



Savitribai Phule Pune University

(Formerly University of Pune)

Two Year Degree Program in Botany

(Faculty of Science & Technology)

Revised Syllabi for

M.Sc. (Botany) Part-I

(For Colleges Affiliated to Savitribai Phule Pune University)

Choice Based Credit System Syllabus

To be implemented from Academic Year 2019-2020

Title of the Course: M.Sc. Botany

Preamble :

M Sc Botany program is designed with an objective to encourage and support the growing demands and challenging trends in the educational scenario. Our training focuses on the all-round development of the students to face the competitive World.

OBJECTIVES OF THE M SC BOTANY PROGRAMME:

1. Understand the scope and significance of the discipline.
2. Imbibe love and curiosity towards nature through the living plants.
3. In order to make students open-minded and curious, we try our best to enhance and develop a scientific attitude.
4. We make the students fit for the society by enabling them to work hard.
5. Make the students exposed to the diverse life forms.
6. Make them skilled in practical work, experiments, laboratory equipment and to interpret correctly on biological materials and data.
7. Develop interest in Biological research.
8. Encourage the students to do research in related disciplines.
9. Develop a thirst to preserve the natural resources and environment.
10. Develop the ability for the application of acquired knowledge in various fields of life so as to make our country self-sufficient
11. Appreciate and apply ethical principles to biological science research and studies

PROGRAM SPECIFIC OUTCOMES (PSO) OF MSc BOTANY:

Plant science is now an amalgamation of basic and applied science. Plants besides being the unique capability of plants to trap solar energy and provide food to all cannot be replicated by any system. Conventional studies like plant identification are now being supplemented with molecular techniques like DNA Barcoding. The courses have been designed to benefit all Botany students to study various aspects of plant science including its practical applications. Keeping in mind that these students can take up teaching at different levels, research work in research institutes and or industry, doctoral work,

(2 Credits- 30 Lectures)**Credit-I (Cr 1): Floriculture****15 Lectures**

1. Floriculture : Concept, definition, Scope and Importance of floriculture, global scenario of flowers, scope of floriculture in India 2L
2. Pre-requisites of commercial floriculture: soil and climate requirements, field preparation, systems of planting, water and nutrient management, weed management, rationing, training and pruning, pinching and disbudding, special horticultural practices, use of growth regulators, physiological disorders and remedies 3L
3. Harvesting and processing of flowers: harvesting indices, harvesting techniques, postharvest handling and grading, pre cooling, packing and storage, value addition, concrete and essential oil extraction, transportation and marketing, export potential, agri-export zones 5L
4. Commercial production of flowers: varietal wealth and diversity, climate, soil preparation, aftercare and manuring, pruning and training, harvesting, yield, important pests and diseases, control measures, harvesting, grading, packing and marketing , storage and transport, export potential of cut flowers: Chrysanthemum, Gerbera, Tuberose, Anthurium; Loose flowers- Scented Rose and Jasmine 5L

Credit II (Cr 1): Nursery Management**15 Lectures**

1. Introduction 1 L
2. Nursery Site: Types of Nurseries, Water, Location, Topography, Size of Nursery, Soil 2 L
3. Preparation of the Site: Clearing of surface, Removal of Top Soil, Erosion Control and Wind Damage, Surface Dressing, Shape, Fencing. 2 L
4. Design and Layout of Nursery: Administration Area, Operations Area, Production Areas, Germination Section, Transplanting Area. 2 L
5. Producing Plants from Seed: Seed Handling, Seed Procurement and Storage, Seed Dormancy and Pre-Treatment, Germination Process, Time of Sowing, Method of Sowing, Care of Seed Bed and Direct Sown Container, Transplanting the Young Seedlings, Light and Shade, Transplanting Natural Regeneration Seedlings, Tending the Seedlings, Watering, Germination Beds and Transplants, Weed Control. 4 L
6. Producing Plants Vegetatively: Cuttings, Air Layering, Grafting and Budding, Cleft or V Grafting, Shield or Inverted T-budding. 2 L
7. Growing Media: Growing Media for Propagation and Germination Beds, Growing Media for Transplant Beds, Growing Media for Container Seedlings, Organic Material, Compost, Mixing the Growing Media, Media Compaction in Pots, Mulching. 2 L

References:

1. Arora JS. 2006. Introductory Ornamental horticulture. Kalyani.
2. Bhattacharjee SK. 2006. Advances in Ornamental Horticulture. Vols. I-VI. Pointer Publ.