



# Model Curriculum

**QP Name: Urban Forest Developer**

**QP Code: AGR/Q6106**

**Version: 2.0**

**NSQF Level: 4**

**Model Curriculum Version: 2.0**

Agriculture Skill Council of India || Agriculture Skill Council of India (ASCI), 6th Floor, GNG Tower, Plot No. 10, Sector - 44

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## Training Parameters

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Forestry, Environment and Renewable Energy Management
<b>Occupation</b>	Agro-Forestry Management
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/NIL
<b>Minimum Educational Qualification and Experience</b>	<p>Minimum Educational Qualification:            12th grade pass            OR            Completed 2nd year of 3-year diploma (after 10th) and pursuing regular diploma            OR            10th grade pass plus 2-year NTC            OR            10th grade pass plus 1-year NTC plus 1 year NAC            OR            8th pass plus 2-year NTC plus 1-Year NAC plus CITS            OR            10th grade pass and pursuing continuous schooling            OR            10th Grade Pass with 2-year relevant experience            OR            Previous relevant Qualification of NSQF Level 3.0 with minimum education as 8th Grade pass with 3- year relevant experience            OR            Previous relevant Qualification of NSQF Level 3.5 with 1.5- year relevant experience</p>
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	16 Years
<b>Last Reviewed On</b>	26/05/2022
<b>Next Review Date</b>	26/05/2025
<b>NSQC Approval Date</b>	26/05/2022
<b>QP Version</b>	3.0
<b>Model Curriculum Creation Date</b>	26/05/2022
<b>Model Curriculum Valid Up to Date</b>	26/05/2025
<b>Model Curriculum Version</b>	2.0

<b>Minimum Duration of the Course</b>	390 Hours
<b>Maximum Duration of the Course</b>	390 Hours

## Program Overview

This section summarizes the end objectives of the program along with its duration.

### Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Discuss the job role of an Urban Forest Developer.
- Explain various concepts of urban forest making.
- Explain various activities involved in making Urban forest.
- Discuss various methods including ancient methods of making urban forest making
- Describe the process of harvesting tea crop
- Explain the significance of forest itself and its impact on environment
- Explain factors to be considered in site selection
- Design the site map with required features
- Explain rules and regulation to be followed for making urban forest
- Explain business code of conduct
- Demonstrate survey of the field to procure various inputs for urban forest
- Demonstrate activities involved in preparation of soil
- Determine soil nutrition and measures to improve soil fertility
- Demonstrate activities from germination to transplantation
- Explain various factors to be considered in transplantation
- Demonstrate maintenance activities involved in Urban forest
- Demonstrate measures to make urban forest self-sustainable
- Demonstrate various cultural operation of urban forest
- Demonstrate basic repair and maintenance of forest tools and equipment
- Demonstrate preparation of manures by various methods
- Demonstrate preparation of organic/Natural manures
- Demonstrate preparation of checklist for various activities in forest making
- Explain concepts of urban forest making
- Estimate the costing of urban forest based on the checklist
- Explain various factors to be considered while making urban forest design
- Discuss how to adhere to personal hygiene practices.
- Demonstrate ways to ensure cleanliness around the workplace.
- Describe how to adhere to safety guidelines.
- Show how to administer appropriate emergency procedures

## Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>Bridge Module</b>	<b>05:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>05:00</b>
Module 1: Introduction to the role of an Urban Forest Developer	05:00	0:00	0:00	0:00	05:00
<b>AGR/N6129: Comprehend the basics concepts of making an urban forest NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>20:00</b>	<b>05:00</b>	<b>0:00</b>	<b>0:00</b>	<b>25:00</b>
Module 2: Understand basic concepts of making an urban forest	20:00	05:00	0:00	0:00	25:00
<b>AGR/N6130: Prepare for making a manmade urban forest</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>30:00</b>	<b>30:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 3: Standard Operating Procedure for Tea Manufacturing & Factory operations	30:00	30:00	0:00	0:00	60:00
<b>AGR/N6131: Follow relevant steps and process for making a manmade urban forest</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>30:00</b>	<b>60:00</b>	<b>0:00</b>	<b>0:00</b>	<b>90:00</b>
Module 4: Carryout steps and processes for making a manmade urban forest	30:00	60:00	0:00	0:00	90:00
<b>AGR/N6132: Maintain the urban forest to make it self sustaining</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>25:00</b>	<b>35:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 5: carryout activities to make urban forest self-sustaining	25:00	35:00	0:00	0:00	60:00

