

T.Y.B.Sc. Botany [Semester - V]
Course Category –Minor Courses (MN)
Course Code – BOT-342-MN-T

Course Title: Nursery Management, Landscape Designing and Gardening
[No. of Credits: 2 C] [No. of Lectures: 30 L]

COURSE OBJECTIVES:

1. To understand the fundamental concepts, infrastructure requirements, and operational techniques of plant nurseries.
2. To gain practical knowledge of sexual and asexual plant propagation methods.
3. To learn the aesthetic and ecological principles of landscape designing.
4. To acquire skills in garden planning, execution, and maintenance.
5. To explore the entrepreneurial scope in commercial nursery and landscaping businesses.

COURSE OUTCOMES (COS):

CO 1: Proficiency in various plant propagation methods and technique.

CO 2: Design and manage nursery infrastructure.

CO 3: Apply aesthetic principles to landscapes.

CO 4: Categorize and select ornamental flora.

CO 5: Develop Technical Maintenance Skills.

CO 6: Formulate entrepreneurial strategies.

Sr. No.	Topic Details	No. of Lectures
	CREDIT I – Nursery Management	15 L
1.	Introduction and Infrastructure of Nursery 1.1 Definition, objectives, scope, and types of nurseries. 1.2 Site selection and layout for a nursery site - Allocation of space for different activities. 1.3 Importance and design of polyhouses, net houses, mist chambers, and cold frames. 1.4 Types of potting media - soil, coco peat, perlite, vermiculite, sphagnum moss 1.5 Sterilization of media 1.6 Types of containers required in nursery management	04
2.	Plant Propagation Techniques 2.1 Sexual Propagation: Seed viability, seed dormancy - types and breaking methods; seed treatment, and sowing techniques. 2.2 Vegetative/Asexual Propagation: Cuttings - root, stem, leaf; Layering - simple, air layering/gootee; Grafting - approach, veneer, cleft; and Budding - T-budding, patch budding. 2.3 Micropropagation: Brief introduction to commercial tissue culture applications in nurseries.	05
3.	Nursery Operations and Maintenance 3.1 Pruning, training, repotting, and hardening of plants.	04

	3.2 Irrigation and Nutrition: Types of irrigation – drip and sprinkler; water management; application of organic manures and inorganic fertilizers. 3.3 Common nursery pests, fungal, and bacterial diseases. 3.4 Integrated Pest Management (IPM) and safe use of agrochemicals.	
4.	Economics and Marketing 4.1 Management: Cost analysis, budgeting, and essential record-keeping in nursery business. 4.2 Marketing: Supply chain management, packaging of plants, marketing strategies, and exploring online retail platforms.	02
	CREDIT II: Landscape Designing and Gardening	15 L
5.	Introduction and Principles of Landscaping 5.1 Definition, scope, and objectives of landscape architecture. 5.2 Role of a botanist/horticulturist in landscaping. 5.3 Core Principles of landscaping: Unity; balance - symmetrical and asymmetrical; proportion; rhythm; focal point/accent; and harmony. 5.4 Colour Theory in landscaping.	04
6.	Elements of Landscape Design 6.1 Soft Elements: Trees - Avenue, Shade, Flowering; Shrubs; Climbers; Creepers; and Ground covers - Palms, Ferns, and Cacti/succulents. 6.2 Hard Elements: Paths, walkways, fences, pergolas, trellises, arches, and water features – fountains and ponds. 6.3 Lawn Management: Selection of grass species; Site preparation; Planting methods - Turfing, Dibbling, Sprigging; and maintenance - Mowing, Weeding, and Rolling.	05
7.	Types of Gardens and Special Gardening 7.1 Garden Styles: Features of Formal (e.g., Mughal, Persian), Informal (e.g., English, Japanese), and Free-style gardens. 7.2 Specialized Gardens: Terrace/Roof gardens, Vertical gardens (green walls), and Rock gardens. 7.3 Indoor Gardening: Selection of indoor plants, light and humidity requirements, Bonsai, Terrariums, and Kokedama.	04
8.	Execution and Maintenance 8.1 Irrigation required for landscaping. 8.2 Maintenance and management of landscape plants.	02

REFERENCES:

1. Bose, T. K., & Mukherjee, D. (1972). Gardening in India. Oxford & IBH Publishing Co.
2. Kumar, N. (1997). Introduction to Horticulture. Rajalakshmi Publications, Nagercoil.
3. Randhawa, G. S., & Mukhopadhyay, A. (1986). Floriculture in India. Allied Publishers.
4. Ray, P. K. (2012). Plant Nursery Management: How To Start And Operate A Plant Nursery. Scientific Publishers.
5. Trivedi, P. P. (1987). Home Gardening. ICAR, New Delhi.