: VI

Course Title: "Taxonomy, Embryology and Plant Physiology"

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-------------|-------|--|--|
| Lectures | Practical's | Total | Section - II Unit: II System of Classification: | 2a: Phylogeny of Angiosperms, The general account of origin of Aniosperms(with reference to Gnctalean theory) |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit: II System of Classification: | 2b: Classification system of Takhtajan, Brief reference of Angiosperm Phylogeny Group (APG-III) classification (2009) |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit: II System of Classification: | 2c: Ranks of IUCN and methods of Conservation. |

Name and Signature of Teacher




Principal
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Vivekanand College, Kolhapur (Autonomous)
Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

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

Programme: **B.Sc. I**

Semester: **I**

Subject: **Botany**

Paper No.: **DSC03BOT12**

Course Title: **"Plant Morphology"**

| Month: August | | | Module/Unit: | Sub-units planned |
|---|-------------|-------|---|---|
| Lectures | Practical's | Total | Unit. I: General organization of plant body | 1a: Root System- introduction, types and modification of root with one example each |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit. I: General organization of plant body | 1b: Shoot System- introduction, types and modification of stem with one example each |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit. I: General organization of plant body | 1c: Leaf- introduction, types- simple and complex, phyllotaxy, leaf venation and modification of stem with one example each |
| 04 | 04 | 08 | | |
| Practical's (Plant Morphology + OE (Agri based microenterprises) | | | | |

Name and Signature of Teacher

Bhaurav Dangat

P. V.
PRINCIPAL
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Vivekanand College, Kolhapur (Autonomous)
Department of Botany
Annual Teaching Plan

Academic Year: 2023-2024

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

Programme: **B.Sc. II**

Semester: **III**

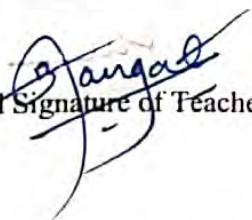
Subject: **Botany**


Paper: **DSC 1007 C**

Course Title: **"Taxonomy, Embryology"**

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-------------|-------|--------------------------------|--|
| Lectures | Practical's | Total | Unit IV: Plant Families | Morphological, floral distinguishing characters and economic importance of following families i) Annonaceae ii) Meliaceae |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit IV: Plant Families | Morphological, floral distinguishing characters and economic importance of following families iii) Apocynaceae iv) Lamiaceae |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit IV: Plant Families | Morphological, floral distinguishing characters and economic importance of following families v) Amaranthaceae vi) Orchidaceae |

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Vivekanand College, Kolhapur (Autonomous)
Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Bhaurav Tukaram Dangat

Programme: B.Sc. II

Semester: III

Subject: Plant Protection

Paper: DSC-1012 C2

Course Title: "General Agriculture and Plant pathology"

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-------------|-------|----------------------------------|--|
| Lectures | Practical's | Total | | |
| 04 | 04 | 08 | Unit I: Crop Diseases | 1a: Introduction and importance of Plant Pathology. 1b: Definition and concept of disease, Terminologies used in Plant Pathology: Host, Pathogen, Inoculum, Virulence, Pathogenicity, Pathogenesis, Prediposition, Symptoms, Infection, Incubation period, Etiology, Disease cycle, Resistance, Susceptibility, Immunity, Hypersensitivity, Cross protection, Phytoalexins, Siderophores, Inoculum potential, Dissemination, Virus, Mycoplasma, Viroid. |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | | |
| 04 | 04 | 08 | Unit I: Crop Diseases | 1c: Classification of plant diseases – Based on a) Pathogens, b) Symptoms, c) Severity, spread and occurrence of disease d) transmission of pathogens through e) Host f) Cause (Biotic, Abiotic and Mesobiotic) g) epidemiology 1d. Symptoms and signs of plant diseases (Chlorosis, Necrosis, Mildew, Rust and Smuts) |



| Month: October | | | Module/Unit: | Sub-units planned |
|----------------|----|----|------------------------------|---|
| 04 | 04 | 08 | Unit I: Crop Diseases | 1e: Methods of studying plant pathogens and Koch's Postulates a) Isolation of Fungi and Bacteria b) Methods of purification of Fungi and Bacteria c) Koch's Postulates |

Name and Signature of Teacher

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Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Bhaurav Tukaram Dangat

Programme: B.Sc. III

Semester: V

Subject: Botany

Paper No.: VI

Course Title: "Taxonomy, Embryology and Plant Physiology"

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-------------|-------|--|--|
| Lectures | Practical's | Total | Section - II Unit: II System of Classification: | 2a: Phylogeny of Angiosperms, The general account of origin of Aniosperms(with reference to Gnetalean theory) |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit: II System of Classification: | 2b: Classification system of Takhtajan, Brief reference of Angiosperm Phylogeny Group (APG-III) classification (2009) |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit: II System of Classification: | 2c: Ranks of IUCN and methods of Conservation. |

Name and Signature of Teacher

Bhaurav Dangat

Pee
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Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Botany

Annual Teaching Plan

Academic Year: **2023-2024**

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

Programme: **B.Sc. I**

Semester: **II**

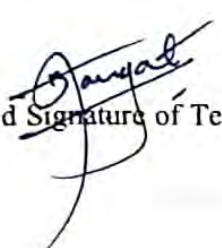
Subject: **Botany**

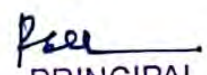
Paper No.: **DSC03BOT22**

Course Title: **“Diversity and Conservation of Plants”**

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-----------|---|---|
| Lectures | Practical's | Total | Unit-3: Plant Diversity | Introduction and definition, Types of diversity, Importance of diversity. |
| 04 | 04 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit-4: Conservation of Plant Diversity | Threats of diversity, Magnitude of diversity Introduction and definition, Types of conservation. |
| 04 | 04 | 08 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit-4: Conservation of Plant Diversity | Types of conservation. (In situ / Ex situ). Necessity of conservation. |
| 04 | 04 | 08 | | |
| | | | Practical's (Diversity and Conservation of Plants) | |

Name and Signature of Teacher




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Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Bhaurav Tukaram Dangat

Programme: B.Sc. I (OE)

Semester: II

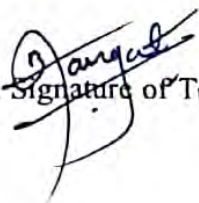
Subject: Open Elective

Paper No.: OEL03BOT22

Course Title: "Herbal Technology – I and II"

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|--|---|
| Lectures | Practical's | Total | Unit-2: Medicinal plants: | Introduction and definition, History, present and future status. Cultivation, processing, storage, marketing and utilization of medicinal plants. |
| 04 | 04 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit-2: Medicinal plants | Precautions during the use of herbal medicinal products. History and definition, Importance of phytochemicals |
| 04 | 04 | 08 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit-2: Photochemistry: | Study of different types of phytochemicals. Study of different methods of testing of active chemicals |
| 04 | 04 | 08 | | |
| | | | Practical's (Herbal Technology) | |

Name and Signature of Teacher




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Vivekanand College, Kolhapur (Autonomous)
Department of Botany

Annual Teaching Plan

Academic Year: **2023-2024**

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

Programme: **B.Sc. II**

Semester: **IV**

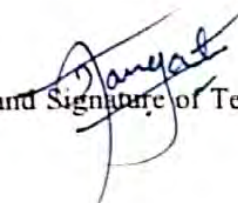
Subject: **Botany**

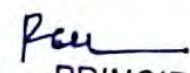
Paper: **DSC 1007 D1**

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

| Month: January | | | Module/Unit | Sub-units planned |
|-----------------|-------------|-------|--|---|
| Lectures | Practical's | Total | Unit . II. Tissue and Tissue System | 2a. Meristem: a) Introduction, Characteristics and Classification of meristems based on position b) Theories of structural development- i) Apical cell theory ii) Histogen theory iii) Tunica Corpus theory. 2b. Permanent tissue: i) Simple tissue- Parenchyma, Collenchyma and Sclerenchyma ii) Complex tissue: Xylem and Phloem |
| 04 | 04 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit II: Tissue and Tissue System | 2c. Epidermal tissue system 2d. Secretory tissue system 2e. Mechanical tissue system 2f. Types of Vascular bundles 2g. Introduction and scope of Plant anatomy – applications in systematic, forensics and pharamacognosy. |
| 04 | 04 | 08 | | |

Name and Signature of Teacher




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Vivekanand College, Kolhapur (Autonomous)
Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Bhaurav Tukaram Dangat

Programme: B.Sc. II

Semester: IV

Subject: Plant Protection

Paper: DSC1011D2:"

Course Title: "Weed Science and Insect Pest"

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|--|--|
| Lectures | Practical's | Total | Unit I: Introduction of weeds | 1a:Weeds – Definition, Harmful and beneficial effect of weed 1b: Characteristic of weeds: 1c: Classification of weeds: 1d: Weed Biology and Ecology: 1e: Study of parasitic, aquatic, poisonous and noxious weeds: |
| 04 | 04 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit I: Study of following weeds with reference to Practicals | a) Gross morphology b) Reproduction c) Ecology d) Dispersal e) Management 1. <i>Argemone Mexicana</i> , 2. <i>Portulaca oleracea</i> , 3. <i>Parthenium hysterophorus</i> , 4. <i>Eupatorium species</i> , 5. <i>Alternanthera sessilis</i> , 6. <i>Amaranthus spinosus</i> , 7. <i>Cassia tora</i> , 8. <i>Cyperus rotundus</i> and 9. <i>Cynodon dactylon</i> |
| 04 | 04 | 08 | | |

