

Model Curriculum

Rooftop Gardener

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: AGRICULTURE CROP PRODUCTION
OCCUPATION: Landscaping, Gardening and Urban Farming
REF ID: AGR/Q0802, v1.0
NSQF LEVEL: 4



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

AGRICULTURE SKILL COUNCIL OF INDIA

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/Qualification Pack: **'Rooftop Gardener'** QP No. **'AGR/Qo8o2 NSQF Level 4'**

Date of Issuance: February 24th, 2018

Valid up to: March 31st, 2021

* Valid up to the next review date of the Qualification Pack



S. S. Anand
Authorised Signatory
(Agriculture Skill Council of India)

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Rooftop Gardener

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of an “Rooftop Gardener”, in the “Agriculture & Allied” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Rooftop Gardener		
Qualification Pack Name & Reference ID.	AGR/Q0802		
Version No.	1.0	Version Update Date	
Pre-requisites to Training	Class 8, preferably		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Identify plants: identify different types of trees, shrubs, hedges, edges, ground covers, flowering plants, annuals, biennials etc. • Design and execute a rooftop garden as per the instructions received. • Grow and maintain the condition of plants on a rooftop garden. • Use and maintain the gardening tools, containers and other equipments • Monitor the plants and identify and potential damage due to insect, pests and diseases and learn how to control them. • Practice health and safety at the work place: Well versed with health and safety measures in terms of personal as well as others' safety and introduction to harmful practices of designing and execution 		

This course encompasses 5 out of 5 National Occupational Standards (NOS) of “Rooftop Gardener” Qualification Pack issued by “Agriculture Skill Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 05:00 Practical Duration (hh:mm) 00:00	<ul style="list-style-type: none"> Understand general discipline in the class room (Do's & Don'ts) Understand the role of a Rooftop Gardener Familiarize with the scope and importance of gardening/ rooftop gardening Develop basic aesthetic sense of gardening 	Laptop, white board, marker, projector
2	Design Rooftop garden Theory Duration (hh:mm) 25:00 Practical Duration (hh:mm) 40:00 Corresponding NOS Code: AGR/N0804	<ul style="list-style-type: none"> Interpret and implement the common design principles used in designing the rooftop garden. Explain the different factors to be considered for the layout of the rooftop garden Make use of rooftop garden accessories and designer pots/containers as per the availability of space Demonstrate pot gardening or container gardening Identify ideal plants, shrubs, seasonal flowers, climbers etc. for rooftop gardening (apt root and shoot growth) Prepare appropriate soil mixture or growing medium for rooftop plants. Create proper drainage system. Select and use different tools and equipments for rooftop gardens Ensure adequate supply of nutrients to rooftop plants and lawn. Select appropriate insecticides and pesticides for rooftop insect pests and diseases and follow their correct management practices. 	Laptop, white board, marker, projector, samples of accessories, conduit pipes, drain boards, GC fabric, working drawings: irrigation layout, electric lines layout, concept drawing etc.
3	Grow and maintain the condition of plants Theory Duration (hh:mm) 40:00 Practical Duration (hh:mm) 75:00	<ul style="list-style-type: none"> Grow, propagate and ensure maintenance of the plants Undertake potting and repotting operations Undertake bonsai planting. Follow the standard procedures of timely training, pruning, removing the dead and old parts of the plants for their healthy growth and improved quality. Familiarize with different soil type and their nutritional content. Familiarize with different types of soil mixtures used for different purposes. 	Trowel, water can, seeds, seedlings, perforated, polybags, seedling trays, small shovel, secateurs, cutters, scissors, shears, cocopeat, sand, lawn mower, edge cutter, hand sprayer, vermicompost, neem cakes, nutrient additives, hose pipe, shower head

