

HORTICULTURE

Course Code : HRT 101

Course Title : Introductory Horticulture

Credit Hours : 3(2+1)

Full Marks: 75

Theory: 50

Practical: 25

OBJECTIVES

Upon the completion of this course, the students will get basic knowledge and skills on general horticulture in Nepalese prospectives.

I. SYLLABUS

Meaning, branches and relation of horticulture with other discipline, classification of horticulture plants, status of horticulture development in Nepal, factors affecting horticulture crop production and measures to overcome them, general introduction to various types of horticulture enterprises, orchard establishment and management, basics of plant propagation and various methods, growth and development of horticultural plants, major classes of plant growth regulator and their use, basic principles and applications of training and pruning, basic principles of off- season and protected horticulture, organic horticulture crop production in Nepal, basic principles of high density planting, multi- storied cropping and multiple cropping with horticultural crops, indigenous horticulture plants in Nepal, principle of urban and periurban horticulture, verticulture, hydroponics and aeroponics and riverbed farming.

II. COURSE OUTLINE

A. Lecture

S.N.	Topic	No. of Lectures
1.	Meaning of horticulture, its branches and its relation with other disciplines	1
2.	Importance, scope, present status, national policy and plan for horticultural development in Nepal along with major constraints	1
3.	Classification of horticultural crops	2
	3.1 Botanical based classification of horticultural crops	
	3.2 Horticultural based classification of horticultural crops	
4.		2
	4.2 Agro-ecological zoning and niches from horticultural prospective	
	4.2 Economic significance of Agro ecological zoning of Nepal	
5.	Factors affecting horticultural crop production;	1
	5.1 Various environmental stress (moisture, temperature, light, flood and salt)	
	5.2 Measures to overcome them	
6.	General introduction to types of horticultural enterprises (Orcharding, nursery raising, ornamental gardening, vegetable farming and postharvest handling & preservation)	1

7.	Orchard establishment and management:	1
7.1	Site selection and layout of orchard	
7.2	Planting, soil and water management, wind break and shelter belts	
7.3	Manuring and fertilization, weed management, maintenance and care.	
8.	Basics of plant propagation	1
8.1	Introduction of plant propagation, sexual method	
8.2	Asexual method	
8.2.1	Cutting and layering	
8.2.2	Budding and grafting	
8.2.3	Specialized vegetative parts, micro and mist propagation	
9.	Growth and development:	
9.1	Concept of growth and development, dormancy	
9.2	Germination and juvenility	
9.3	Flowering, fruit set, fruit growth and development	
9.4	Maturity, unfruitfulness and fruit drops	
9.5	Ripening, tuber, rhizome and bulb development; senescence.	1
10.	Plant growth regulators	
10.1	Major classes of plant growth substances (auxin, gibberellins, cytokinins, ethylene and inhibitors) and their functions	
10.2	Commercial uses of PGR in Horticulture	1
11.	Training and pruning:	
11.1	Basic principles and objectives of training and pruning	
11.2	Various system/methods employed and their special application	1
12.	Basic principles and techniques of off season and protected horticulture and their prospects in Nepal	1
13.	Importance and prospects of organic horticulture crop production in Nepal	1
14.	Basic principles of high density planting, multi-storied cropping and multiple cropping with horticultural crops	1
15.	Importance and prospects of indigenous horticultural plants and their significance in nutritional and food security in Nepal	1
16.	Principles of urban and periurban horticulture; verticulture, hydroponics and aeroponics and river bed farming.	1
Total		30

B. Practical

S.N.	Topics	No. of Praticals
1.	Mapping of Nepal in terms of agro-climatic zones and depict regions for growing major horticultural crops	1
2.	Identification of seasonal fruits, vegetables, spices and ornamental plants	1
3.	Identification of horticultural tools and equipments; manures and fertilizers; hormones and micronutrients	1
4.	Orchard layout for different system of fruit planting	1
5.	Preparation of pit for planting fruit saplings	1
6.	Propagation practice in seasonal hort. plants: Cutting Layering Grafting Budding Seeding	5
7.	Training practice in seasonal hort. plants	1
8.	Pruning practice in different methods	1
9.	Preparation and application of Bordeaux formulation	1
10.	Project developed on horticultural enterprises	1
11.	Visit to Horticultural farm at local level.	1
Total		15

REFERENCES

Shrestha, G.K.; Shakya, S.M.; Baral, D.R. and Gautam, D.M. 2001 (IInd Edition) Fundamentals of Horticulture, Inst. Agri. & An. Sci, Rampur, Chitwan, Nepal.

Shrestha, G.K.; Shakya, S.M.; Baral, D.R.; and Gautam, D.M. 1993. Laboratory Manual on Fundamentals of Horticulture, IAAS, Rampur.

ICAR, 2002. Hand Book of Horticulture, Indian Council of Agric. Research, New Delhi.

Prasad, S. 1997. Agros. Dictionary of Horticulture Agro-Botany, Bikaner, UP, India.

Prasad, S. 1997. Principles of Horticulture, Agro-Botany, Bikaner, UP, India.