Name of the Teacher



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Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Bhaurav Tukaram Dangat

Programme: B.Sc. III

Semester: VI

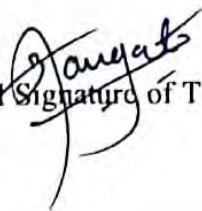
Subject: Botany

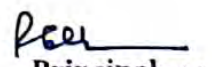
Paper No.: DSE 7 F2

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

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|--|--|
| Lectures | Practical's | Total | Unit: 1 Molecular Biology and Biotechnology | Recombinant DNA Technology: |
| 04 | 04 | 08 | | 2a: Introduction and Principle 2b: Enzymes involved in recombinant DNA technology |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit: 1 Molecular Biology and Biotechnology | 2c: Cloning Vectors (Plasmid, Bacteriophage and Cosmids) 2d: Gene Amplification: PCR techniques Practical's |
| 04 | 04 | 08 | | |

Name and Signature of Teacher




Principal

VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)



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

Academic Year: 2023-2024

Name of the teacher: **Dr. Abhijeet Rajaram Kasarkar**

Programme: **B. Sc. I**

Semester: **I**

Subject: **Botany**

Course Title: **"Plant Morphology"**

| Month: July | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|---|--|
| Lectures | Practicals | Total | Unit III: Study of Flower Practical I and II | 3a. Definition and parts of a typical flower 3b. Symmetry and insertion of floral whorls. |
| 03 | 04 | 07 | | |
| Month: August | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Study of Flower Practical I and II | 3a. Definition and parts of a typical flower 3b. Symmetry and insertion of floral whorls. |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Study of Flower Practical I and II | 3c. Calyx and corolla-forms, aestivation 3d. Perianth - types |
| 03 | 04 | 07 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Study of Flower Practical I and II | 3e. Androecium- parts and types 3f. Gynoecium –parts, arrangement and types of placntation. |
| 03 | 04 | 07 | | |
| Month: November | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit IV: Study of Fruit Practical I and II | 4a. Introduction, 4b. Types with one example of each |
| 02 | 02 | 04 | | |

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



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

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

Academic Year: 2023-2024

Name of the teacher: **Dr. Abhijeet Rajaram Kasarkar**


Programme: **B. Sc. II**

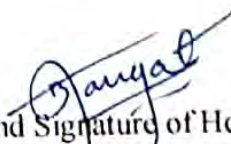
Semester: **III**

Subject: **Botany**

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

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|--|--|
| Lectures | Practicals | Total | Section : I Unit III: Taxonomic Literature Practical I and II | 3a. Study of flora, Monograph. |
| 03 | 04 | 07 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Taxonomic Literature Practical I and II | 3a. Study of Revisions, Mannunals, Journals. |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Taxonomic Literature Practical I and II | 3a. Study of Periodicals, Reference Books, Research Paper. |
| 03 | 04 | 07 | | |
| Month: November | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Taxonomic Literature Practical I and II | 3a. Study of, Websites and Catalogue's. |
| 02 | 02 | 04 | | |


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


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



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

Academic Year: 2023-2024

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 | Section : I Unit IV: Methods of Plant Protection - II Practical I | 4a. Study of chemical methods of plant protection- Bactericides, Fungicides, Nematicides, Acaricides. |
| 03 | 04 | 07 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit IV: Methods of Plant Protection - II Practical I | 4a. Study of chemical methods of plant protection- Molluscicides, Rodenticides. 4b. Biological methods- Use of Fungi , Bacteria |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit IV: Methods of Plant Protection - II Practical I | 4b. Biological methods- Use of Insect and Virus 4c. Legal Methods. |
| 04 | 04 | 08 | | |
| Month: November | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit IV: Methods of Plant Protection - II Practical I | 4d. Crop resistance. |
| 02 | 02 | 04 | | |

Dr. A. R. Kasarkar

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



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: **2023-2024**

Name of the teacher: **Dr. Abhijeet Rajaram Kasarkar**


Programme: **B. Sc. III**

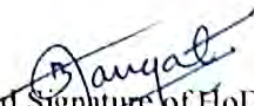
Semester: **V**

Subject: **Botany**

Course Title: **"Plant Systematics and Paleobotany"**

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|--|--|
| Lectures | Practicals | Total | Section : II Unit III: Plant Families Practical II | 3a. Study of plant families : Anacardiaceae, Fabaceae |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Plant Families Practical II | 3b. Study of plant families : Apiaceae, Rubiaceae |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 05 | 04 | 09 | Unit III: Plant Families Practical II | 3b. Study of plant families : Acanthaceae, Euphorbiaceae |
| Month: November | | | Module/Unit: | Sub-units planned |
| 04 | 02 | 06 | Unit III: Plant Families Practical II | 3b. Study of plant families : Poaceae |


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


 Name and Signature of HoD
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 Kolhapur



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

Academic Year: 2023-2024

Name of the teacher: **Dr. Abhijeet Rajaram Kasarkar**


Programme: **B. Sc. I**

Semester: **II**

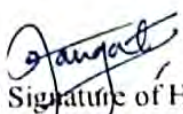
Subject: **Botany**

Course Title: **"Diversity and Conservation of Plants"**

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|---|--|
| Lectures | Practical's | Total | Unit I: Study of Classification System | 1a. Introduction and Definition. 1b. Ranks of classification. |
| 02 | - | 02 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit I: Study of Classification System | 1c. Study of five kingdom classification system. 1d. Study of general characters of each kingdom. |
| 04 | - | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit I: Study of Classification System Unit II : Domains of Life | 1d. Study of general characters of each kingdom. 2a. Study of three domains of life. |
| 04 | - | 04 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit II : Domains of Life | 2a. Study of three domains of life- Archaea, Bacteria and Eukarya. |
| 04 | - | 04 | | |


 Name and Signature of Teacher




 Name and Signature of HoD
HEAD
 DEPARTMENT OF BOTANY
 VIVEKANAND COLLEGE, KOLHAPUR
 (EMPOWERED AUTONOMOUS)

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

Academic Year: **2023-2024**

Name of the teacher: **Dr. Abhijeet Rajaram Kasarkar**

Programme: **B. Sc. I**

Semester: **II**

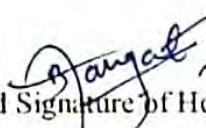
Subject: **Botany (Open Elective)**

Course Title: **"Herbal Technology I & II"**

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|--|--|
| Lectures | Practical's | Total | Unit IV: Study of Medicinal plants - II | 4a. Study of plants used in respiratory disorders. |
| 02 | - | 02 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit IV: Study of Medicinal plants - II | 4b. Study of plants used in digestive disorders. 4c. Study of plants used in antiaging. |
| 04 | - | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit IV: Conservation of Herbal plants | 4a. <i>In situ</i> methods of conservation. 4b. <i>Ex situ</i> methods of conservation. |
| 04 | - | 04 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit IV: Conservation of Herbal plants | 4b. <i>Ex situ</i> methods of conservation. 4c. Herbal garden. |
| 04 | - | 04 | | |


 Name and Signature of Teacher




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

Academic Year: 2023-2024

Name of the teacher: **Dr. Abhijeet Rajaram Kasarkar**

Programme: **B. Sc. II**

Semester: **IV**

Subject: **Botany**

Course Title: **“Plant Anatomy and Plant Metabolism”**

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|--|---|
| Lectures | Practical's | Total | Section : I Unit I: Organization of higher plant body | 1a. Study of plant organs. |
| 04 | - | 04 | | 1b. Study of plant body (Seedling development). |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit I: Organization of higher plant body | 1b. Study of plant body (Seedling development). |
| 04 | - | 04 | | 1c. Internal organization. |
| Month: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Section : II Unit IV: Seed Dormancy and Germination | 4a. Concept of dormancy, causes and types of seed dormancy. |
| 04 | - | 04 | | 4b. Methods of breaking of seed dormancy. |
| Month: April | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit III: Taxonomic Literature Practical I and II | 4c. Seed germination – Introduction and types. |
| 04 | - | 04 | | 4d. Factors affecting on seed germination. |

Name and Signature of Teacher



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

Academic Year: 2023-2024

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 | Practical's | Total | Section : I Unit III: Methods of weed management Practical I | 3a. Mechanical methods of weed management. |
| 04 | 04 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit III: Methods of weed management Practical I | 3b. Biological methods of weed management. |
| 04 | 04 | 08 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit IV: Methods of Plant Protection - II Practical I | 3c. Chemical methods of weed management. |
| 04 | 04 | 08 | | |
| Month: April | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Unit IV: Methods of Plant Protection - II | 3d. Study of weedicides with reference to properties, mode of action, formulation and uses. |
| 03 | 02 | 05 | | |


 Name and Signature of Teacher




 Name and Signature of HoD

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

Academic Year: 2023-2024

Name of the teacher: Dr. Abhijeet Rajaram Kasarkar

Programme: B. Sc. III

Semester: VI

Subject: Botany

Course Title: "Horticulture, Forestry and Herbal Technology"

