Bhogawati Shikshan Prasarak Mandals'

Bhogawati Mahavidyalaya, Kurukali

Kurukali, Tal. - Karveer, Dist.- Kolhapur

PROGRAMME AND COURSE OUTCOMES

Department of Botany

Programme Outcomes for Bachelor of Science in Botany

Academic Year 2025-26

COURSE OUTCOMES – TERM-I : AY 25-26

Part: B. Sc. I (NEP 2020 - 2.0)

Name of the Course : Botany Paper: DSC- I: Phycology and Microbiology

Semester: I **Credits:** 02

Outcomes of the course

After completion of this course learners will be able to;

1. Students will able to recognize the structure, types and multiplication of viruses.
2. Students will able to understand the bacterial types, structure and mode reproduction
3. Students will able to identify the different types of algae and their importance in day today life.
4. Students will able develop the skills for the production of different type of Biofertilizers
5. Students will able to distinguish the prokaryotic and eukaryotic organisms and acquire the knowledge of different plant cell organelles and its role in the plant body.
6. Students will able to understand the different types of cell division and it's phases.
7. Students will able to handle all types of microscopes.

Part: B. Sc. I (NEP 2020 - 2.0)

Name of the Course : Botany Paper: DSC- II : Biomolecules and Cell Biology

Semester: II **Credits:** 02

Outcomes of the course

After completion of this course learners will be able to;

1. Students will able to identify and classify the different fungi and also realize the economic importance of fungi.
2. Students will able to identify the lichens on the basis of morphology and to know the medicinal value of the lichens.
3. Students will be able to recognize the different plant diseases and their management.

4. Students will able to develops the soft skill technique in the Mushroom Cultivation and realize the commercial status of the mushrooms.
5. Students will able to identify the bryophytes their importance.
6. Students will able to recognize the characters and ecological importance of pteridophytes.
7. Students will be able to identify, classify the gymnosperms and understand the Economic importance of gymnosperms.

Part: B. Sc. I (NEP 2.0)

Name of the Course ： OE - I: Introduction to Bio-fertilizers and Organic Fertilizers

Semester: I **Credits:** 02

Course Outcomes (COs)

After successful completion of the practical course "Introduction to Bio and Organic Fertilizers", students will be able to:

1: Identify and differentiate various bacterial, fungal, and algal biofertilizers and explain their role in sustainable agriculture.

2: Recognize important plant–microbe associations, including *Rhizobium*–legume symbiosis and mycorrhizal associations, and understand their significance in plant nutrition.

3: Identify the essential components, carrier materials, and basic requirements used in the preparation and production of biofertilizers.

4: Demonstrate the basic methods of preparation, packaging, labelling, storage, and application of biofertilizers.

5: Classify major chemical fertilizers and understand their nutrient composition, uses, and role in crop production.

6: Demonstrate the basic principles and procedures of composting, vermicomposting, and preparation of liquid organic manure using biodegradable materials.

7: Explain the importance and advantages of biofertilizers and organic fertilizers in improving soil fertility, plant growth, and environmentally sustainable agriculture.

8: Develop practical awareness of fertilizer production and quality-control practices through visits to biofertilizer, organic fertilizer, vermicompost, and chemical fertilizer production centres.

9: Develop skills in the safe handling, preparation, storage, and application of biological and organic fertilizer materials.

10: Compare biofertilizers, organic fertilizers, and chemical fertilizers with respect to their benefits, limitations, and contribution to sustainable agricultural practices.

Part: B. Sc. I (NEP 2.0)

Name of the Course ： OE - I: **Gardening Technology**

Semester: II **Credits:** 02

Course Outcomes (COs)

After successful completion of the practical course **"Gardening Technology**, students will be able to:

1: Identify different types of gardens and lawns and prepare a basic garden layout or map according to functional and aesthetic requirements.

2: Demonstrate the basic techniques involved in lawn establishment, including site preparation, soil preparation, selection of suitable grass, planting, watering, and maintenance.

3: Prepare suitable potting and nursery mixtures using soil, fertilizers, organic matter, and other components for healthy seedling growth.

4: Explain and demonstrate innovative gardening techniques such as terrariums, bottle gardens, and other indoor gardening systems for interior decoration.

5: Identify and explain the application of plant growth promoters and growth regulators for improving plant growth and development in gardens.

6: Identify and classify common ornamental plants, shrubs, grasses, and flowering plants suitable for garden landscaping.

7: Identify plants suitable for composting and understand their role in recycling garden and biodegradable organic waste.

8: Demonstrate appropriate garden maintenance practices, including watering, pruning, training, manuring, sanitation, and effective weed-control methods.

9: Identify common fungal diseases and insect pests affecting garden plants and understand their basic symptoms, causes, and management practices.

10: Prepare and understand the recommended use of herbicides, insecticides, and plant growth promoters, with emphasis on appropriate dosage, safety, and responsible application.

11: Develop practical skills in garden planning, establishment, maintenance, plant protection, and landscape management.

12: Gain field-level exposure to garden design, ornamental plant selection, maintenance systems, and landscaping practices through visits to established gardens.

Part: B. Sc. II (NEP 2020 - 2.0)

Name of the Course : MINOR PAPER V: HORTICULTURE

Semester: V **Credits:** 02

Minor Paper V:

After completing this course, students will be able to:

1. Understand importance of horticulture.
2. Students will become familiar with different branches of Horticulture.
3. Students will understand Different sexual and Asexual methods of Propagation
4. Students will understand different gardening technique.
5. Students will understand different gardening technique.

