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Multi Skill Curriculum NSQF L3-L4

Job Title

Multi Skill Technician (Gardening, Landscaping & Nursery Management)

Job Roles Covered

Gardener , Floriculturist, Landscape Designer, Nursery Management



Developed by

Rashtriya Madhyamik Shiksha Abhiyaan (Maharashtra)

Maharashtra State Board of Secondary & Higher Secondary Education

In Collaboration with

PSS Central Institute of Vocational Education (PSSCIVE) Bhopal



Course: Multi Skill Technician (Gardening, Landscaping & Nursery Management) - GNT

Job Role Covered- Gardener , Floriculturalist

NSQF-Multi skill Technician - Level- 3 - 11th Curriculum

Sr.no.	Unit Code	Unit Title	Qualification Pack	NOS	Duration
1	L3-MST-GNT- 1	Introduction to Gardening	AGR/Q0801 Gardener	1. AGR / N0803 Plantation, Maintenance and Care of Garden 2. AGR / N9903 Maintain health & Safety at the work place	90 hours
2	L3-MST-GNT- 2	Introduction to Landscaping	AGR/Q0801 Gardener	AGR / N0802 Designing of Garden Components	60 hours
3	L3-MST-GNT- 3	Introduction to Nursery Management	AGR/Q0801 Gardener	AGR / N0801 Nursery Management and Propagation of Plant Material	150 hours
4	L3-MST-GNT- 4	Entrepreneurship Development - I		No relevant NOS but worth including	Not a stand alone module. Part of each relevant unit.
					Total: 300 hours

This L4 modules covers Floriculture.

However, similar L4 modules based on QPs can be developed for Microirrigation Technician; Banana or Paddy farmer; Mango or Citrus Fruit grower; Sugarcane or Cotton or Soyabean cultivator depending on climate and geography. These will be separate job roles which can be chosen by the states and schools.

NSQF-Multi skill Technician - Level- 4 - 12th Curriculum

Sr.no.	Unit Code	Unit Title	Qualification Pack	NOS	Duration
5	L4-MST-GNT- 1	Introduction to Protected Cultivation	AGR/Q0702 Floriculturist – Protected Cultivation	1. AGR/N0705 -Cultivation Operations of Floriculture in Green House 2. AGR/N0703 -Harvest & Post Harvest Management in Floriculture	90 hours
6	L4-MST-GNT- 2	Preparation of Media and Container for Commercial Cultivation in Greenhouse	AGR/Q0702 Floriculturist – Protected Cultivation	Covered above	30 hours
7	L4-MST-GNT- 3	Protected Cultivation of Rose, Gerbera, Carnation, liliium, Orchids	AGR/Q0702 Floriculturist – Protected Cultivation	AGR/N0704 -Pre Cultivation Operations of Floriculture in Green House	90 hours
8	L4-MST-GNT- 4	Floriculturist - Open Cultivation	AGR/Q0701 Floriculturist Open Cultivation	1. AGR/N0701 Preparatory Cultivation of Flower Crops 2. AGR/N0702 Crop Cultivation in Flower Crops	90 hours
9	L4-MST-GNT- 5	Entrepreneurship Development		No relevant NOS but worth including	Not a stand alone module. Part of each relevant unit.
					Total: 300 hours