<b>AGR/N6133: Prepare natural manure and nutrients</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 6: Preparation of natural manure and nutrients	10:00	20:00	0:00	0:00	30:00
<b>AGR/N6128: Prepare Checklist for making and maintain an urban forest as per plan</b> <b>NOS Version- 1.0</b> <b>NSQF Level-4</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 7: preparation of checklist for making and maintaining an urban forest	15:00	15:00	0:00	0:00	30:00
<b>AGR/N9903: Maintain health and safety at the workplace</b> <b>NOS Version- 1.0</b> <b>NSQF Level-4</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 8: Hygiene and cleanliness	03:00	03:00	0:00	0:00	06:00
Module 9: Safety and emergency procedures	12:00	12:00	0:00	0:00	24:00
<b>DGT/VSQ/N0102</b> <b>Employability Skills</b> <b>NOS Version-1.0</b> <b>NSQF Level-4</b>	<b>60:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 10: Employability Skills	60:00	00:00	0:00	0:00	60:00
<b>Total Duration</b>	<b>210:00</b>	<b>180:00</b>	<b>0:00</b>	<b>0:00</b>	<b>390:00</b>

# Module Details

## Module 1: Introduction to the role of an Urban Forest Developer

### Bridge Module

#### Terminal Outcomes:

- Discuss the job role of an Urban Forest Developer

<b>Duration: 05:00</b>	<b>Duration: 0:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe the size and scope of the Forestry and its sub-sectors.</li> <li>• Discuss the role and responsibilities of an Urban Forest Developer</li> <li>• Identify various employment opportunities for an Urban Forest Developer</li> </ul>	
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 2: Understand basic concepts of making an urban forest

### Mapped to AGR/N6129 v1.0

#### Terminal Outcomes:

- Explain various concepts of urban forest making.
- Explain various activities involved in making Urban forest.
- Discuss various methods including ancient methods of making urban forest making
- Describe the process of harvesting tea crop
- Explain the significance of forest itself and its impact on environment

<b>Duration: 20:00</b>	<b>Duration: 05:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the meaning of forest, their constituents, types, benefits of forests- direct and indirect</li> <li>• Classify forests - High forests, coppice forests, virgin forest and second growth forests, pure and mixed forests etc.</li> <li>• Explain Elements of a Forest: Biotic and Abiotic,</li> <li>• Define Forest as per FAO</li> <li>• Discuss Agroforestry - farm forestry, social forestry, joint forest management - concepts, programmes and objectives</li> <li>• Describe Natural forest and the types, Characteristics and Layers of a Natural-Forest, interaction between their components, nurturing of forest and evolution of forest</li> <li>• Explain about self-sustenance, interdependent and self-reviving ecosystem of natural forest</li> <li>• Explain the concept of made Forest and various techniques of Manmade-Forests</li> <li>• Differentiate between (1) Manmade Forest Vs Natural Forest (2) Ancient and Modern Techniques of forest making (3) Agro-forestry Plantation and Forest-Making</li> <li>• Describe Panch-Tatva: Element of Forests- Earth, Air, Water, Sunlight</li> </ul>	<ul style="list-style-type: none"> <li>• Identify native and local trees of various Indian states and UTs</li> <li>• Demonstrate Ancient and Modern Techniques of forest making</li> <li>• Select different varieties of native, local and original trees of the area based on the local conditions to ensure bio-diversity</li> <li>• Demonstrate planting of the tree saplings in very close proximity preferably 2-3 trees in the 1 square meter to support each other in growing through exchange of food and nutrients</li> <li>• Create an eco-system where big trees should be complemented by small and auxiliary trees, shrubs or creepers</li> <li>• Demonstrate establishing urban forest in natural environment without/least human-interference</li> <li>• Examine the site for survey of research for potential natural vegetation</li> <li>• Select a community of variety of local trees for planting and collect a large number of various native seeds, locally or nearby in a comparable geo-climatic context</li> <li>• Demonstrate propagation of the seed in local area or germination in a local nursery</li> </ul>

