

FACULTY OF LIFE SCIENCES

SYLLABUS

Of

Certificate course

In

Gardener cum Nursery Raiser

Session: 2023-24



The Heritage Institution

KANYA MAHA VIDYALAYA

JALANDHAR

(Autonomous)

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF NINE-MONTHS CERTIFICATE COURSE

Certificate course in Gardener cum Nursery Raiser Session: 2023-24

Course Code	Course Title	Hours/ Week L-T-P	Credit	Marks			Examination time (in Hours)
				Total	Ext.		
					L	P	
CGNM-1071	Gardener cum Nursery Raiser	4-0-8	1+1	100	50	50	3+3

Gardener cum Nursery Raiser

Course Code: CGNM-1071

Session: 2023-24

Course Outcomes

After completing this programme, participants will be able to:

CO1: Identify and use basic tools, equipment & materials: Effectively identify, select & use the specified tools and equipment relevant to gardening works.

CO2: Prepare root stocks: Preparing root stocks for grafting, budding.

CO3: Carry out daily nursery/garden chores & its maintenance: potting, repotting, soil bed preparation, planting, transplanting, irrigation, weed management, pest & disease management, nutrient management etc.

CO4: Propagation of plant materials: cutting, grafting, layering etc.

CO5: Layout and design the Garden component: Area Measurement and planning for the layout and design of garden: Proper Layout.

CO6: Maintain the Garden: identify and select the tools for Pruning, training, trimming and develop healthy Garden.

CO7: Become well versed with Environment Health & Safety: Well versed with health and safety measures in terms of personal safety and others as well.

Gardener cum Nursery Raiser

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Time: 3 hrs

Max Marks:50

Instructions for the Paper Setter

An objective type question paper will be set for assessment of the candidate with equal weightage from all the units of the syllabus.

UNIT I

Introduction: Scope & importance of Nursery and garden, objectives of a good nursery. Know about different types and phases of nurseries and their layout. Types of gardens, study the aesthetic value of garden, study the value in terms of money for gardening, study the planting materials for gardening. Understand the role of a gardener cum nursery raiser and the progression pathway.

Carry out Nursery Chores:

Identify different types of plants and seeds. Mother plant block maintenance and identification of crop varieties.

Undertake soil sterilization- sterilization structures.

Carry out timely sowing of seeds. Irrigating the nursery beds timely and appropriately. Carry out routine activities like weeding, hoeing, conditioning, thinning etc. Identifying the ready seedlings at right stage for transplant as per varying season.

Carry out application of growth regulators, nutrients and insecticides as per instructions during right season. Understand designing aspect of different structures in the nurseries like green house, poly house, shade house and assist in developing these structures. Learn in maintaining the sunlight and other condition in the green house and shade house. Monitor growth of plants in nurseries. Learn transplanting and shifting of big plants and trees. Gain knowledge about drip irrigation and assist in laying out the system.

UNIT II

Maintenance of Nursery:

Carry out routine nursery maintenance related activities. Monitor watering of plants and proper drainage system to prevent logging. Know about organic and inorganic pesticides and insecticides and timely spray to control infestation of insect, pests and diseases. Carry out waste water treatment in an adequate manner. Adhere to planting schedules, maintain inventory of number of plants, gardening tools and equipments.

Nursery Management and propagation of Plant Material: Identify appropriate garden crops as per soil & climatic conditions. Prepare nursery bed & seedlings. Transplant the seedlings, Maintain farm book keeping. Prepare the root stocks and practice propagation techniques. Understand the soil mixtures and seed beds. Understand the basic botany for garden crops. Gain knowledge about the Water, Media & Nutrition requirement for garden crops. Study the fertilizer requirement of garden crops. Practice pest & disease management of garden crops. Understand the irrigation methods /requirements of garden crops.