Sr. No.	Module	Key Learning Outcomes	Equipment Required
6	Code: AGR/N0807 Maintain cleanliness, safety and hygiene of the rooftop garden Theory Duration (hh:mm) 15:00 Practical Duration (hh:mm) 20:00 Corresponding NOS Code: AGR/N0808	<ul style="list-style-type: none"> Maintain a clean garden by removing dried leaves, dead and decayed debris, sweeping the garden and hoeing the beds. Ensure personal hygiene by use of gloves, masks, goggles and proper shoes. Render appropriate emergency procedures Practise first aid and general safety/ recommended safe practices. Undertake basic safety checks before operating any machinery Report potential hazards to the supervisor or the concerned authorities Identify and get acquainted with the 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. Follow the instructions as recommended while using the tools and equipments. Read and understand the hazardous use and contamination mentioned on the labels of pesticides/ fumigants etc. Conduct workplace checklist audits before and after work to ensure safety and hygiene. 	Garbage bags, gloves, broom, mask and safety goggles and long sprayer
	Total Duration: Theory Duration (hh:mm) 103:00 Practical Duration (hh:mm) 157:00	Unique Equipment Required: Laptop, white board, marker, projector, samples of accessories, conduit pipes, drain boards, GC fabric, working drawings: irrigation layout, electric lines layout, concept drawing, Trowel, water can, seeds, seedlings, perforated, poybags, seedling trays, small shovel, secateurs, cutters, scissors, shears, cocopeat, sand, lawn mover, edge cutter, hand sprayer, vermicompost, neem cakes, nutrient additives, hose pipe, shower head, Trowel, water can, shower head, seeds, seedlings, perforated, poybags, seedling trays, small shovel, secateurs, cutters, scissors, shears, cocopeat, sand, lawn mover, edge cutter, hand sprayer, hose pipe, Insecticides, Pesticides, fungicides, hand spray pump, knapsack sprayer, Garbage bags, gloves, broom, mask and safety goggles and long sprayer	

Grand Total Course Duration: **260 Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by [Agriculture Skill Council of India](#))

Trainer Prerequisites for Job role: “Rooftop Gardener” mapped to Qualification Pack: “AGR/Q0802, v1.0”

Sr. No.	Area	Details
1	Description	Trainer is responsible for educating the trainees – rooftop garden designs, maintenance and monitoring of rooftop plants and safety measures.
2	Personal Attributes	The individual should be able to demonstrate skills of designing, maintaining garden, use of various tools, communication skills, observation skills, practical oriented skills and decision making for instant problem solving. Trainer should be Subject Matter Expert.
3	Minimum Educational Qualifications	10+2
4a	Domain Certification	Certified for Job Role: “ <u>Rooftop Gardener</u> ” mapped to QP: “ <u>AGR/Q0802, v1.0</u> ”. Minimum accepted score is 80%.
4b	Platform Certification	Certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q0102”. Minimum accepted score is 80%
5	Experience	<ul style="list-style-type: none"> Graduate (Agriculture / Horticulture / Forestry/ Botany) with 6 months of relevant work experience Any other Graduate with 10+2 in Science with 2 years of relevant work experience Diploma (landscaping/Agriculture/Horticulture)[after 10+2] with 3 years of relevant work experience 10+2 with 4 years of relevant work experience

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Rooftop Gardener
Qualification Pack	AGR/Q0802, v1.0
Sector Skill Council	Agriculture Skill Council of India

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria.
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in aggregate.
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

Assessable outcomes	Assessment criteria for outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practical
1. AGR/N0804: Design rooftop garden	PC1. identify the plants that are ideal for rooftop gardening including bonsai plants/ trees (pest resistant varieties), based on the climate, soil available in the area and other conditions	100	10	2	8
	PC2. ensure the right soil and climatic conditions for the plants		10	2	8
	PC3. ensure that the nutritional requirements of the plants are met		10	2	8
	PC4. choose a layout for the roof garden based on available space and type of plants		10	2	8
	PC5. form a design plan for the roof garden considering factors like sun and wind exposure, waterproofing of the roof, drainage etc.		15	5	10
	PC6. interpret and implement the common design principles used in designing a rooftop garden		10	4	6
	PC7. ensure that the the practice of crop rotation can be followed and avoid planting the plants of the same family at the same site continuously		10	4	6
	PC8. incorporate the design techniques that are being used for similar gardens in other areas		10	4	6
	PC9. choose layout in such a way, so as to avoid over cramping of pots, and a suitable ratio of free space versus used space is maintained		15	5	10
		100	30	70	
2. AGR/N0805: Grow and maintain the condition of plants	PC1. undertake potting & repotting operations	100	4	1	3
	PC2. undertake bonsai planting		4	1	3
	PC3. grow the plants as per standard procedures		4	1	3
	PC4. check the condition of plants on a regular basis		4	1	3
	PC5. train & prune the plants as & when required		4	1	3
	PC6. remove dead/damaged parts from plants to improve quality		4	1	3