NSQF-Multi skill Technician Level- 3 CLASS - 11th Curriculum

Unit code	Title	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Learning Methodologies
L3-MST-GNT- 1	Methods of planting and cultivation	Demonstrate the knowledge of seasonal gardening and ground maintenance	Describe how to maintain lawn and turf, plant and culture trees, shrubs and plant covers	Demonstrate methods of planting and cultivation	Interactive lecture and practical on cultivation
	Tools and equipments used in gardening	Demonstrate the knowledge of use and maintenance of tools and equipments	Describe the various tools and equipments used in gardening - spade, axe, sheer, secateurs, lawn mower, sprayer, knives, etc.	Demonstrate the use of various tools and equipments - spade, axe, sheer, secateurs, lawn mower, sprayer, knives, etc.	Interactive lecture and practical on usage of tools
	Soil and Soil Management	Demonstrate knowledge of soil maintenance	Describe - principles of Soil Nutrient Management - various types of chemicals & fertilizers available	Maintain texture and structure , take care of Water and Water Movement , develop a plan for soil nutrient management and show steps to control Erosion	Interactive lecture on soil, chemicals and fertilizers. - Practical on soil texture - Visit to a fertilizer store
	Planting and Culture of Floral Display	Demonstrate the knowledge of floral display	Describe floral display methods & procedures	Plan and preparation of Bed - plant & culture of annuals, bulbs etc - recommend plant spacing - deheading of flowers as per the recommended procedures	Interactive lecture and practical on floral planting
	Training and Pruning	Demonstrate knowledge of training and pruning	Describe training & Pruning methods, their advantages & limitations	Able to prune and trim trees, shrubs, and hedges, using shears, pruners, or chain saw etc - use techniques to shape trees and shrubs as per the recommended procedures	Interactive lecture and practical demonstration of pruning
	Irrigation	Demonstrate knowledge of irrigation	Describe water requirements of different plants types, methods of irrigation, laying & maintenance of drip & sprinkler	Able to install drip and sprinkler system, Clean filters & drips for optimum flow, use watering appliances like Drip & Sprinklers, Water can, Seedling water can, bucket, Syring and Garden hose etc as per the need and procedure	Interactive lecture and practical on various types of irrigation. Practical on dip and sprinkler installation
	Pest and disease management	Demonstrate knowledge of pest and disease management	Describe integrated pest & Disease Management , types & effects of natural pesticides	Identify Pest and diseases - manage pest and diseases - use chemical & non-chemical methods of pest & disease control	Interactive lecture on pests and disease management
L3-MST-GNT- 2	Features of Gardens	Demonstrate the knowledge of Garden features	Describe basic landscaping and designs for the beautification of gardens like 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	design various components of garden like hedge, edge, shrubbery, pergolas, flower bed, lawn, etc. - use various components available in the garden area - measure area for layout of garden components - plan field design - maintain the plants according to design	Interactive lecture on garden features. - Visit a garden and measure various components - Practically design a garden
	Types of gardens	Demonstrate the knowledge of types of gardens	Describe types of gardens - Formal, informal, landscape, institutions, public gardens, parks, Hindu, Mughal, Japanese and English gardens etc	Identify various types of gardens	Interactive lecture
	Tools and equipment used in Landscaping	Demonstrate the knowledge of use and maintenance of tools and equipments	Describe the various tools and equipments used in Landscaping - spade, axe, sheer, secateurs, lawn mower, sprayer, knives, khurpie, and other heavy equipments etc.	Demonstrate the use of various tools and equipments - spade, axe, sheer, secateurs, lawn mower, sprayer, knives, khurpie, and other heavy equipments etc.	Interactive lecture and practical demonstration of various equipment

Unit code	Title	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Learning Methodologies
L3-MST-GNT-3	Introduction to Nursery Management	Demonstrate the knowledge of Nursery Management	Describe the different types of Nursery - Describe the components of a Nursery (seed belt, borders, shade, polyhouse/greenhouse, mist chamber, store etc.) - Describe the design and layout of different types of Nurseries - Describe the principals of establishing a nurseries - Describe the design elements of a Nursery (space, layout, soil etc.) - Describe the various plants grown in nurseries	Demonstrate the knowledge of various components of a Nursery - List the plants grown in nurseries - Identify common plants grown in nursery	Visit a nursery - Interactive lecture
	Assess site condition for Nursery	Demonstrate the knowledge of assessing the site for Nursery	Describe the process for assessment of site with respect to drainage requirement, environmental requirements, licence/permission requirements, excavation permission, etc.	Demonstrate the knowledge of assessment of site with respect to drainage requirement, environmental requirements, licence/permission requirements, excavation permission, etc.	Interactive lecture and practical observation of a nursery.
	Tools and equipment used in Nursery	Demonstrate the knowledge of use and maintenance of tools and equipments	Describe the various tools and equipments used in Nursery - spade, axe, sheer, secateurs, lawn mower, sprayer, knives, and other heavy equipments etc.	Demonstrate the use of various tools and equipments - spade, axe, sheer, secateurs, lawn mower, sprayer, knives, and other heavy equipments etc.	Interactive lecture and practical demonstration of various equipment
	Propagation of plants for Nursery	Demonstrate the knowledge of plant propagation	Describe the various methods of plant propagation (cutting, budding, grafting, layering, etc.)	Demonstrate the procedure for cutting, budding, grafting, layering, etc.	Interactive lecture and practical demonstration
	Establishment of a Nursery	Demonstrate the knowledge of establishing a Nursery	Describe the process of establishing a nursery - Describe the procedure for preparing soil medium and potting mixture	Demonstrate the knowledge of selecting a site for Nursery - Demonstrate the knowledge of selection of media for establishment of plants in nursery - Prepare soil mixture and potting mixture - Demonstrate seed sowing - Demonstrate routine hormone - Demonstrate handling of nursery plants - Demonstrate application of organic manure, fertilizers and pesticides	Interactive lecture and practical demonstration. - Construct a small nursery in school if space permits.
	Maintenance of a Nursery	Demonstration the knowledge of maintain a Nursery	Describe the procedures for maintaining a Nursery - thinning, cutting, trimming, shaping, replanting, etc. - Describe the procedure for application of water, fertilizers, pesticides etc. - Describe the procedure of weeding	Demonstrate the procedures for maintaining a Nursery - thinning, cutting, trimming, shaping, replanting, etc. - Demonstrate the procedure for application of water, fertilizers, pesticides etc. - Demonstrate the procedure of weeding	Interactive lecture and practical demonstration
L3-MST-GNT-4	Entrepreneurship Development - I	Demonstrate the knowledge of entrepreneurship and characteristics of entrepreneurs	Describe entrepreneurship, risks and rewards	Demonstrate the knowledge of entrepreneurship, risks and rewards Give examples of entrepreneurship	Interactive lecture on Entrepreneurship
		Demonstrate the knowledge of challenges facing small business	Describe challenges facing small businesses like Financing, Access to markets, Government policies, Inadequate managerial skills	Identify a small business and list its challenges and scope for improvement	Interactive lecture on Small businesses - Community Survey. Interview with nursery owner.
		Explain the factors that affect the development of entrepreneurship	Describe the factors that affect the development of entrepreneurial spirit in people	Identify an idea for an enterprise (nursery) and do research in the community	Calculate the costs and sales of a nursery in your area