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|--|---|
| Lectures | Practical's | Total | Section : II Unit I: Horticulture Practical II | 1a. Introduction and importance of horticulture. |
| 02 | 02 | 04 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Section : II Unit I: Horticulture Practical II | 1b. Methods of propagation - Asexual and sexual. 1c. Plant Nursery – Introduction, Types of nursery. |
| 04 | 04 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Section : II Unit I: Horticulture Practical II | 1c. Infrastructure and requirement. Use of fertilizers and pesticides. |
| 04 | 04 | 08 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Section : II Unit I: Horticulture | 1c. Commercial importance of nursery. |
| 02 | - | 02 | | |

Name and Signature of Teacher

Dr. Abhijeet Kasarkar



Name and Signature of HoD

Dr. Anurag

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DEPARTMENT OF BOTANY
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Vivekanand College, Kolhapur (Autonomous)
Department of Botany
Annual Teaching Plan

Academic Year: **2023-2024**


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

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

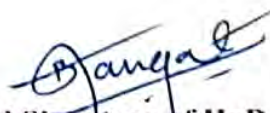
Subject: **Botany**

Course Title: “ **Taxonomy, Embryology and Plant Physiology**”

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|--|---|
| Lectures | Practicals | Total | Section : I Unit II: Pollination and Fertilization Practical I and II | 2a. Definition, Types and mechanism in Anemophily (<i>Zea mays</i>), Entomophily (<i>Calotropis</i>) and Hydrophily (<i>Vallisneria</i>), Mimicry (Orchid). |
| 03 | 04 | 07 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit II: Pollination and Fertilization Practical I and II | 2b. Fertilization: Entry of pollen tube, double fertilization and triple fusion. Significance of double fertilization. |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 03 | 04 | 07 | Unit II: Pollination and Fertilization Practical I and II | 2c. Structure and development of embryo in Monocotyledons. |
| Month: November | | | Module/Unit: | Sub-units planned |
| 02 | 02 | 04 | Unit II: Pollination and Fertilization Practical I and II | 2d. Structure and development of embryo in Dicotyledons. |


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




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

Academic Year: 2023-2024

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 | Section : I Unit I: Introduction of agriculture and study of major crops Practical I and II | 1a. Introduction and importance of agriculture. 1b. Study of following crops of Maharashtra A. Cereal – Rice |
| 03 | 04 | 07 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit I: Introduction of agriculture and study of major crops Practical I and II | B. Oil seed crop – Soybean C. Pulse crop – Gram |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit I: Introduction of agriculture and study of major crops Section : II Unit IV: Phytopathological skills Practical I and II | D. Cash crop - Sugarcane 4a. Principles of plant disease management |
| Month: November | | | Module/Unit: | Sub-units planned |
| 02 | 02 | 04 | Unit IV: Phytopathological skills Practical I and II | 4b. Classification of fungicides based on chemical nature and Mode of action. |

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



D. Jangale
 Name and Signature of HoD
 Department of Botany
 Vivekanand College
 Kolhapur

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

Academic Year: 2023-2024

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

Programme: **B. Sc. III**

Semester: **V**

Subject: **Botany**

Course Title: **“Cytology and Research Techniques in LifeSciences & Microbiology, Plant Pathology and Bio fertilizers” And “Plant Biochemistry and Stress Physiology& Plants Systematics and Paleobotany”**

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|---|---|
| Lectures | Practicals | Total | Section : II Unit II: Plant Pathology Practical | 2a:Classification of plant diseases based on Pathogens, Crops and Symptoms. |
| 04 | 04 | 08 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Section : II Unit II: Plant Pathology Practical | 2b:Study of Mechanism of Infection in Disease development(Biochemical changes),prevention and control of Plant Diseases. Role of Quarantine, Significance Of Plant Pathology. |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 05 | 04 | 09 | Section : I Unit III: Stress physiology. Practical | 3a:Defining Plant stress. 3b:Types of stress:-Water stress-Salinity strees, light stress, |
| Month: November | | | Module/Unit: | Sub-units planned |
| 04 | 02 | 06 | Section : I Unit III: Stress physiology. Practical | Temperature stress. 3c: Stress sensing mechanisms in plants, Calcium Signaling, Phospho lipid signaling |

Name and Signature of Teacher

[*Jyoti M. Gorule*
Dr. Jyoti M. Gorule]



Name and Signature of HoD

[*Gangadhar*
Department of Botany
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Kolhapur]

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

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

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

Subject: **Botany**

Course Title: **Practical OE**

| Month: December | | | Module/Unit: | Sub-units planned |
|------------------------|-----------|-------|---------------------|--------------------------|
| Lectures | Practical | Total | Practical | -- |
| 00 | 03 | 03 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Practical | -- |
| 00 | 04 | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| 00 | 04 | 04 | Practical | -- |
| Month: March | | | Module/Unit: | Sub-units planned |
| 00 | 04 | 04 | Practical | -- |

Name and Signature of Teacher

[*J.M. Gorule*]
[Dr. J. M. Gorule]

Name and Signature of HoD

[*J. Gorule*]
HEAD
DEPARTMENT OF BOTANY
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(EMPOWERED AUTONOMOUS)



Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

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

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

Subject: **Plant Protection**

Course Title: **DSC 1011D2: "Weed Science and Insect Pest"**

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|--------------------------------|--|
| Lectures | Practical | Total | Section : II "Insect Pest " | Study of following of different crops with reference to – a)Scientific name b) Marks of identification c) Life cycle d) Nature of damage e) Management practices of Maize - Fall army worm of Maize |
| 02 | -- | 02 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit II: Study of insect pests | Sugarcane – White grub Gram – Pod borer |
| 04 | -- | 04 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Unit II: Study of insect pests | Mango – Hoppers Brinjal – Top shoot borer Rose – Bud borer |
| Month: April | | | Module/Unit: | Sub-units planned |
| 03 | -- | 03 | Unit II: Study of insect pests | 2b: Stored grain pests and their management. i) Rice weevil ii) Pulse beetle |

J.M. Gorule

Name and Signature of Teacher

[**Dr. J.M. Gorule**]



Jyoti M. Gorule

Name and Signature of HoD

HEAD

**DEPARTMENT OF BOTANY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)**

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024


Name of the teacher: Dr. Jyoti M. Gorule

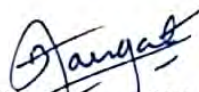
Programme: B. Sc. II Semester: IV

Subject: Botany

Course Title: Practical II

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|--------------|-------------------|
| Lectures | Practical | Total | Practical II | -- |
| 00 | 03 | 03 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Practical II | -- |
| 00 | 04 | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| 00 | 04 | 04 | Practical II | -- |
| Month: March | | | Module/Unit: | Sub-units planned |
| 00 | 04 | 04 | Practical II | -- |


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


Name and Signature of HoD
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VIVEKANAND COLLEGE, KOLHAPUR
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Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Jyoti M. Gorule

Programme: B. Sc. III

Semester: VI

Subject: Botany

Course Title: Section: II (DSE 1007F1): Biostatistics, Economic Botany and Ethno botany

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|--|--|
| Lectures | Practical | Total | Section II: Unit 2: Economic Botany-I Practical IV | 2a: Study of following economical important plant with reference to origin, morphology, parts used and uses. Introduction |
| 02 | 03 | 05 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit 2: Economic Botany-I Practical IV | 2b:Cereals- Barley and Oats |
| 04 | 04 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit 2: Economic Botany-I Practical IV | 2c:Legumes– Soybeana and Vigna 2d:Vegetables– Spinach |
| Month: March | | | Module/Unit: | Sub-units planned |
| 03 | 02 | 05 | Unit 2: Economic Botany-I Practical IV | 2e: Spices-Clove and blackpepper |

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: 2023-2024

Name of the teacher: Dr. Annapurna Ram Alvikar

Programme: B. Sc. III

Semester: V

Subject: Botany

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

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-----------|-------|---|---|
| Lectures | Practical | Total | Section II: Unit I: Microbiology | Introduction, Methods in microbiology. |
| 03 | 03 | 06 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit I: Microbiology | Methods in microbiology, Micro-organisms in biological world. |
| 04 | 04 | 08 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit I: Microbiology. Paper VI, Section I, Unit IV Senescence and Aging | Scope of Microbes in Industry and Environment. Introduction, Patterns of senescence. |
| Month: November | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit IV- Senescence and Aging | Physical changes during senescence, Control of senescence. |

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: **2023-2024**

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


Programme: **B. Sc. II**

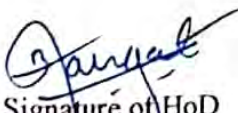
Semester: **III**

Subject: **Botany**

Course Title: - **"Plant Physiology"**

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


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


 Name and Signature of HoD
 Head
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 Kolhapur