<p>and Space</p> <ul style="list-style-type: none"> <li>• Explain Ancient Indian techniques of Forest-making-- Vedic-Van, Nakshatras-Van, Navagrahas-Van, Rashi-Van, Vrikshayurveda, Panchvati-forests</li> <li>• Explain Modern technique of Forest Making: Miyawaki, Its basic tenets, Its application, Limitations of Miyawaki</li> <li>• Discuss about five basic elements of the Forest being a micro-cosmos of the planet-earth</li> <li>• Explain about the interaction of the five basic-elements of forest and their effects</li> <li>• Explain about the inhabitants of forest as per modern environmental-science</li> <li>• Discuss about biotic and abiotic inhabitants of forest</li> <li>• Explain about niche of various species of plants and animals and their co-existence, co-operation and competition</li> <li>• Explain Global warming - forestry options for mitigation and adaptation - carbon sequestration</li> <li>• Explain the significance of natural vegetation in restoration of degraded land</li> <li>• Explain how Forests are self-sustaining eco-zones</li> <li>• Describe forest food-chain and Biodiversity of forest</li> <li>• Explain how Forests serve as a buffer in natural disasters like flood and rainfalls</li> <li>• Explain the benefits offered by forest such as watershed protection, prevent soil erosion and mitigate climate change</li> <li>• Explain General problems of forest development and economy.</li> <li>• Explain Forest based industries in the</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate preparing the soil cover if it is very degraded by adding local bio mass in the soil and Soil should have perforators and retainers</li> <li>• Show how to cover and protect the roots by mulching the soil cover with organic material</li> <li>• Demonstrate plantation of young seedlings with mature and robust root system</li> <li>• Examine the roots of the seedlings for any presence of symbiotic bacteria and fungi</li> <li>• Demonstrate the plantation of the seedlings in a randomly distributed manner in such as way at the edge if the natural forest</li> </ul>
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<p>developed and developing countries</p> <ul style="list-style-type: none"> <li>• Explain Urban forestry – definition and scope – uses of urban forests</li> <li>• Describe Management of urban Forest-Arbiculture and its importance in urban forestry</li> <li>• Explain various National and state level programmes on degraded lands/ wasteland development</li> <li>• Explain how the forests naturally originate – Primary succession and secondary succession</li> <li>• Enlist different native and local trees of various Indian states and UTs</li> <li>• Cite Reasons for deforestation in the world and their impact</li> <li>• Explain the terms reforestation and afforestation and their impact on surrounding environment</li> <li>• Describe about three distinct layers in any Natural-forest viz, Forest-canopy, Forest-floor and Forest-soil.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Seedling Tray, sacks, polythene, watering cans and equipment, plant labels, labellers, spade, khurpi</p>	

## Module 3: Preparatory activities for making a manmade urban forest

### Mapped to ARG/N0527 v1.0

#### Terminal Outcomes:

- Explain factors to be considered in site selection
- Design the site map with required features
- Explain rules and regulation to be followed for making urban forest
- Explain business code of conduct
- Demonstrate survey of the field to procure various inputs for urban forest

Duration: 30:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain Site pre-requisites for making the urban forest</li> <li>• Describe nursery activities viz. seed collection, seed pre-treatment-nursery stock preparation- field preparation- marking, alignment and stacking, pit making-planting etc.</li> <li>• Explain various tending operations- weeding, cleaning, singling, pruning, pollarding, lopping, and thinning- fertilization in trees-plant protection and sanitation measures etc.</li> <li>• Explain the business code of conduct to deal with client</li> <li>• Explain applicable record-keeping requirements in the job role</li> <li>• Explain relevant tools, implements and PPE required for setting up an urban forest</li> <li>• Discuss various parameters to assess before establishing an urban forest</li> <li>• Explain different types of manmade forest and their features</li> <li>• Discuss about plant/ tree/ shrub varieties suitable for an urban forest</li> <li>• Explain different types of materials required for setting up an urban forest</li> <li>• Explain the practice of plant rotation and shifting</li> <li>• Discuss storage requirements for various planting material</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate survey of contiguous and adjacent land for better understanding the site for the forest</li> <li>• Select a site place or location (viz. garbage-dump yards (after removing the non- biodegradable items), unused plots, land along the river flow, urban-plots, farmhouses factory-premises, schools, common land in villages, etc) for creating a mini-forest which comply with relevant applicable government legislation, standards, policies, and procedures</li> <li>• Select the site which is an open-land and have a good layer of soil, not susceptible to damage by stray cattle or debris, free from any pebbles, boulders, garbage or stones like rocks, nest or burrow of snakes, chemicals, pesticides or hazardous waste, currently agrarian practice is going on, underground sewerage drain or electricity or gas pipeline or any overhead electric-transmissions</li> <li>• Design a site map which should include the shape, direction, gradation and location of the site, closeness of planting zone from built structure to ensure that root structures or canopy do not damage the built structure in the future</li> <li>• Examine the site for accessibility to quality water, labour and other inputs, gradients of the site, If the land has an uneven-level, then fill the</li> </ul>

