

DIPLOMA (AGRICULTURE) – SECOND SEMESTER

Second Semester			
S. No.	Name of Subject	Credits	Total Marks
1	Agronomical Principles and Crop Production Practices (Rabi Session)	4	100
2	Principles of Floriculture & Landscaping & Basic Ideas of Agroforestry	4	100
3	Indian Horticulture & Principles of Vegetable, Fruit Crops	4	100
4	Practical	4	100
5	Plantation Crops, Spices and Condiments	5	100
6	Introductory Plant Pathology	3	100
Total		24	

Subject Name: AGRONOMICAL PRINCIPLES & CROP PRODUCTION. (RABI)

1. Origin, geographical distribution, economic importance, soil and climate requirements , varieties ,cultural practices and yield of Rabi crops
2. Cereals; wheat, barley
3. Pulses; chickpea, lentil ,peas French bean
4. Oilseeds; rapeseed; and mustard, sunflower safflower and linseed
5. Sugar crops; sugarcane and sugar beet
6. Medicinal and aromatic crops such as mentha, lemon grass, citronella, Palma rosa , isabgol and other important species.
7. Commercial crops; potato and tobacco
8. Forage crops berseem, Lucerne and oat

Practical's

1. Study of tillage implements; Practice of ploughing; Practice of puddling; Study of seeding equipments
2. Seed bed preparation and sowing of wheat, sugarcane and cumin crops
3. Seed treatment of different rabi crops
4. Raising seedling beds
5. Top dressing of nitrogen in rabi crops and visit to fertilizer experiments
6. Identification of seeds and plants of rabi field crops
7. Study of yield contributing characters of wheat , chickpea and mustard
8. Working out quantity of required fertilizers from different sources for rabi crops

9. Judging of maturity symptoms of wheat, sugarcane and mustard
10. Visit/Preparation of crop cafeteria and record observations of rabi crops

Reference

- Scientific crop production: C. Thakur.
- Field Crops: Y. M. Iyer
- Medicinal plants: S.K. Jain.
- Text book of field crop production 2004, ICAR, New Delhi.

Subject Name: PRINCIPLES OF FLORICULTURE & LANDSCAPING & BASIC IDEAS OF AGROFORESTRY

1. Introduction to floriculture: Scope and prospects
2. Principles and practices for growing elite plants, cut flowers production of seeds, plant material, bulbs etc.
3. Factors affecting growing of floriculture plants
4. Role of growth regulator
5. Storage and marketing of cut flowers, seeds and bulbs
6. Concept of landscaping
7. Principles and designs of landscaping
8. Different types of gardens
9. Preparation of Bonsai
10. Flower arrangement : Western and Japanese
11. Application of Tissue culture technology in floriculture
12. Characteristics of agro-forestry – Classification, identification and economic importance
13. Characteristics of agro-forest produce – Classification, identification and economic importance

Practical's

1. Identification of different flowering plants
2. Identification of different ornamental plants
3. Study of propagation methods of flower crops
4. Lay out of ornamental garden
5. Planning and layout of lawns and its maintenance
6. Identification of important trees, seeds and seedlings:
7. Study of nursery techniques- Trench and mound plantation, pit plantation:
8. Study of different types of plantations:
9. Visit to agro-forestry and farm forestry plots

References

1. Mukhopadhyay, A. (1987) Floriculture in India. Lyal Book Depot. Ludhiana
Hand Book of Horticulture, ICAR publication

Subject Name: INDIAN HORTICULTURE & PRINCIPLES OF VEGETABLES, FRUIT CROPS

1. Basics concepts and Contribution of Horticulture in Indian economy
2. Principles of nursery Raising of Horticultural crops: Propagation and practices in seed sowing
3. Nursery management of selected Horticulture crops
4. Importance and Present status of fruit and vegetable industry
5. Classification of fruit and vegetables crops
6. Principles and Practices in cultivation for growing different vegetables and fruits
7. Post-harvest technology of fruits and vegetables crops

8. Economics of fruit and vegetable production
9. Principles and practices in protected cultivation of plants
10. Construction of poly house
11. Package of practices for cultivation of important commercial plants in poly house
12. Maintenance of poly house

Practical's:

1. Study of horticultural tools and different containers
2. Preparation of nursery beds and sowing
3. Study of plant propagation by cutting and layering .
4. Study of propagation by budding and grafting
5. Study of different types of media and their uses in horticulture
6. Preparation of different hormone solution
7. Identification of important vegetable seeds and plants
8. Study of raising vegetable nursery
9. Transplanting of vegetable seedling in main field
10. Identification of major and minor fruit crops.