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

Academic Year: 2023-2024

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

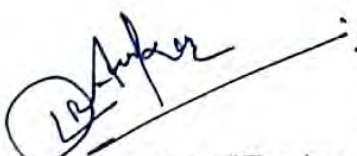
Programme: **B. Sc III**

Semester: **VI**


Subject: **Botany**

Course Title: **"Genetics and Plant breeding"**

| Month : 07 December | | | Module/Unit: | Sub-units planned |
|---------------------|------------|-------|--|--|
| Lectures | Practicals | Total | Paper: DSE 7 F1 Section I : Unit 3 – Extra–Chromosomal Genome | 3a: Introduction and Organization of genome |
| 03 | -- | 03 | | |
| Month : January | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Paper: DSE 7 F1 Section I : Unit 3 – Extra–Chromosomal Genome | 3a: Introduction and Organization of genome 3b: Plastid Inheritance |
| 04 | -- | 04 | | |
| Month : February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Paper: DSE 7 F1 Section I : Unit 3 – Extra–Chromosomal Genome Paper: DSE 7 F2 Section I: Unit 1: Genetic Material | 3c: Mitochondrial Inheritance 1a: Introduction, Nucleic Acids(DNA, RNA) |
| 04 | -- | 04 | | |
| Month : March | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Paper: DSE 7 F2 Section I: Unit 1: Genetic Material | 1b:Griffith's and Avery's transformation experiment, Hershey-Chase bacteriophage experiment 1c:DNA structure and Types of DNA |
| 04 | -- | 04 | | |
| Month : April | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Paper: DSE 7 F2 Section I: Unit 1: Genetic Material | 1d: DNA replication 1e: Types of RNA |
| 04 | -- | 04 | | |


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




 Name and Signature of HoD
 DEPARTMENT OF BOTANY
 VIVEKANAND COLLEGE, KOLHAPUR
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Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Botany
Annual Teaching Plan

Academic Year: **2023-2024**

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

Programme: **B. Sc II**

Semester: **IV**

Subject: **Botany**

Course Title: **“Plant Anatomy and Plant Metabolism”**

| Month : January | | | Module/Unit: | Sub-units planned |
|------------------|-------------|-------|---|---|
| Lectures | Practical's | Total | Paper IV-“ Plant Metabolism ” Section I : Unit 2 : Nitrogen Metabolism | 2a. Introduction – Role of N ₂ |
| 03 | 03 | 06 | | |
| Month : February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Paper IV-“ Plant Metabolism ” Section I : Unit 2 : Nitrogen Metabolism | 2b. Biological Nitrogen Fixation- Asymbiotic and Symbiotic |
| 03 | 03 | 06 | | |
| Month : March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Paper IV-“ Plant Metabolism ” Section I : Unit 2 : Nitrogen Metabolism | 2c. General structure and role of Nitrogenase 2d. Mechanism of Reduction of Nitrate into Ammonia |
| 04 | 04 | 08 | | |
| Month : April | | | Module/Unit: | Sub-units planned |
| Lectures | Practical's | Total | Paper IV-“ Plant Metabolism ” Section I : Unit 2 : Nitrogen Metabolism | 2e. Mechanism of Ammonia assimilation in plants. 2g. nif genes |
| 04 | 04 | 08 | | |

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



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

Academic Year: **2023-2024**

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

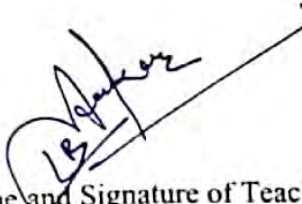
Programme: **B. Sc I**

Semester: **II**

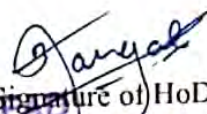
Subject: **Botany**

Course Title: **Practical's**

| Month : December | | | Module/Unit: | Sub-units planned |
|------------------|-------------|-------|--------------|-------------------|
| Lectures | Practical's | Total | -- | -- |
| -- | 01 | 01 | | |
| Month : January | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | -- | -- |
| -- | 04 | 04 | | |
| Month : February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | -- | -- |
| -- | 03 | 03 | | |
| Month : March | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | -- | -- |
| -- | 04 | 04 | | |


 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: 2023-2024

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 II: Cell Organelles | Introduction, Eukaryotic cell components-Nucleus |
| 02 | -- | 02 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit II: Cell Organelles | Eukaryotic cell components- Endoplasmic reticulum, Golgi complex |
| 04 | -- | 04 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Unit II: Cell Organelles | Glyoxisomes, Peroxisomes and Lysosomes- Structure, composition and functions Specialized cell organelle- Ribosome |

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

D. Jayak
 Name and Signature of HoD
Head
 Department of Botany
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 Kolhapur



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

Academic Year: 2023-2024

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: | Diseases caused by phytoplasma- Little leaf of Brinjal |
| 04 | -- | 04 | Unit III: Study of crop diseases with reference to pathogen, symptoms, disease cycle and their management | Diseases caused by viruses- Tobacco mosaic virus |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Study of crop diseases with reference to pathogen, symptoms, disease cycle and their management | Diseases caused by Bacteria- Oily spot of pomegranate |
| 04 | -- | 04 | | Diseases caused by Fungi- Rust of Soybean |
| Month: November | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Unit III: Study of crop diseases with reference to pathogen, symptoms, disease cycle and their management | Diseases caused by Fungi- White rust of crucifers, Grain smut of Jowar, Tikka Disease of Groundnut |

Priya Patil
 Name and Signature of Teacher

(Dr. Priya D. Patil)



D. Jangal
 Name and Signature of HoD
 Head
 Department of Botany
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Vivekanand College, Kolhapur (Autonomous)
Department of Botany
Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Priya Digambar Patil

Programme: B. Sc. I

Semester: I

Subject: Botany

Course Title: "Basics in Botany"

| Month: July | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|--|--|
| Lectures | Practicals | Total | Unit II: General outline of plant kingdom | Study of characters of plant kingdom |
| 02 | -- | 02 | | |
| Month: August | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit II: General outline of plant kingdom | Study of classification of plant kingdom |
| 04 | -- | 04 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| 02 | | 02 | Unit II: General outline of plant kingdom | Study of five divisions with respect to characters and economic importance |
| 03 | -- | 03 | Unit IV: Organization of higher plant body | Plant organs (Root, Stem and Leaf) Development of plant body |
| Month: October | | | Module/Unit: | Sub-units planned |
| 02 | | 02 | Unit IV: Organization of higher plant body | Internal organization |
| 03 | -- | 03 | | Study of tissue systems- Meristematic tissue, simple and complex tissue |

Name and Signature of Teacher

(Dr. Priya D. Patil)



Name and Signature of HoD

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Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

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

Programme: **B. Sc. III**

Semester: **VI**

Subject: **Botany**

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

| Month: December | | | Module/Unit: | Sub-units planned |
|------------------------|-----------|-------|---|---|
| Lectures | Practical | Total | DSE-1007F3 Section I: Unit 3: Genetic Engineering | Introduction, Methods of gene transfer |
| 02 | -- | 02 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit 3: Genetic Engineering | Direct gene transfer techniques, Agrobacterium mediated gene transfer |
| 04 | -- | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Unit 3: Genetic Engineering | Transgenic plants (Bt cotton & Golden Rice) Applications of genetic transformation |
| Month: March | | | Module/Unit: | Sub-units planned |
| 03 | -- | 03 | Unit 3: Genetic Engineering | Blotting techniques- Northern, Southern and DNA fingerprinting |

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



D. Gangal
Name and Signature of HoD
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Vivekanand College, Kolhapur (Empowered 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: January | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|---|--|
| Lectures | Practical-I | Total | DSC 1011D2 Section II: Unit 1: Introduction to insect pests | Definition and losses caused by insect pests |
| 02 | -- | 02 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical-I | Total | DSC 1011D2 Unit 1: Introduction to insect pests | 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: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practical-I | Total | DSC 1011D2 Unit 4: Recent trends in pest management | Introduction a) Attractants b) Repellents c) Antifeedants d) Pheromones |
| 04 | -- | 04 | | |
| Month: April | | | Module/Unit: | Sub-units planned |
| Lectures | Practical-I | Total | Unit 4: Recent trends in pest management | e) Chemosterilants Precautionary measures used during pesticides |
| 03 | -- | 03 | | |

Priya D. Patil
Name and Signature of Teacher



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Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

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

Programme: **B. Sc. I**

Semester: **II**

Subject: **Botany**

Course Title: **"Reproductive Botany"**

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|------------|-------|---|--|
| Lectures | Practicals | Total | DSC03BOT21 MIN03BOT21 Unit I: Study of Microsporogenesis | Study of microsporangium |
| 02 | 02 | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit I: Study of Microsporogenesis | Study of anther (Structure and dehiscence) Study of microsporogenesis |
| 03 | 04 | 07 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| 02 | 04 | 02 | Unit I: Study of Microsporogenesis Unit IV: Endosperm and Embryo | Study of pollen grain Study of development of male gametophyte Introduction, Development of endosperm, Types of endosperms, Embryogeny |
| 03 | | 07 | | |
| Month: April | | | Module/Unit: | Sub-units planned |
| 02 | 04 | 02 | Unit IV: Endosperm and Embryo | Structure of dicot and monocot embryo, Seed formation, Polyembryony |
| 03 | | 07 | | |

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



D. Jangale
 Name and Signature of HoD
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Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Priya Digambar Patil

Programme: B. Sc. II

Semester: IV

Subject: Botany

Course Title: "Taxonomy, Embryology and Plant Physiology"

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|-------------|-------|--------------|-------------------|
| Lectures | Practical-I | Total | | |
| -- | 02 | 02 | | |
| Month: February | | | | |
| Lectures | Practical-I | Total | | |
| -- | 04 | 04 | | |
| Month: March | | | | |
| Lectures | Practical-I | Total | | |
| -- | 04 | 04 | | |
| Month: April | | | | |
| Lectures | Practical-I | Total | | |
| -- | 04 | 04 | | |