<ul style="list-style-type: none"> <li>• Discuss about basic accounting and inventory management</li> <li>• Explain Organization policies on: incentives, delivery standards, and personnel.</li> <li>• Explain Quality standards set by the organization.</li> <li>• Explain the requirements of stock with respect to season, climate etc., Resources and supply source planning and Quality, quantity, price, source and time of the stock</li> <li>• Explain about the contract and Contract management.</li> <li>• Explain the factors to be considered in survey of site for making urban forest</li> <li>• Explain about design/layout/map of the site with a specific plan including the day of plantation, average-cost, a pathway for human access, how to maintain and sustain the Mini- Forest, the shape, direction, gradation and location of site etc.</li> <li>• Discuss Various risks associated with the establishment of urban forest at the site and appropriate preventive measures</li> <li>• Discuss about various forest features and structures to be installed</li> <li>• Explain about rules and regulations of the govt, permissions for growing specific category of trees</li> <li>• Enlist various material required for setting up urban forest and estimate the cost for setting up an urban forest</li> <li>• Explain various source of bio wastes and its significance in forest making</li> <li>• Discuss about selection of appropriate sapling for transplanting from authorized and authentic sources based on the agroclimatic condition</li> <li>• Explain computation of labour requirement for various task/activities involved in forest</li> </ul>	<p>lower area with soil</p> <ul style="list-style-type: none"> <li>• Demonstrate fencing of the selected site from all sides so as to save the nascent saplings from stray-animals.</li> <li>• Examine the previous use history of the site and the flora and fauna of the selected area</li> <li>• Demonstrate the survey of the native trees which have been there in the area within the radius of 250kms</li> <li>• Demonstrate designing of the site with a specific plan including the day of plantation, average-cost, a pathway for human access, how to maintain and sustain the Mini-Forest etc.</li> <li>• identify the risks associated with the establishment of urban forest at the site and take appropriate preventive measures</li> <li>• Demonstrate the site survey to assess various parameters including the client requirements</li> <li>• Calculate and measure available space for the purpose of preparing a layout</li> <li>• Demonstrate preparation of layout based on the available space and client preferences conforming to applicable government regulation in that region to sustain proper density for making urban forest</li> <li>• Identify and select relevant plants, trees and shrubs, forest features and structures to be installed in the urban forest as per client's requirements</li> <li>• Demonstrate preparing the plan for placement of various plants and features suggested by client without disturbing the forest ecology</li> <li>• Demonstrate the procedure for obtaining the govt permissions for growing specific category of trees</li> <li>• Estimate the cost for various materials and operational cost for setting up an urban forest</li> </ul>
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<p>making</p> <ul style="list-style-type: none"> <li>• Explain relevant tools, equipment and Personal Protective Equipment (PPE) required for forest making</li> <li>• Discuss record keeping for various required resources</li> </ul>	<ul style="list-style-type: none"> <li>• Examine and identify the area where collection points may be set-up which is easily accessible and all the equipment's, tools, logistic required for procurement of bio waste are available</li> <li>• Demonstrate the preparation of road map to effectively get the task accomplished</li> <li>• Identify supplier and make negotiations with suppliers on right prices and required quality of Identify supplier and make negotiations with suppliers on right prices and required quality of bio-waste and place order</li> <li>• Demonstrate proper setup of collection points in different villages to collect the stock from various suppliers (farmers) and coordinate with different collection points</li> <li>• Demonstrate procurement of bio-waste at best possible price to w.r.t quality, quantity, time and location</li> <li>• Examine the quantity and quality of bio-waste to process the payments to suppliers</li> <li>• Demonstrate storage of the procured bio waste at appropriate place and correct manner to avoid wastage</li> <li>• Show how to manage the inventories that are procured efficiently and effectively</li> <li>• Show how to maintain appropriate temperature, humidity and controlled atmosphere during storage</li> <li>• Demonstrate the use of bio waste/biomass as manure in urban</li> <li>• Demonstrate the procurement of appropriate sapling/seed with 2 feet height free from diseases based on agroclimatic condition of selected sites from authorized source like nurseries belonging to the Forest Department or Agriculture universities/colleges</li> <li>• Demonstrate procurement of</li> </ul>
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	<p>saplings sprouted from the local available seeds with minimum of 25-30 varieties of native plants to attain bio-diversity</p> <ul style="list-style-type: none"> <li>• Select appropriate species of plant which suits best in out periphery of forest and in inner part which suits best to the wind direction on the selected site</li> <li>• Demonstrate the treatment of planting materials/seeds at the recommended temperature and humidity ensuring hygienic conditions in the storage area</li> <li>• Calculate the requirement of number of labour for the making urban forest and arrange for the same</li> <li>• identify a vendor to purchase the material required for setting up the forest such as planting material, fertilizers, pesticides/ insecticides, labour, etc.</li> <li>• calculate the material/ inputs required for planting and maintaining</li> <li>• Demonstrate the storage of the material as per the relevant storage, health and safety requirements</li> <li>• Demonstrate the usage of relevant tools, equipment and Personal Protective Equipment (PPE)</li> <li>• Show how to maintain the record of purchase</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>working drawings: irrigation layout, electric lines layout, concept drawing etc.</p>	

