OPEN ELECTIVE COURSES OFFERED BY THE DEPARTMENT

Open elective courses significantly improve horizontal mobility across disciplines. For students pursuing PG programmes from other disciplines, the Department of Botany offers an open elective course "Horticulture". Open elective courses are offered in the third semester of the programme with the goal of providing non-plant science students an understanding of the fundamentals of plant science and it is more related to the ornamental uses of plants.

Course Structure, Credit and Mark distribution, and Scheme of Examination

Semester	Course code	Corse Name	Credits	Marks		
				Internal	External	Total
3	BOT3E01	Horticulture	4	50	50	100

COURSE CODE: **BOT3E01**	NAME OF THE COURSE: **Horticulture (Theory)**	CREDITS: **4**

Course Objectives:		
The main objectives of this course are to: 1. To make the students aware of the importance of horticulture, its branches and landscaping. 2. To impart knowledge about the important gardens in the world and the types of gardens. 3. To inculcate knowledge about essential garden tools, implements and plant growing structures. 4. To attain knowledge about garden practices and the usage of fertilizers and soil conditioners. 5. To give an awareness to students regarding the common diseases and pests of garden plants.		
Expected Course Outcomes:		
On the successful completion of the course, student will be able to:		
1	Remember the scope, importance and branches of horticulture as well as the types of gardens.	**K1**
2	Understand about the cultural practices for management of insect pests of garden plants.	**K2**
3	Apply the knowledge of various plant propagation practices that can be used in day-to-day life.	**K3**
4	Analyze the uses of essential garden tools and implements as well as the plant growing structures.	**K4**
5	Evaluate the various pre-planting, planting and post-planting cultural practices as well as the usage of fertilizers, soil conditioners and ameliorants.	**K5**
6	Develop creative knowledge on indoor horticulture and commercial horticulture as well as landscaping.	**K6**
K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create		

Unit 1: 16 hrs

1. Concept, scope and importance of horticulture – as an art, science and business: branches of horticulture; classification of horticultural plants.
2. Famous gardens in the world and in India: types of gardens based on country of origin, Basic styles of gardens: formal, informal and wild gardens.
3. Botanical and ornamental gardens: butterfly garden, herbal garden, kitchen garden, rock garden, roof garden, sensory garden, vertical garden, water garden, container garden.

Unit 2: 16 hrs

4. Indoor horticulture and hydroponics: wicking, deep water culture (DWC), nutrient film technique (NFT), ebb and flow, aeroponics, and drip systems.
5. Commercial Horticulture: Nurseries, Orchards, Herb farm; Floriculture: Production of cut flowers; Floral decorations, indoor plants.

6. Arboriculture: Pruning, bracing, feeding and transplanting; Terrarium and Bonsai: Principles; Landscape horticulture, olericulture, pomology, viticulture, post-harvest technology.

Unit 3: 20 hrs
7. Developing the landscape**:** Plan (general), components and features of landscaping – plant components (lawn, shrubbery, flower beds and borders, rockery, carpet beds, topiary, hedges; non plant components (garden adornments, arches, pergolas, trellises, garden walls, gates, garden fences, footpaths, seats, tables, and garden houses).
8. Plant growing structures – Shade house, green house, poly house, glasshouse, mist chamber /mist beds, hot beds, lath houses.
9. Pre-planting, planting and post-planting cultural practices; Cultural practices to increase productivity: thinning, training, trimming and pruning; Plant propagation practices - Seed propagation and vegetative propagation - natural and artificial. Artificial methods of vegetative propagation: cuttage, layerage, graftage, budding, micropropagation.

Unit 4: 20 hrs
10. Essential garden tools and implements - Hand trowel, hoe, spade, fork, shovel, rake; different types of cutting tools – shears: long-handled, short-handled, lawn shears, secateurs, sickles, saw, wheel barrow, watering cans, lawn mower (electric and petrol mower), grass cutters, sprayers and procedure.
11. Fertilizers - Organic fertilizers: biofertilizers, compost, vermicompost, agricultural waste, livestock manure, municipal sludge; inorganic fertilizers: NPK fertilisers; natural and synthetic soil conditioners and soil ameliorants.
12. Common diseases and pests of garden plants, symptoms and causative agents; integrated pest management, physical and biological control, push-pull technology.

References

- Acquaah, G. 2015. Horticulture Principles and Practices, Pearson Education, Noida.
- Adams, C., Early, M., Brook, J. & Bamford K. 2015. Principles of Horticulture, Taylor & Francis Ltd, UK.
- Chadha, K. L. 2019. Handbook of Horticulture, Indian Council of Agricultural Research, New Delhi.
- Dixon, G. R. & Aldous, D. E. 2014. Horticulture: Plants For People And Places, Springer.
- Kathy F. 2015. Manual of Interior Plantscaping, Timber Press, Portland, Oregon.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

- https://au.f-interviews.com/6304-horticulture-mooc.html
- https://www.swayamprabha.gov.in/index.php/program/archive_he/18
- https://nptel.ac.in/courses/126105014
- https://nptel.ac.in/courses/126105009
- http://www.hillagric.ac.in/edu/coa/horticulture/lecture/Hort-351-Lectures/Hort-351-Lecture-1&2.pdf
- http://ecoursesonline.iasri.res.in/course/view.php?id=164