Priya D. Patil
Name and Signature of Teacher



Priya D. Patil
Name and Signature of HoD
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Vivekanand College, Kolhapur (Autonomous)
Department of Botany
Annual Teaching Plan

Academic Year: 2023-2024

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 and Microbiology, Plant Pathology and Biofertilizers"**

"Biochemistry and Plant Physiology and Plant Systematics and Paleobotany"

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-----------|-------|--|--|
| Lectures | Practical | Total | Paper DSE7E1 Section I: Unit III: Analytical techniques in plant sciences | Principles of Microscopy, Light Microscopy, Fluorence Microscopy, Electron Microscopy (TEM and SEM) Chromatography- Principles- Paper chromatography, TLC and HPLC |
| 07 | -- | 07 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit III: Analytical techniques in plant sciences Paper DSE7E2 Section II: Plant Systematics and Paleobotany Unit- I: Importance of Plant Systematics | Micrometry, Microphotography, Electrophoresis Introduction, Evidences, Cytology, Phytochemistry and molecular data |
| 07 | -- | 07 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 07 | -- | 07 | Unit- I: Importance of Plant Systematics | Field inventory, Functions of Herbarium, Important Herbaria and Batanical gardens of the world and India |

Name and Signature of Teacher

(**Dr. Lubdha Abhijeet Kagale**)



Name and Signature of HOD

(**Dr. B. T. Dangat**)
Head

Department of Botany
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Kolhapur

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

Academic Year: 2023-2024

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 General Agriculture and Plant Pathology Section I: Unit III: Methods of Plant Protection Part 1 | Cultural methods- crop rotation, Tillage, trap crops, fertilizer applications, land following, timely sowing, proper soil selection Mechanical Methods- Field sanitation, hand picking |
| 04 | -- | 04 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Methods of Plant Protection Part 1 | Destruction of infected plants, egg masses, light traps, use of sticky bands, bagging for the pests, pheromone traps Physical methods: Heat and Solarization methods |
| 04 | -- | 04 | | |
| Month: November | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Section II Plant Pathology Unit: II Mechanism of Plant Protection | Mechanism of infections (Fungi, Bacteria and viruses) Factors affecting infections |
| 03 | -- | 03 | | |

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Name and Signature of Teacher

(Dr. Lubdha Abhijeet Kagale)



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Name and Signature of HOD

(Dr. B. T. Dangat)

Head

Department of Botany
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 Kolhapur

Vivekanand College, Kolhapur (Autonomous)

Department of Botany
Academic Year: 2023-2024
Annual Teaching Plan

Name of the teacher: Dr. Lubdha Abhijeet Kagale

Programme - B. Sc. I

Semester- II

Subject: Botany (Open Elective)

Course Title: "Herbal Technology I"

"Herbal Technology II"

| Month - January | | | Module/Unit: | Sub-units planned |
|-------------------------|------------|-------|---|--|
| Lectures | Practicals | Total | Paper -I Unit - III | Study of different plant parts used in medicine. Study of plants used in hair care (Reetha and Shikekai) |
| 04 | - | 04 | Study of Medicinal Plant -I | |
| Month - February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Study of Medicinal Plant -I | Study of plants used in skin care (Aloe Vera, Turmeric), Study of plants used as antidiabetic (Guduchi, Neem, Jamun) |
| 04 | - | 04 | | |
| Month- March | | | Module/Unit: | Sub-units planned |
| 04 | - | 04 | Paper -I Unit - III Analytical Pharmacognosy | Study of Secondary Metabolites, Drug Adulteration |
| Month- April | | | Module/Unit: | Sub-units planned |
| 03 | - | 03 | Paper -I Unit - III Analytical Pharmacognosy | Types of Drug Adulteration, Methods of Drug Evaluation |

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Name and Signature of Teacher

Dr. Lubdha A. Kagale



Name and Signature of HOD

Dr. B.T. Dangat
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Department of Botany
Academic Year: 2023-2024
Annual Teaching Plan

Name of the teacher: Dr. Lubdha Abhijeet Kagale

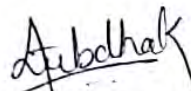
Programme – B.Sc. II

Semester- IV

Subject: Botany

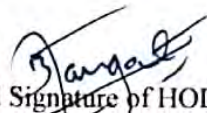
Course Title: Taxonomy, Embryology and
Plant Pathology, Plant Anatomy and Metabolis

| Month - January | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|------------------|--|
| Lectures | Practicals | Total | Paper – I and II | Taxonomy, Embryology and Plant Pathology, Plant Anatomy and Metabolism |
| - | 07 | 07 | | |
| Month – February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Paper – I and II | Taxonomy, Embryology and Plant Pathology, Plant Anatomy and Metabolism |
| - | 07 | 07 | | |
| Month- March | | | Module/Unit: | Sub-units planned |
| - | 08 | 08 | Paper – I and II | Taxonomy, Embryology and Plant Pathology, Plant Anatomy and Metabolism |
| Month- April | | | Module/Unit: | Sub-units planned |
| - | 07 | 07 | Paper – I and II | Taxonomy, Embryology and Plant Pathology, Plant Anatomy and Metabolism |


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
Academic Year: 2023-2024
Annual Teaching Plan

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 - January | | | 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 of entry Stomach, Contact |
| 03 | 0 | 03 | | |
| Month – February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Management of Insect Pest | Systemic insecticide and fumigants, mode of action and chemical nature |
| 02 | 0 | 02 | | |
| Month- March | | | Module/Unit: | Sub-units planned |
| 03 | 0 | 03 | Management of Insect Pest | Plant origin insecticides, Nature of formulations Utilization of entomopathogenic nematodes in IPM |
| Month- April | | | Module/Unit: | Sub-units planned |
| 03 | 0 | 03 | Management of Insect Pest | Need of formulations, Adjuvant |

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Name and Signature of Teacher
Dr. Lubdha A. Kagale



B. T. Dangat
Name and Signature of HOD
Dr. B. T. Dangat
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VIVEKANAND COLLEGE, KOLHAPUR
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Department of Botany
Academic Year: 2023-2024
Annual Teaching Plan

Name of the teacher: Dr. Lubdha Abhijeet Kagale

Programme - B. Sc. III

Semester- VI

Subject: Botany

Course Title- Biostatistics, Economic Botany and Ethnobotany
Molecular Biology and Biotechnology

| Month - December | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|---|--|
| Lectures | Practicals | Total | Paper – DSE 1007 F2 Section – II Unit - IV Ethnobotany | Introduction and objectives, Data collection, Herbarium, Field work, |
| 02 | - | 02 | | |
| Month – January | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Ethnobotany | Role of Ethnobotany in modern medicine, Ancient literature, Sacred groves |
| 04 | 04 | 08 | | |
| Month- February | | | Module/Unit: | Sub-units planned |
| 03 | 03 | 06 | Ethanobotany and Herbal technology | Archaeological findings, Pharmacognosy, Phytochemicals |
| Month- March | | | Module/Unit: | Sub-units planned |
| 04 | 03 | 07 | Paper – DSE 1007 F2 Section – IV-Unit IV Plant Tissue Culture | Principle and Totipotency, Components of tissue culture, Sterilization techniques |
| Month- April | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Paper – DSE 1007 F2 Section – IV-Unit IV Plant Tissue Culture | Techniques in tissue culture, organogenesis, Embryogenesis, Anther Culture, Applications of tissue culture |

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Name and Signature of Teacher

Dr. Lubdha A. Kagale



Dangat

Name and Signature of HOD

Dr. B. T. Dangat
HEAD

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

Academic Year: 2023-2024

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

Programme: **B. Sc. III**

Semester: **V**

Subject: **Botany**

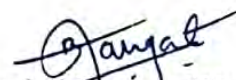
Course Title: **“Cytology and Research Techniques in life sciences and Microbiology, Plant Pathology and Biofertilizers”**

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-----------|-------|---|---|
| Lectures | Practical | Total | Section II: Unit III: Study of Plant Diseases | Introduction, Cereals: Rust of Wheat |
| 02 | -- | 02 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit III: Study of Plant Diseases | Cashcrop: Red Rot of Sugarcane Legume: Wilt of Gram Spices: Leaf spot of Black Peeper |
| 04 | -- | 04 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 03 | -- | 03 | Unit III: Study of Plant Diseases | Vegetable: Onion Smut Fruit: Apple Scab |



Name and Signature of Teacher

(Dr. Mrunalini N. Desai)

Name and Signature of HoD

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

Academic Year: 2023-2024

Name of the teacher: Dr. Mrunalini Nilesh Desai

Programme: B. Sc. II

Semester: III

Subject: Botany

Course Title: "Plant Physiology"

| Month: July | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|---|--|
| Lectures | Practicals | Total | Unit I: Plant Water Relationship | Introduction, Physiological importance of water |
| 02 | -- | 02 | | |
| Month: August | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit I: Plant Water Relationship | Water transport process: Mechanism of water absorption: Active and passive absorption theories Water transport through xylem and tracheids |
| 02 | -- | 02 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| 02 | | 02 | Unit I: Plant Water Relationship | Transpiration: Definition, Types, Mechanism of stomatal movement, Starch sugar hypothesis |
| Month: October | | | Module/Unit: | Sub-units planned |
| 02 | | 02 | Unit I: Plant Water Relationship | Factors affecting transpiration, Significance of transpiration Anti transpirants |