## Module 4: Carryout steps and processes for making a manmade urban forest

*Mapped to AGR/N6131 v1.0*

### Terminal Outcomes:

- Demonstrate activities involved in preparation of soil
- Determine soil nutrition and measures to improve soil fertility
- Demonstrate activities from germination to transplantation
- Explain various factors to be considered in transplantation

<b>Duration: 30:00</b>	<b>Duration: 60:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain silviculture its objectives and scope and modern silvicultural tools</li> <li>• Discuss selected site factors - climatic, edaphic, physiographic, biotic and their interactions</li> <li>• Explain about texture and nature of forest soils</li> <li>• Explain about various trees and their distinguishing features, growth and development</li> <li>• Explain different methods of propagating plants</li> <li>• Discuss about root growth- fine root/functional root production</li> <li>• Describe maintenance requirements of plantlets before transplanting</li> <li>• Enlist and explain about various ingredients used for preparing potting soil and their recommended quantity</li> <li>• Enlist ideal soil conditions for the healthy growth of plants</li> <li>• Explain the correct method of planting various types of plants, trees, shrubs and grass</li> <li>• Explain relevant treatments to improve nutrient levels in the soil</li> <li>• Discuss about water and temperature requirements of plants in the urban forest</li> <li>• Discuss about irrigation and drainage systems requirements in the urban</li> </ul>	<ul style="list-style-type: none"> <li>• create appropriate drainage channels in the field for the effective drainage of water</li> <li>• show how to coordinate with an authorised soil testing lab to determine suitability of the soil for urban forest establishment</li> <li>• Examine the selected site for availability of water, if not, arrange for the necessary water requirement</li> <li>• Evaluate the fertility, strength and nutritional value of the soil</li> <li>• Examine the soil for texture, its acidity, alkalinity to ascertain whether suitable for plantation or not</li> <li>• Examine the selected site inclination wrt water source and mark specific area for a small water pond</li> <li>• Demonstrate the preparation of soil for propagation by applying the necessary treatment</li> <li>• Demonstrate preparation of mixture of coir peat, vermiculite, compost, worm castings/ vermicompost and its application to the field</li> <li>• Show the correct way to rake the soil to break any lumps and aerate it</li> <li>• Demonstrate erosion and sediment control measures</li> <li>• Demonstrate soil and water protection practices</li> <li>• Demonstrate digging upper crust for</li> </ul>