UNIT III

Plantation, Maintenance and Care of Garden: Understand the seasonal Gardening and Ground maintenance. Understand the different planting and Culture of Floral Display. Understand and perform the irrigation maintenance in the garden. Practice Pest and Disease management. Perform field operations like Maintain Lawn and Turf, Mowing, Fertilizing, Weeding, Irrigation, Aeration and Renovation. Gain knowledge about the different Plants and Culture of Trees, shrubs etc. Identify different fruit plants & ornamental plants.

UNIT-IV

Maintain Health and safety at the workplace: Maintain a clean & efficient workplace. Render appropriate emergency procedures .Practice first aid and general safety/ recommended safe practices. Undertake basic safety checks before operation of all machinery and vehicles and report all potential hazard to the supervisor.

Developing entrepreneurship skills:

Work out the feasibility & viability of setting up of micro-enterprises. Assess demand & supply of products/services in the market. Seek information regarding subsidies/loan available through govt. institutions. Avail loan from the financial institutions. Identify & develop appropriate marketing channels. Track prices prevailing in the market and formulate competitive pricing mechanism. Maintain book of accounts. Calculate B: C ratio. Comply with relevant regulations in marketing & sale of the produce. Deal effectively with all the stakeholders. Continuously improve & streamline the processes and look out for new opportunities.

Suggested reading:

1. Krishnan, P. R., Kalia, R. K., Tewari, J. C., & Roy, M. M. (2014). Plant nursery management: principles and practices. Central Arid Zone Research Institute, Jodhpur, 40.

2. Ray, P.K. (2012). Plant Nursery Management: How to Start and Operate a Plant Nursery. Scientific Publishers.
3. Hartmann, H.T., Kester D.E., Davis, F.T and R.L Geneve (2010) Propagation: Principles and practices (8th Edition)
4. Mason, J. (2004). Nursery management. Landlinks Press.
5. Sharma, R.R and Srivastav M (2004):Plant propagation and nursery management (First Edition) International Book Distributing Co.
6. Bose ,T.K.Sanyal, D and Sandhu, M.L.(1998) Propagation of Horticultural crops. Naya Prakash Publishers , Kolkatta .
7. K.K.Nanda and V.K. Kochhar (1985). Vegetative propagation of plants . Kalyani Publisher- New Delhi-Ludhiana .
8. <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=6979>

Gardener cum Nursery Raiser
Course Code: CGNM-1071
Practical

Time: 3 hrs

Max Marks:50

Note: The paper will be set on the spot by the examiner.

Suggested Laboratory Exercises:

1. To differentiate a healthy planting material (seed, bulb, seedling etc.) and a non-healthy planting material.
2. Identify different types of tools and equipment used in a nursery. Study the routine procedure of cleanliness of the nursery, plants, nursery structures and tool and equipments.
3. Selection of high quality seeds by observation or seed testing for viability.
4. Preparation of land/soil before sowing seeds and seedlings.
5. Identify different pests, insects and diseases. Study the ways to protect the seeds and seedlings after sowing from different insects, pests and diseases.
6. Maintaining the microclimate of the nursery by maintaining proper moisture by different means for healthy and proper growth.
7. Study different types and ways of packaging and transportation of seedlings.
8. Carry out activities like pinching, training, pruning, shaping etc. while propagating and growing plants.
9. Maintain cleanliness in nursery by sweeping trashes and pulling out dead plant parts etc.
10. Prepare pot mixtures, potting & repotting of plants.
11. Prune shrubs, hedge, edge & topiary. Collect soil samples for soil analysis.
12. Prepare Bordeaux mixture.
13. Prepare spray solution, handling sprayers & dusters.
14. **Project:** Establish the physical infrastructure like shade house, green house, mist chamber, irrigation system.
15. **Project:** Study different types of propagation techniques and propagate plants using these techniques.
16. **Project:** Study different types of vegetable seeds/flowering seeds
17. **Project:** Preparation of different types of seedbeds. Understand use of different pots, polybags, pro-tray in the nursery activities.