(Signature)

Name and Signature of Teacher

(Dr. Mrunalini N. Desai)



(Signature)
Name and Signature of HoD

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Department of Botany
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Kolhapur



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

Academic Year: 2023-2024

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: | |
| 04 | -- | 04 | Unit II: Study of crops with reference gross morphology, economic importance, soil, field preparation, cultivars, seed sowing, interculture operations, fertilizers, irrigation, intercropping, yield, major diseases and pests. | Fruit Crop: Mango Vegetable crop: Brinjal |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit II: Study of crops with reference gross morphology, economic importance, soil, field preparation, cultivars, seed sowing, interculture operations, fertilizers, irrigation, intercropping, yield, major diseases and pests. | Spice: Turmeric Floriculture: Rose |
| 04 | -- | 04 | | |
| Month: November | | | Module/Unit: | Sub-units planned |
| 02 | -- | 02 | Section II Plant Pathology Unit IV: Phytopathological Skills | Principles of plant disease management Classification of fungicides based on chemical nature and Mode of action |

Name and Signature of Teacher

(Dr. Mrunalini N. Desai)



Name and Signature of HoD

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

Academic Year: 2023-2024

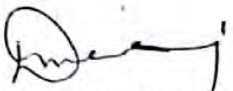
Name of the teacher: Dr. Mrunalini Nilesh Desai

Programme: B. Sc. I Semester: II


Subject: Botany (Open Elective)

Course Title: "Herbal Technology- I"

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|--|--|
| Lectures | Practical | Total | "Herbal Technology- I" Paper I: Unit I: Herbal medicine | 1a. Definition of herbal medicine. 1b. History and Scope |
| 03 | -- | 03 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Paper I: Unit I: Herbal medicine Paper II: | 1c. Role of medicinal plants in Ayurveda. 1d. Importance of herbal medicine. 1e. Herbal drug industries. |
| 04 | -- | 04 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | "Herbal Technology-II" Paper I: Unit I: Pharmacognosy | 1a. History and definition 1b. Importance of Pharmacognosy. |
| Month: April | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | "Herbal Technology-II" Paper I: Unit I: Pharmacognosy | 1c. Study of technique of Pharmacognosy. 1d. Role of Pharmacognosy in medicines. |


 Name and Signature of Teacher
 Dr. Mrunalini N. Desai




 Name and Signature of HOD
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Department of Botany
Annual Teaching Plan

Academic Year: 2023-2024

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

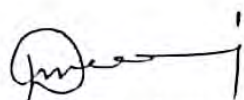
Programme: **B. Sc. III**

Semester: **VI**

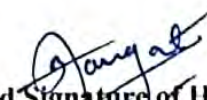
Subject: **Botany**

Course Title: **"Biostatistics, Economic Botany and Ethnobotany"**

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|--|--|
| Lectures | Practical | Total | Section II: Unit I: Biostatistics | 1a. Introduction, Statistical terms 1b. Sampling- Sampling methods 1c. Collection and Representation of data |
| 03 | 04 | 07 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Section II: Unit I: Biostatistics | 1d. Measures of Central Tendency- Mean, Mode, Median 1e. Variances and Standard deviation 1f. Test of Significance |
| 04 | 04 | 08 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| 03 | 04 | 07 | Section II: "Horticulture, Forestry and Herbal Technology" Unit IV: Herbal Technology | 4a. Pharmacognosy- Definition and Techniques. 4b. Phytochemicals- Alkaloids and Phenols |
| Month: April | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Section II: "Horticulture, Forestry and Herbal Technology" Unit IV: Herbal Technology | 4c. Drug- types and adulteration 4d. Scope of Pharmacognosy |



Name and Signature of Teacher
(*Dr. Mrunalini N. Desai*)



Name and Signature of HOD
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Department of Botany
Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Mrunalini Nilesh Desai

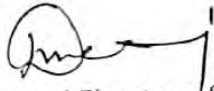
Programme: B. Sc. II

Semester: IV

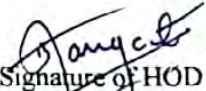
Subject: Botany

Course Title: "Plant Anatomy and Plant Metabolism"

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|---------------|-------|--|--|
| Lectures | Practicals-II | Total | Section I Plant Anatomy Unit III: Primary and Secondary structure of Plant body | Primary structure of Monocotyledon root, stem and leaf |
| 02 | 06 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Primary and Secondary structure of Plant body | Primary structure of Dicotyledon root, stem and leaf, Normal secondary growth in dicot root and stem |
| 03 | 08 | 11 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| 03 | 08 | 11 | Unit III: Primary and Secondary structure of Plant body | Anomalous secondary growth in Bignonia and Dracaena stem |
| Month: April | | | Module/Unit: | Sub-units planned |
| 02 | 06 | 08 | Unit III: Primary and Secondary structure of Plant body | Periderm and Lenticel |


Name and Signature of Teacher

(Dr. Mrunalini Nilesh Desai)


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

Academic Year: 2023-2024

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: January | | | Module/Unit: | Sub-units planned |
|-----------------|------------|-------|---|---|
| Lectures | Practicals | Total | Paper II "Weed science and Insect Pest" Unit IV: Non Insect Pest and Household pest | 4a. Nematodes 4b. Birds |
| 03 | -- | 03 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Paper II "Weed science and Insect Pest" Unit IV: Non Insect Pest and Household pest | 4c. Rats 4.d Snails |
| 04 | -- | 04 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit IV: Non Insect Pest and Household pest | 4e. Household pests: 1. Drosophila 2. House fly |
| 04 | -- | 04 | | |
| Month: April | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit IV: Non Insect Pest and Household pest | 3. Mosquitoes |
| 03 | | 03 | | |

Name and Signature of Teacher

Dr. Mrunalini Nilesh Desai

Name and Signature of HOD

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

Academic Year: 2023-2024

Name of the teacher: Dr. Shital B. Koparde

Programme: B. Sc. III

Semester: V

Subject: Botany

Course Title: "Plant Biochemistry and Stress Physiology and Plant systematic and Paleobotany"

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-----------|-------|---|---|
| Lectures | Practical | Total | Section I: Unit II: Lipid metabolism and Fatty acid metabolism | Introduction and classification of lipids. |
| 03 | 2 | 05 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit II: Lipid metabolism and Fatty acid metabolism | Properties of fatty acids and unsaturated fatty acids. Beta oxidation |
| 05 | 4 | 09 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | 5 | 09 | Unit II: Lipid metabolism and Fatty acid metabolism | Gluconeogenesis and role in mobilization of fatty acids during germination. Significance of lipids |

Name and Signature of Teacher

(Dr. Shital B. Koparde)

Name and Signature of Head

(Dr. B.T. Dargat)
Head

Department of Botany
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Kolhapur



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

Academic Year: 2023-2024

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

Programme: **B. Sc. II**

Semester: **III**

Subject: **Botany**

Course Title: **"Plant Physiology"**

| Month: July | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|--------------------------|--|
| Lectures | Practicals | Total | Unit III: Photosynthesis | Introduction: Ultrastructure of photosynthetic apparatus |
| 02 | 02 | 04 | | |
| Month: August | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit III: Photosynthesis | Photosynthetic pigments (Chlorophylls, carotenoids, phycobilins) |
| 02 | 04 | 06 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| 02 | 04 | 06 | Unit III: Photosynthesis | Mechanism of photosynthesis: a) Light reactions b) Dark reactions |
| Month: October | | | Module/Unit: | Sub-units planned |
| 02 | 04 | 06 | Unit III: Photosynthesis | Adaptive pathway of photosynthesis C ₄ pathway and CAM Pathway. Significance of photosynthesis |

Signature
 Name and Signature of Teacher
 (Dr. Shital B. Koparde)

Signature
 Name and Signature of Head
 (Dr. B. T. Dargat)
 Head
 Department of Botany
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 Kolhapur



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

Academic Year: 2023-2024

Name of the teacher: Dr. Priyanka Pravin Jadhav

Programme: B. Sc. III

Semester: V

Subject: Botany

Course Title: "Plant Biochemistry and Stress Physiology & Plant Systematics & Paleobotany"

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-----------|-------|--|--|
| Lectures | Practical | Total | Section I: Unit 1: Carbohydrate Metabolism | Introduction, and Classification of Carbohydrates |
| 02 | -- | 02 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit I: Carbohydrate Metabolism | Properties of Monosaccharides, Oligosaccharides, Polysaccharides, Significance of Carbohydrates |
| 04 | -- | 04 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Unit 1: Carbohydrate Metabolism | Introduction properties and Characters of aminoacids. Protein structure and classification protein synthesis |

Priyanka

Name and Signature of Teacher

(Dr. Priyanka P. Jadhav)



Jadhav

Name and Signature of HOD
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Kolhapur

Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Botany
Academic Year: 2023-2024
Annual Teaching Plan