Part: B. Sc. II (NEP 2020 - 2.0)

Name of the Course : MINOR PAPER VI: PLANT PHYSIOLOGY AND BIOCHEMISTRY

Semester: VI **Credits:** 02

Minor Paper VI:

1. After successful completion of the course, the students will be able
2. to understand the process of plant growth.
3. to understand the role of light in the reproductive growth.
4. to understand the cause of seasonal diversity in flowering plants.
5. to understand the concept of seed dormancy.
6. to understand causes of seed dormancy and methods to overcome seed dormancy.
7. to understand the process of seed germination.
8. to understand importance of enzymes in plant metabolism.
9. to understand process of biological nitrogen fixation.

Part: B. Sc. II (NEP 2020 - 2.0)

Name of the Course : MINOR PAPER VII: BIOLOGICAL TECHNIQUES

Semester: IV **Credits:** 02

Outcomes of the course

After completion of this course learners will be able to;

After successful completion of the course, the students will be able

1. Understand fundamental biological laboratory techniques
2. Develop practical skills in laboratory settings
3. Apply biological techniques to research and problem-solving
4. Analyze and interpret data from biological experiments
5. Demonstrate laboratory safety and best practices

Part: B. Sc. II (NEP 2020 - 2.0)

Name of the Course :MINOR PAPER VIII: PLANT GENETICS AND PLANT UTILIZATION

Semester: IV **Credits:** 02

Minor Paper VIII: After successful completion of the course, the students will be able

1. Students will able to understand the fundamental principles of inheritance.
2. Able to analyse the pedigree charts to determine the inheritance pattern.
3. Gain the basic knowledge of modern genetic tools.
4. Understand the importance of plants in human health.
5. Recognize and classify economically important plants.
6. Understand the use of plants in the industries.

Part: B. Sc. II (NEP 2020 - 2.0)

Name of the Course : SEC-1 FLORICULTURE

Semester: III **Credits:** 02

1. Prepare different types of nursery beds (flat beds, raised beds, ridges, furrows, and basins) and pots for effective plant propagation.
2. Apply various propagation methods, including vegetative (grafting, layering, cuttings, offsets, and budding), asexual, and sexual propagation for key ornamental plants.
3. Demonstrate proper techniques for planting and transplanting different flower crops to ensure high survival and growth rates.
4. Perform training and pruning practices in rose cultivation to improve plant structure, health, and flowering efficiency.
5. Evaluate the role of plant growth regulators (PGRs) in enhancing the quality and yield of flower crops.
6. Apply drying and preservation techniques to maintain the aesthetic and commercial value of flowers.
7. Implement packaging and marketing strategies for fresh and preserved flowers to meet market demands.
8. Identify and manage common diseases and pests affecting ornamental and flowering plants.
9. Design and implement landscaping and garden architecture principles for aesthetic and functional purposes.

Part: B. Sc. II (NEP 2020 - 2.0)

Name of the Course : SEC-II ETHNOBOTANY

Semester: IV **Credits: 02**

After completion of this course learners will be able to;

1) Understand the relationship between humans and plants.
2) Identify socially, economically and culturally useful plants.
3) Apply ethnobotanical knowledge in biodiversity conservation and socio-economic development.
4) Explain which parts of the plants are important for usage.
5) Distinguish traditional and modern healthcare.
6) Ethnobotany courses help students to learn about the traditional uses of plants, and
7) how to apply this knowledge in modern contexts.
8) Detect adulterations in drugs.

Part: B. Sc. II (NEP 2020 - 2.0)
Name of the Course : OE-III: ORGANIC FARMING AND BIOPESTICIDES
Semester: III Credits: 02

Outcomes of the course

After completion of this course learners will be able to;

1. Demonstrate the ability to collect and analyze soil samples for pH, moisture, and nutrient levels.
2. Prepare compost using organic waste materials such as kitchen waste, dry leaves, and manure.
3. Apply organic mulching techniques to conserve soil moisture and suppress weed growth.
4. Perform seed treatment using natural methods like neem extract and cow urine to enhance germination and disease resistance.
5. Formulate and use natural pesticides, including neem oil spray, garlic spray, and cow dung-based pesticides.
6. Prepare organic fertilizers such as Jeevamrut and Panchagavya for soil enrichment.
7. Prepare cow urine biopesticide for general pest control and as a plant growth promoter.
8. Utilize fermented buttermilk spray to control fungal diseases in plants.
9. Analyze sustainable farming practices through field visits to farms

Part: B. Sc. II (NEP 2020 - 2.0)
Name of the Course : OE-IV FRUIT PROCESSING AND MANAGEMENT
Semester: IV Credits: 02

After completion of this course learners will be able to;

1. Identify and understand the working principles of common fruit processing equipment such as pulpers, sealers, juice extractors, autoclaves, and corking machines.
2. Analyze different packaging methods and preservation techniques as well as cold storage methods.
3. Evaluate different drying methods, including sun drying, cabinet drying, and solar drying, for fruit preservation.
4. Examine the effect of growth regulators on fruit ripening in banana, mango, and grapes.
5. Prepare fruit juices with and without the addition of preservatives.
6. Demonstrate the processing of tomatoes into various products such as juice, puree, ketchup, sauces, soup, and chutney.
7. Prepare different types of pickles, jam, jelly, and marmalades using locally available fruits.