

FACULTY OF LIFE SCIENCES

SYLLABUS

Of

Certificate course

In

Gardener cum Nursery Raiser

Session: 2022-23



The Heritage Institution

KANYA MAHA VIDYALAYA

JALANDHAR

(Autonomous)

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF CERTIFICATE COURSE

Certificate course in Gardener cum Nursery Raiser

Session: 2022-23

Sector	Sub-Sector	Occupation	QP Name	QP Code	NSQF Level	Category
Agriculture Skill Council of India	Agriculture Crop Production	Landscaping Gardening and Urban Farming	Gardener cum Nursery Raiser	AGR/Q0809	4	National Occupational Standards

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF NINE-MONTHS CERTIFICATE COURSE

Certificate course in Gardener cum Nursery Raiser

Session: 2022-23

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

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Program Specific Outcomes

After completing this programme, participants will be able to:

PSO1: Identify and use basic tools, equipment & materials: Effectively identify, select & use the specified tools and equipment relevant to gardening works.

PSO2: Prepare root stocks: Preparing root stocks for grafting, budding.

PSO3: Carry out daily nursery/garden chores & its maintenance: potting, repotting, soil bed preparation, planting, transplanting, irrigation, weed management, pest & disease management, nutrient management etc.

PSO4: Propagation of plant materials: cutting, grafting, layering etc.

PSO5: Layout and design the Garden component: Area Measurement and planning for the layout and design of garden: Proper Layout.

PSO6: Maintain the Garden: identify and select the tools for Pruning, training, trimming and develop healthy Garden.

PSO7: Become well versed with Environment Health & Safety: Well versed with health and safety measures in terms of personal safety and others as well.

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Time: Theory: 180.00 Hrs. Practical: 290.00 Hrs.	Max. Marks: 100 Theory: 50 Practical:50
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Instructions for the Paper Setter

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

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

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, learn to differentiate a healthy planting material (seed, bulb, seedling etc.) and a non-healthy planting material. Identify different types of tools and equipment used in a nursery. Select and use different tools and equipments for different nursery operations. Knowing the routine procedure of cleanliness of the nursery, plants, nursery structures and tool and equipments.

Selection of high quality seeds by observation or seed testing for viability. Preparation of land/soil before sowing seeds and seedlings. Preparation of different types of seedbeds. Understand use of different pots, polybags, pro-tray in the nursery activities. Select appropriate types and size of containers to develop different types of Plant seedlings. Undertake soil sterilization- sterilization structures.

Carry out timely sowing of seeds. Irrigating the nursery beds timely and appropriately. Identify different pests, insects and diseases. Learn the ways to protect the seeds and seedlings after sowing from different insects, pests and diseases. Maintaining the microclimate of the nursery by maintaining proper moisture by different means for healthy and proper growth. Carry out routine activities like weeding, hoeing, conditioning, thinning etc. Identifying the ready seedlings at right stage for transplant as per varying season. Learn different types and ways of packaging and transportation of seedlings. Learn different types of propagation techniques and propagate plants using these techniques.

Carry out application of growth regulators, nutrients and insecticides as per instructions during right season. Carry out activities like pinching, training, pruning, shaping etc. while propagating and growing plants. 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. Undertake grading, packaging and transportation of planting materials. Manage various nursery waste material/ disposal through composting.

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. Practice cutting, grafting, budding and layering techniques. Establish the physical infrastructure like shade house, green house, mist chamber, irrigation system. 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. Maintain cleanliness in nursery by sweeping trashes and pulling out dead plant parts etc.

UNIT III

Designing of Garden Components: Understand the features of Garden. Gain knowledge about the different types of Garden. Plan for the Design and Layout of Gardens-making gate, lawn, shrubbery, flower beds, borders, paths, hedges, edges, steps, statues, fountains, bird paths, streams, pools, waterfalls, rockery, arches, pergolas, hanging pots, bird paths (features of gardening) etc. Layout & prepare the lawn. Layout of orchard, plant fruit plants in the field. Understand the different components of garden. Implement the techniques to beautify the gardens.

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 Plant and Culture of Trees, shrubs etc. Identify different fruit plants & ornamental plants. Prepare pot mixtures, potting & repotting of plants. Prune shrubs, hedge, edge & topiary. Collect soil samples for soil analysis. Identify vegetable seed, garden tools & implements. Prepare Bordeaux mixture. Prepare spray solution, handling sprayers & dusters.

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. Identification and Use of all protective clothing and safety gears like safety belt, helmet, mask, goggles etc. while executing work like mowing the lawn, pruning trees, spraying insecticides and pesticides. Following the instructions as told

while using the tools and equipment. Read and understand the hazardous use and contamination mentioned on the labels of pesticides/ fumigants etc.

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/course/view.php?id=133>