<p>forest</p> <ul style="list-style-type: none"> <li>• Explain about relevant tools, implements, PPE and their correct use</li> <li>• Discuss when to carryout plantation</li> <li>• Explain the significance of growing a forest with the richness in biodiversity that it attracts</li> <li>• Explain the importance of weeding and effective techniques for carrying out same</li> <li>• Explain the importance of environmental and ecological best practices to minimise the impact on the environment</li> <li>• Discuss about relevant occupational and environmental hazards and appropriate ways of dealing with them</li> <li>• Explain benefits of resource optimization</li> <li>• Discuss ways of efficiently managing various materials used in the urban forest</li> <li>• Explain Direct and indirect benefits-biophysical interactions</li> <li>• Explain the term Carbon sequestration and the potential of carbon sequestration of forests</li> <li>• Explain about weather and climatic conditions required for making urban forest</li> <li>• Explain the process of soil testing</li> <li>• Discuss soil physical and chemical properties</li> <li>• Discuss about fertility, strength and nutritional value of the soil</li> <li>• Explain the term land reclamation and the measures for reclamation</li> <li>• Explain the importance of drainage channels in an urban forest</li> <li>• Explain the importance of organic manures and their recommended</li> </ul>	<p>2 feet using manual labour or earth augur, or JCB for big piece of land</p> <ul style="list-style-type: none"> <li>• Demonstrate the use of perforators like biomass, stubble, rise-husk etc., retainers, cow-dung or local biomass and maintain the ratio 1/5 of the soil</li> <li>• Demonstrate transplanting of planning materials using the relevant machinery and tools or manually as per the case, maintaining the recommended planting density for the selected planting materials to ensure its healthy growth as per planned layout dividing the Plants in four categories viz, Canopy trees, Trees, bushes, creepers and climbers</li> <li>• Demonstrate plantation in set of plant-group which should include 1 canopy-tree, 1 tree, 1 bush and 1 creeper.</li> <li>• Show how to cover the planted saplings with stubble up to 5 inches which will help in retaining water and moisture as well as help in checking the growth of grass and weeds.</li> <li>• Calculate the no of plants required to be planted taking in to account the total area of the site.</li> <li>• Demonstrate segregation of waste into different categories</li> <li>• Demonstrate waste disposal methods in an environmental friendly manner</li> <li>• Show how to recycle the recyclable waste appropriately</li> <li>• Demonstrate usage of electrical tools and equipment safely and its storage</li> <li>• Demonstrate application of water and fertilizers in the recommended quantity</li> <li>• Demonstrate application of pesticides/ insecticides to protect the plantlets from pests/ insects and diseases</li> <li>• Show how to set up appropriate irrigation and drainage systems in the urban forest</li> </ul>
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<p>dose</p> <ul style="list-style-type: none"> <li>• Explain the method of transplanting of sapling</li> <li>• Discuss pesticides/ fertilizer requirements and their dose</li> <li>• Explain the use of the relevant PPE during the operations</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate maintenance requirements to the guide</li> <li>• Demonstrate measures for protection from any health and safety hazards in and around the urban forest</li> <li>• Show how to support the plants with bamboo-sticks with cotton thread for each plant-sapling.</li> <li>• Examine the transplanted plantlets for any dead plantlets and replace with a new healthy and disease free sapling</li> <li>• Demonstrate weeding if there is grass or weed in urban forest</li> <li>• Demonstrate use of PPE during the operations</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Kassi / Spade, Khurpi, Weeder, Side shear, Broom, Rake, Watering Can, Hand hose, Bucket, Plant Pruner, Wheel Barrow, Hand Sprayer, Budding &amp; Grafting Set, Earthen Pots, Hedge Cutter, Polythene Bags (Garbage), Seed Packets, Gunny bags, Tags-labels, shears, loppers, sprayers, plant labels, waterpumps and equipment, watering timers etc.</p>	