NSQF- Multi skill Technician Level- 4 class 12th Curriculum

Unit code	Title	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Learning Methodologies
L4-MST-GNT-1	Introduction to Protected Cultivation	Demonstration the knowledge of Protected Cultivation	Describe the meaning of protected cultivation - Describe the advantage and disadvantages of protected cultivation - Describe the physical infrastructure required for protected cultivation : Shed house, polyhouse, greenhouse, micro irrigation system, fertigation system, etc. - Describe the materials required for setting up protected cultivation unit: soil mixtures, seed bed, transplant, seeds, fertilizers, organic manure, compost, etc. - Describe the plant materials required for protected cultivation- tissue culture plants, cuttings, grafted plants, stocks, etc. - Identify the plants grown in protected cultivation	Demonstrate the knowledge of various tools, equipments and materials used in protected cultivation - select the crops as per the green house design, location, climate, soil and water quality - select greenhouse design according to location and climatic conditions - Draw a layout for setting up protected cultivation unit - take soil sample as per standard procedures, take up pH test, take up EC test, amend soil as per need, perform mulching to the area of soil - perform seed treatment - prepare the land	Interactive lecture on protected cultivation. - Practical on soil testing, seed treatment and land preparation
L4-MST-GNT-2	Preparation of Media and Container for Commercial Cultivation in Greenhouse	Demonstration the knowledge of Media and Container for Commercial Cultivation in Greenhouse	Describe the difference types of media used for cultivation of plants - Describe the procedure for soilless cultivation - Describe the process of sterilization of soil using heat and chemicals - Describe the different types of containers used for growing crops in polyhouse/green house: plastic pots, clay pots, flats, trays, etc.	Differentiate between different types of media - Demonstrate the knowledge of soil sterilization using heat and chemicals	Interactive lecture and practical on containers
L4-MST-GNT-3	Protected Cultivation of Rose, Gerbera, Carnation, lillium, Orchids	Demonstrate the knowledge of manure/Fertilizer application , training/Pruning practices , irrigation/drainage , Prevent/Control Pest and Diseases for plants commonly grown under green house environment	Describe the plants cultivated in a green house environment/protected structures - Describe the optimum spacing for the following crops : rose, gerbera, carnation, lillum, orchids, banana, etc. - describe recommended dose of manure and fertilizers including foliar spray uprooting, transplanting and maintenance of plant spacing. - describe cutting, grafting and deshooting, trellis growing system - describe types of irrigation and drainage. - describe bio pesticides/micronutrient / growth promoters in Floriculture. - post harvest storage techniques.	Identify the plants grown under green house condition - apply training/pruning practices - irrigate and drain the field - take up appropriate Harvesting practices - take up post harvesting value addition (Grading, packing) - appropriate storage practices	Interactive lecture on floral cultivation. - Practically grow some of the flowers like Rose, Gerbera, Orchids etc
	Special Horticultural Practices in Protected Cultivation	Demonstrate the knowledge of practices adopted for maintenance of rose plants and roses	Describe the procedures adopted for maintaining rose plants and roses	Demonstrate bending, benching, disbudding, staking, etc.	Interactive lecture and practical.

Unit code	Title	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Learning Methodologies
L4-MST-GNT-4	Open Cultivation	Demonstrate the knowledge of Open cultivation	Describe the meaning of open cultivation - Describe the advantage and disadvantages of open cultivation - Describe how to choose the soil and water testing, Selection of right crop for cultivation, Land Preparation and Transplantation of seedling - Describe Manure/Fertilizer application, Training/Pruning practices, Irrigate/drainage, - Describe how to prevent/control Diseases, pests and insects	Demonstrate Manure/Fertilizer Application, Training/Pruning practices, rain water harvesting, micro Irrigation, Drainage, weeding, apply disease control	Interactive lecture and practical on cultivation
L4-MST-GNT-5	Entrepreneurship Development - II	Demonstrate the knowledge of entrepreneurship and characteristics of entrepreneurs	Describe entrepreneurship, risks and rewards	Demonstrate the knowledge of entrepreneurship, risks and rewards Give examples of entrepreneurship	Interactive lecture on entrepreneurship
	Project Proposal	Demonstrate the knowledge of making a project proposal	Describe steps used to make project proposal	Make a basic project proposal for a given entrepreneurship idea	Practical proposal making. Meeting local businessmen
	Project Execution	Implementation of project proposal	- Prepare a plan to implement the project proposal in real life - Mobilize resources for launch of the project - Launch and make the project proposal operational	Execute the proposed entrepreneurial idea	Analysis of the execution and identification of improvements