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

Programme - **B. Sc. III**

Semester- **VI**

Subject: **Botany**

Course Title-**"Genetics and plant Breeding "**

| Month - December | | | Module/Unit: | Sub-units planned |
|-------------------------|------------|-------|--|--|
| Lectures | Practicals | Total | Paper – DSE 1007 F1 Section – I Unit – I Heredity | Heredity 1a: Introduction, Terminologies, |
| 02 | - | 02 | | |
| Month – January | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Paper – DSE 1007 F1 Section – I Unit – I Heredity | Terminologies, Laws of Inheritance (Monohybrid and Dihybrid) 1b: Multiple Allelism. |
| 04 | | 04 | | |
| Month- February | | | Module/Unit: | Sub-units planned |
| 03 | | 03 | Paper – DSE 1007 F1 Section – I Unit – II Linkage and Crossing over | Linkage and Crossing over 2a: Linkage- Concept and History, Types of Linkage |



| Month- March | | | Module/Unit: | Sub-units planned |
|---------------------|----|----|--|--|
| 04 | 03 | 07 | Paper – DSE 1007 F1 Section – I Unit – II Linkage and Crossing over | 2b: Crossing over- Concept and Significance, Cytological proof crossing over. |
| Month- April | | | Module/Unit: | Sub-units planned |
| 02 | | 02 | Paper – DSE 1007 F1 Section – I Unit – II Linkage and Crossing over | 2c: Linkage Maps |

PPTadhar

Name and Signature of Teacher

(Dr- Priyanka P. Tadhar)

Sanyal

Name and Signature of HOD

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Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Botany
Academic Year: 2023-2024
Annual Teaching Plan

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

Programme: - **B. Sc. I**

Semester- **II**

Subject:- **Botany**

Course Title:- **“Reproductive Botany and Diversity and conservation of Plants”**

| Month - January | | | Module/Unit: | Sub-units planned |
|-------------------------|------------|-------|--------------|-------------------|
| Lectures | Practicals | Total | | |
| | 07 | 07 | | |
| Month - February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | | |
| | 06 | 06 | | |
| Month- March | | | Module/Unit: | Sub-units planned |
| | 08 | 08 | | |
| Month- April | | | Module/Unit: | Sub-units planned |
| | 04 | 04 | | |

Name and Signature of Teacher

P.P. Jadhav
Dr. Priyanka P. Jadhav

Name and Signature of HOD

P. Jadhav
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Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Botany
Academic Year: 2023-2024
Annual Teaching Plan

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

Programme: **B. Sc. I**

Semester- **II**

Subject: **Botany (Open Elective)**

Course Title: **"Herbal Technology"**

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

P. Jadhav

Name and Signature of Teacher

(Dr. Priyanka P. Jadhav)

D. Jangale

Name and Signature of HOD



Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Botany
Academic Year: 2023-2024
Annual Teaching Plan

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

Programme: – **B.Sc. II**

Semester- **IV**

Subject:- **Botany**

Course Title:- **Taxonomy, Embryology and Plant Pathology**

| Month - January | | | Module/Unit: | Sub-units planned |
|-------------------------|------------|-------|--------------|-------------------|
| Lectures | Practicals | Total | | |
| - | 04 | 04 | | |
| Month – February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | | |
| - | 03 | 03 | | |
| Month- March | | | Module/Unit: | Sub-units planned |
| - | 04 | 04 | | |
| Month- April | | | Module/Unit: | Sub-units planned |
| - | 02 | 02 | | |

PP Jadhav

Name and Signature of Teacher

(*Dr. Priyanka P. Jadhav*)

P. Jadhav

Name and Signature of HOD

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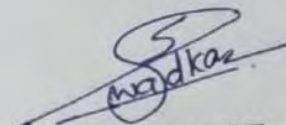
Name of the teacher: **Dr. Snehal Sanjay Wadkar**

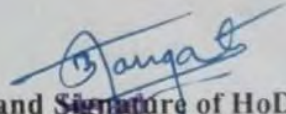
Programme: **B. Sc. II** Semester: **III**

Subject: **Botany**

Course Title: “ **Taxonomy, Embryology and Plant Physiology**”

| Month: September | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|--|---|
| Lectures | Practicals | Total | Section II: Unit IV: Respiration Practical I and II | Introduction Types of respiration |
| 02 | 04 | 06 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit IV: Respiration Practical I and II | Glycolysis Formation of Acetyl Co A TCA cycle |
| 03 | 04 | 07 | | |
| Month: November | | | Module/Unit: | Sub-units planned |
| 03 | 04 | 07 | Unit IV: Respiration Practical I and II | ETS in mitochondria Significance of respiration Factors affecting respiration |


Name and Signature of Teacher
(Dr. S. S. Wadkar)


Name and Signature of HoD
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 Department of Botany
 Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Snehal Sanjay Wadkar

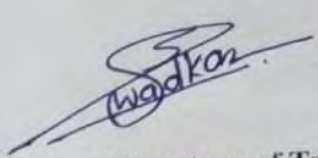
Programme: B. Sc. III

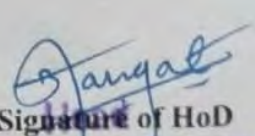
Semester: V

Subject: Botany

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

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-----------|-------|--|--|
| Lectures | Practical | Total | Section II: Unit IV: Paleobotany. | General account types of fossils, Geological time scale |
| 02 | 04 | 06 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit IV: Paleobotany. | Study of following form genera with reference to systematic position, external morphology and affinities – <i>Lyginopteris</i> and <i>Enigmocarpon</i> |
| 03 | 04 | 07 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 03 | 04 | 07 | Unit IV: Paleobotany. | Applications of Paleobotany-Role of microfossils in oil and coal exploration. |


 Name and Signature of Teacher
 (Dr. S. S. Wadkar)


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Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

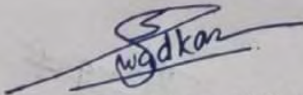
Name of the teacher: **Dr. Snehal S. Wadkar**

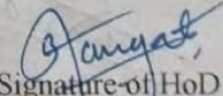
Programme: **B. Sc. I** Semester: **II**

Subject: **Botany**

Course Title: **Practical**

| Month: December | | | Module/Unit: | Sub-units planned |
|------------------------|-----------|-------|---------------------|--------------------------|
| Lectures | Practical | Total | Practical | -- |
| 00 | 03 | 03 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Practical | -- |
| 00 | 04 | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| 00 | 04 | 04 | Practical | -- |
| Month: March | | | Module/Unit: | Sub-units planned |
| 00 | 04 | 04 | Practical | -- |


Name and Signature of Teacher
(**Dr. Snehal S. Wadkar**)


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

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

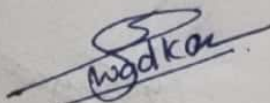
Name of the teacher: Dr. Snehal S. Wadkar

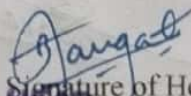
Programme: B. Sc. I Semester: II

Subject: Botany

Course Title: Practical OE

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|--------------|-------------------|
| Lectures | Practical | Total | Practical | -- |
| 00 | 03 | 03 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Practical | -- |
| 00 | 04 | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| 00 | 04 | 04 | Practical | -- |
| Month: March | | | Module/Unit: | Sub-units planned |
| 00 | 04 | 04 | Practical | -- |


Name and Signature of Teacher
(Dr. Snehal S. Wadkar)


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

Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

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

Programme: **B. Sc. II**

Semester: **IV**

Subject: **Botany**

Course Title: **DSC 1007 D: "Plant Anatomy and Plant Metabolism"**

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|--|--|
| Lectures | Practical | Total | Section : II (DSC 1007D2): "Plant Metabolism" Unit 1: Enzymes | 1a. Introduction 1b. Chemical nature and properties of enzymes |
| 02 | 00 | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit 1: Enzymes | 1b. Chemical nature and properties of enzymes 1c. Classification and Nomenclature of enzyme |
| 04 | 00 | 04 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| 04 | 00 | 04 | Unit 1: Enzymes | 1d. Mechanism of enzyme action- Lock and Key hypothesis and Induced fit hypothesis. 1e. Factors affecting enzyme activity- temperature, pH and substrate. |
| Month: April | | | Module/Unit: | Sub-units planned |
| 03 | 00 | 03 | Unit 1: Enzymes | 1f. Allosteric modification and Feedback inhibition. |

Name and Signature of Teacher

(**Dr. Snehal S. Wadkar**)



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Department of Botany

Annual Teaching Plan

Academic Year: 2023-2024

Name of the teacher: Dr. Snehal S. Wadkar

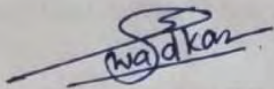
Programme: B. Sc. III

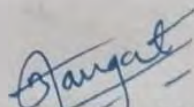
Semester: VI

Subject: Botany

Course Title: Section: II (DSE 1007F1): Biostatistics, Economic Botany and Ethno botany

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|--|--|
| Lectures | Practical | Total | Section II: Unit 3: Economic Botany- II Practical II | 3a: Beverages-Tea and Coffee |
| 02 | 02 | 04 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit 3: Economic Botany- II Practical II | 3b:Fiber Yielding Plants- Cotton and <i>Hibiscus canabinis</i> |
| 04 | 04 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| 04 | 04 | 08 | Unit 3: Economic Botany- II Practical II | 3c:Oil yielding- <i>Pongamia pinnata</i> and Sunflower |
| Month: March | | | Module/Unit: | Sub-units planned |
| 03 | 04 | 07 | Unit 3: Economic Botany- II Practical II | 3d:Dye: <i>Lawsonia</i> and <i>Indigofera</i> |


Name and Signature of Teacher
(Dr. Snehal S. Wadkar)


Name and Signature of HoD
HEAD
DEPARTMENT OF BOTANY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)