References

1. Sharmugavellu, K. G. Production of vegetables crops
2. Niraj N.P, (2006) Basic concept of vegetable science, IBDC, Lucknow
3. Hand Book of Horticulture, ICAR publication

Subject Name: PRATICAL

1. Study of morphological characteristics of rabi crops
2. Identification of weeds in rabi season crops
3. Study of yield contributing characters of rabi season crops
4. Identification and study of important commercial varieties of the flowering crops.
5. Preparation of ground and beds for planting specific flower crops.
6. Top dressing (application of fertilizers for specific flower crops).
7. Identification of Ornamental plants.
8. Planning and layout of garden.
9. Identification of seeds and seedlings of multipurpose tree species
10. Nursery practices for poplar, Grewia optiva, Morus alba, Acacia catechu, Dalbergia sissoo, Robinia, Leucaena etc.
11. Visit to agro-forestry fields to study the compatibility of MPTS with agricultural crops: silvipastoral - Alley cropping - Horti-silviculture- Agro-silvipasture - Fuel and fodder blocks.

References

- Scientific crop production: C. Thakur.
- Field Crops: Y. M. Iyer
- Hand Book of Horticulture, ICAR publication
- Mukhopadhyay, A. (1987) Floriculture in India. Lyal Book Depot. Ludhiana

Subject Name: PLANTATION CROPS, SPICES AND CONDIMENTS

1. Introduction and importance, origin and distribution, classification, varieties, propagation, selection of planting material, climate, soil, planting details, and time of planting, after care,

manures and fertilizers of coconut, cashew nut, oilpalm, betelvine, coffee, cacao, arecanut, tea & rubber

2. And their intercropping, mixed cropping, flowering habits, fruit set, fruit drop, fruit development, maturity, harvesting, processing, grading, marketing, and pest management.
3. Origin, Importance, export potential, varieties, climate soil requirements, propagation and planting, cultural practices, pest management. Curing and processing practices of Turmeric, ginger, pepper, cinnamon, clove cardamom nutmeg, coriander and cumin.

Practical's:

1. Identification of varieties and descriptive bank for commercial coconut varieties.
2. Identification of varieties and description of cashewnut.
3. Varietal description of arecanut.
4. Selection of mother palm and seed nut for propagation in coconut.
5. Visit to commercial farms of plantation crops.
6. Study of growth and bearing habit in cacao.
7. Study of cultural practices for coconut plantations
8. Botanical description and identification of different spices, condiments and their varieties.
9. Propagation and planting methods in Turmeric and ginger.

References:

1. Spices and Plantation Shanmugavelu K G and Madhava Rao V N Crops 1977. Popular Book Depot, Madras
2. Cashew Nair M N Bhaslara Rap E V V Nambiar M N and Nambiar M C 1990. CPCRI Kasargod, Kerala.
3. Oil Palm Production Nair M K and Nampoothiri K V K 1996. Technology CPCRI Kasargod, Kerala.
4. Spices and Condiments Pruthi J S 1976. National Book Trust, New Delhi.

Subject Name: INTRODUCTORY PLANT PATHOLOGY

1. Introduction to plant pathology- definition & terms
2. General characters and classification of fungi- methods of reproduction
3. Key to divisions and subdivisions- with examples of fungi of plant pathological and other significance
4. General characters of bacteria- structure- reproduction and symptoms of bacterial diseases
5. General characters of virus- classification and symptoms of virus diseases- virus vector relationship
6. Phanerogamic parasites.
7. Epidemiology. Crop loss assessment and disease forecasting.

PRACTICAL

1. Plant Pathology laboratory and equipments.
2. Microscopes- identification of plant diseases
3. Symptoms of fungal- bacterial and viral diseases
4. Preservation of disease specimens
5. Slide preparation for microscopic examination
6. Preparation of culture media.
7. Isolation of fungi- microscopic observation of fungi belonging to different groups
8. Familiarization and use of fungicides and biocontrol agents