PC7. provide nutrition such as food and water to keep the plants in good condition	4	1	3
PC8. provide proper support for plants to grow properly	4	1	3
PC9. clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests	4	1	3
PC10. dispose waste materials as per SOP's	4	1	3
PC11. select the growing medium based on average rainfall, average temperature in the region and type of plants to be grown, which could be: a. soil b. peat based growing media c. chunk coir peat growing media d. compost	5	2	3
PC12. practice soil mixing techniques to prepare ideal soil mixtures for different plants	4	1	3
PC13. interpret the nature of different soil types and their nutritional content	4	1	3
PC14. use peat based growing media in order to achieve higher air porosity	5	2	3
PC15. in cases, where greater water retention is required, use compost as the growing medium	4	1	3
PC16. use wastes (organic and biodegradable waste), in pots/containers through composting for the growth of plants	5	2	3
PC17. practice the different irrigation techniques used for rooftop garden, like the drip irrigation method	4	1	3
PC18. ascertain the moisture requirements of the plants	4	2	2
PC19. minimize wastage of water used for irrigation	4	1	3
PC20. ascertain the nutrient requirements of the plants	4	1	3

	PC21. identify the ideal fertilizers to be used in the garden		4	2	2
	PC22. use organic fertilizers derived from animal matter and plant matter to improve aeration and water retention capacity		5	2	3
	PC23. ensure usage of bio fertilizers for integrated nutrient management		4	1	3
	PC24. practice the application of fertilizers in the right dose at right times		4	1	3
			100	30	70
3. AGR/N0806: Use and maintain gardening tools, containers and other equipments	PC1. identify different garden tools & equipments and their uses	100	9	3	6
	PC2. operate and utilize various light handtools used for gardening		9	3	6
	PC3. ensure that the tools used are cleaned and maintained in good condition		9	3	6
	PC4. operate small machinery, in case required. for eg. Chippers		9	3	6
	PC5. identify the ideal type of containers from the available options based on the requirements of the plants		9	3	6
	PC6. ensure that the containers are in proper condition without any damage		9	3	6
	PC7. ensure that along, with meeting the requirements, the containers also fulfil the aesthetic aspects of the garden		10	3	7
	PC8. install fences and miniature shelters in order to protect plants on site, form falling objects		9	2	7
	PC9. undertake small shade net cum polyhouse establishment for exotic vegetables etc.		9	3	6
	PC10. install micro sprinkler/drip system to ensure proper irrigation and maintenance of plants		9	2	7
	PC11. ensure proper drainage of excess water and there is no leakage		9	2	7
			100	30	70
4. AGR/N0807: Monitor the plants and identify any potential damage	PC1. ascertain the nature of plants and the diseases that commonly affect them	100	20	6	14
	PC2. locate any signs of infection or damage to the plants		20	6	14

	PC3. ensure that diseases that affect one plant do not spread to others in the garden		20	6	14
	PC4. undertake appropriate measures (such as insect traps) to prevent entry of pests (such as insects, mites) and rodents into the garden and causing any damage		20	6	14
	PC5. encourage or increase use of biological control measures for control of pests such as:				
	a. encourage growth of beneficial microorganisms				
	b. plant companion plants that discourage or divert pests				
	c. rotate crops to different locations year on year basis, to prevent development of pest reproduction cycles		20	6	14
			100	30	70
5. AGR/N0808: Maintain cleanliness, safety and hygiene of the rooftop garden	PC1. ensure cleanliness by sweeping off debris from the garden area	100	15	4	11
	PC2. clean dust and mud from the containers, tools and the surroundings of the garden to ensure aesthetic appeal of the garden		15	4	11
	PC3. fumigate and disinfect the garden area as a preventive measure		10	4	6
	PC4. comply with safety and hygiene procedures followed in the organisation		10	3	7
	PC5. ensure personal hygiene by use of gloves, hairnets, masks, ear plugs, goggles, shoes, etc.		10	3	7
	PC6. use safety equipment such as fire extinguisher, first aid kit and eye-wash station when required		10	3	7
	PC7. follow housekeeping practices by having designated area for materials/tools		10	3	7
	PC8. identify, document and report problems such as rodents and pests		10	3	7
	PC9. conduct workplace checklist				7

	audits before and after work to ensure safety and hygiene		10	3	
			100	30	70
GRAND TOTAL		500	500	150	350