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

Academic Year: 2023-2024

Name of the teacher: Miss. Pradnya Baban Shelar

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 I1: Cell as a unit of life | The cell theory, prokaryotic and Eukaryotic cells, Cell Size and shape |
| 02 | -- | 02 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit I1: Cell as a unit of life | Cell membrane and cell wall |
| 04 | -- | 04 | | Models of membrane structure |
| Month: October | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Unit I1: Cell as a unit of life | The functions of membranes Cell cycle Apoptosis |

P. Shelar
Name and Signature of Teacher

(Ms. Pradnya B. Shelar)



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

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

Academic Year: 2023-2024

Name of the teacher: Miss. Pradnya Baban Shelar

Programme: B. Sc. I

Semester: I

Subject: Botany

Course Title: "Basics in Botany"

| Month: July | | | Module/Unit: | Sub-units planned |
|------------------|------------|-------|--|---|
| Lectures | Practicals | Total | Unit I: Importance of plant | Role of plants in human welfare (Direct/Indirect) |
| 02 | -- | 02 | | Role of plants in ecological services |
| Month: August | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit I: Importance of plant | Role of plants in ecological services |
| 02 | -- | 02 | Unit III: Study of following example with reference to occurrence, plant body and life cycle | Evolutionary history of plants |
| 01 | | 01 | | Study of Algae: <i>Nostoc</i> |
| Month: September | | | Module/Unit: | Sub-units planned |
| 02 | | 02 | Unit III: Study of following example with reference to occurrence, plant body and life cycle | Study of Fungi: <i>Mucor</i> |
| 03 | -- | 03 | | Study of Bryophyte: <i>Moss</i> |
| | | | | Study of Pteridophyte: <i>Pteris</i> |
| Month: October | | | Module/Unit: | Sub-units planned |
| 02 | | 02 | Unit III: Study of following example with reference to occurrence, plant body and life cycle | Study of Gymnosperms: <i>Cycas</i> |
| 02 | -- | 02 | | |

Name and Signature of Teacher

(Ms. Pradnya B. Shelar)



Name and Signature of HoD

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 Vivekanand College
 Kolhapur

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year: 2023-24

Annual Teaching Plan

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

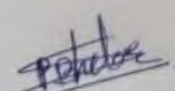
Programme- **B.Sc.I**

Semester- **II**

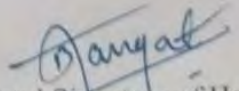
Subject: **Botany**

Course Title: **DSC Reproductive Botany**

| Month- January | | | Module/Unit: | Sub-units planned |
|------------------------|----------------|-----------|--|--|
| Lecture s | Practical s | Total | Unit. II. Study of Megasporogenesis | 2a. Study of types of ovule. 2b. Study of Megasporogenesis. |
| 03 | 04 | 07 | | |
| Month- February | | | Module/Unit: | Sub-units planned |
| Lecture s | Practical s | Total | Unit. II. Study of Megasporogenesis | 2c. Study of typical embryosac. 2d. Study of types of embryosac: Monosporic (Polygonum type), Bisporic (Alliumsp.) and Tetrasporic (Peperomia type) |
| 04 | 04 | 08 | | |
| Month- March | | | Module/Unit: | Sub-units planned |
| Lecture s | Practical s | Total | Unit. III Pollination and Fertilization | 3a. Introduction and definition. 3b. Types of pollination.(self, cross and its sub types) |
| 04 | 04 | 08 | | |
| Month- April | | | Module/Unit: | Sub-units planned |
| Lecture s | Practical s | Total | Unit. III Pollination and Fertilization | 3b. Types of pollination. (self, cross and its sub types) 3c. Agents of pollination. |
| 03 | 04 | 07 | | |


Name and Signature of Teacher
Ms. Pradnya B. Shelar




Name and Signature of HoD
09.12.23

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year: 2023-24

Annual Teaching Plan

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

Programme- **B.Sc.II**

Semester- **II**

Subject: **Botany**

Course Title: **Practical's**

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

Name and Signature of Teacher

(*Ms. Pradnya B. Shelar*)



Name and Signature of HoD

09.12.23

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

Academic Year: 2023-2024

Name of the teacher: Miss. P. B. Shelar

Programme: B. Sc. III

Semester: VI

Subject: Botany

Course Title: Genetics and Plant breeding

| Month: December | | | Module/Unit: | Sub-units planned |
|-----------------|-----------|-------|-------------------------|---|
| Lectures | Practical | Total | Unit IV: Plant Breeding | 4a. Introduction and objectives. |
| 02 | 04 | 06 | | |
| Month: January | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit IV: Plant Breeding | Plant genetic resources Centers of origin and Domestication of crop plants. |
| 04 | 4 | 08 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| 04 | 4 | 08 | Unit IV: Plant Breeding | 4b. Methods of crop improvements. Methods of Breeding Selection methods of Self-pollinated plants |
| Month: March | | | Module/Unit: | Sub-units planned |
| 03 | 3 | 06 | Unit IV: Plant Breeding | Selection methods of cross pollinated and vegetatively propagated plants. Mutation breeding |

P. B. Shelar
(Ms. Pradnya B. Shelar)
Name and Signature of Teacher

P. B. Shelar
Name and Signature of HoD
08.12.23
HEAD
DEPARTMENT OF BOTANY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)



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

Academic Year: 2023-2024

Name of the teacher: **Dr. Desai Udaysingh Arjun**

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

Subject: **Botany**

Course Title: "Taxonomy, Embryology and Plant Physiology"

| Month: August | | | Module/Unit: | Sub-units planned |
|------------------|-----------|-------|---|---|
| Lectures | Practical | Total | Unit : II Mineral Nutrition | Introduction, Criteria of essentiality |
| 02 | -- | 02 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit : II Mineral Nutrition | Macro and Micronutrients |
| 01 | -- | 01 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 02 | -- | 02 | Unit : II Mineral Nutrition | Mineral nutrient uptake-Passive uptake (Diffusion), Active uptake (Carrier Concept - Protein Lecithin Theory). |
| 01 | -- | 01 | Unit : II Mineral Nutrition | Role and Deficiency Disorders of Macronutrients (P, K, Ca, Mg) and Micronutrients(Fe, Mn, Zn, Br) in plants and its recovery. |
| 01 | -- | 01 | Unit : II Mineral Nutrition | Effect of excess minerals on plant growth. |
| Month: November | | | Module/Unit: | Sub-units planned |
| 02 | -- | 02 | Unit . II. Pollination and Fertilization : | Development of endosperm, Types of endosperm- Nuclear, Helobial and Cellular |
| 02 | -- | 02 | Unit . II. Pollination and Fertilization : | Apomixes |

Name and Signature of Teacher
(Dr. Udaysingh A. Desai)



Name and Signature of HoD
(Dr. Arjun Desai)
 Department of Botany
 Vivekanand College
 Kolhapur

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

Academic Year: 2023-2024

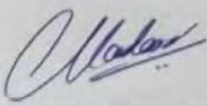
Name of the teacher: **Dr. Desai Udaysingh Arjun**

Program: **B. Sc. III** Semester: **V**

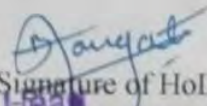
Subject: **Botany**

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 IV: Radiation Biology | Introduction to Radioactive Isotopes Types of Radioactive Isotopes |
| 02 | -- | 02 | | |
| Month: September | | | Module/Unit: | Sub-units planned |
| Lectures | Practical | Total | Unit IV: Radiation Biology | Need of Radiations on Biological Systems. Effect of Radiations on Biological Systems. Beneficial Effect of Radiations |
| 05 | -- | 05 | | |
| Month: October | | | Module/Unit: | Sub-units planned |
| 05 | -- | 05 | Unit IV: Radiation Biology | Autoradiography Technique, Geiger-Muller Experiment /Liquid Scintillation Counter, Precautionary measures |


 Name and Signature of Teacher
 (Dr. Udaysingh A. Desai)




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

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

Academic Year: 2023-2024

Name of the teacher: **Dr. Desai Udaysingh Arjun**

Program: **B. Sc. II**

Semester: **IV**

Subject: **Botany**

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

| Month: January | | | Module/Unit: | Sub-units planned |
|-----------------|------------|-------|--|--|
| Lectures | Practicals | Total | Unit. IV Plant Adaptations | 4a. Mangrove Biology 4b. Xeric adaptations 4c. Carnivorous Plant |
| 04 | -- | 04 | | |
| Month: February | | | Module/Unit: | Sub-units planned |
| Lectures | Practicals | Total | Unit. IV Plant Adaptations | 4d. Epiphytic and Parasitic Plant |
| 03 | -- | 03 | | |
| Month: March | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Unit. III. Growth and Development | 3a. Definition and Phases of growth. 3b. Plant growth regulators: Discovery, site of synthesis, Physiological (Practical applications) roles of growth regulators – Auxins, Cytokinin, Gibberellins and Abscisic acid |
| Month: April | | | Module/Unit: | Sub-units planned |
| 04 | -- | 04 | Unit. III. Growth and Development | 3c. Photoperiodism and Florigen Concept, Photoperiodic classification of plants- LDP, SDP, DNP. 3d. Vernalization: Concept, site of vernalization and its significance. |

Name and Signature of Teacher
Dr. Desai U.A.



Name and Signature of HoD
[Signature]
 DEPARTMENT OF BOTANY
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