## Module 5: carryout activities to make urban forest self-sustaining

### Mapped to AGR/N6132 v1.0

#### Terminal Outcomes:

- Demonstrate maintenance activities involved in Urban forest
- Demonstrate measures to make urban forest self-sustainable
- Demonstrate various cultural operation of urban forest
- Demonstrate basic repair and maintenance of forest tools and equipment

Duration: 25:00	Duration: 35:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain principles of forest management and Sustainable forest management-criteria and indicators</li> <li>• Discuss Modern tools in forest management</li> <li>• Explain Basics of Forest Mensuration</li> <li>• Explain the use of different types of hand/ power tools and equipment used in microforest operations</li> <li>• Explain how to carry out minor repair and maintenance of the microforest tools and equipment</li> <li>• Discuss about storage requirements of the relevant tools and equipment</li> <li>• Explain indicators of pest and disease infestation on plants/ trees/ shrubs</li> <li>• Explain about safe use of the recommended pesticides, insecticides and fertilizers</li> <li>• Explain the importance of pruning and training and different methods of training and pruning of plants/trees/shrubs</li> <li>• Explain different types of weeds and the process of their removal</li> <li>• Explain how to maintain optimum moisture and temperature in the microforest</li> <li>• Discuss about the practice of plant rotation and shifting</li> <li>• Explain different techniques to enhance microforest aesthetics</li> <li>• Explain the importance and</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect the mini-forest once in 15 days for minimum 1 year to check the growth of the saplings</li> <li>• Count the number of saplings that have survived, and record the data</li> <li>• Demonstrate preparation of record of observations for carrying maintenance</li> <li>• Demonstrate watering the urban plants/ trees/ shrubs with the recommended quantity of water</li> <li>• Demonstrate use of hose piper for watering in summer and winters as per the respective schedule</li> <li>• Demonstrate measures to maintain the prescribed level of moisture and soil temperature and drain out excess water from the urban forest appropriately</li> <li>• Demonstrate the application of recommended quantity of fertilizers and manure to the plants/ trees/ shrubs</li> <li>• Demonstrate pruning in case of overshadowed and has wild growth during the first 2 years and rake the urban forest to remove dead leaves and debris</li> <li>• Demonstrate removal of the weeds and wilted plants/ tree/ shrubs as per the Standard Operating Procedure</li> <li>• Demonstrate methods of plant rotation and shifting for the healthy growth of plants/ trees/ shrubs</li> </ul>

<p>appropriate ways of draining out water from an microforest</p> <ul style="list-style-type: none"> <li>• Explain different methods of recycling and disposing waste</li> <li>• Discuss common sources of pollution and ways to minimise it</li> <li>• Explain the purpose of urban forest management</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate spraying of natural fermented liquid like Jeevamrit twice a month if the forest is not growing in a proper way due to lack of nutrients</li> <li>• Demonstrate application of nature based fertilisers like neem-turmeric paste if there is issue of termite</li> <li>• Show how to maintain the record of fertilizers, pesticides and insecticides used in the urban forest</li> <li>• Show how to co-ordinate with an expert for any complex issues and maintenance activities required in urban forest</li> <li>• Examine the growth of forest like the height of the plants, colour of the leafs and increasing activities of the microorganism</li> <li>• Demonstrate measures to keep the forest off from any inorganic waste like plastic, paper, chemical or metal</li> <li>• Inspect the bamboo sticks supported to saplings for any damage till the time saplings attain good straight posture of a tree and an overall shape and growth of the forest.</li> <li>• Calculate the mortality rate of plant only after 3-4 months of planting</li> <li>• Demonstrate use of natural, organic and bio-degradable mulch like stubbles, leaf-residue etc.</li> <li>• Demonstrate measures to control stray animals</li> <li>• Demonstrate surveying of the forest resources</li> <li>• Set up administration for forest resource management</li> <li>• Demonstrate various methods of cutting viz clear cutting, selective cutting and shelter wood cutting</li> <li>• Demonstrate measures and arrangements for control of forest fire</li> <li>• Demonstrate reforestation and afforestation on the denuded area as</li> </ul>
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	<p>per the case to maintain eco-balance</p> <ul style="list-style-type: none"> <li>• select the trees according to local geographical conditions for afforestation and take care during initial growth of the trees.</li> <li>• Demonstrate erecting fence to protect the urban forest from unorganised grazing</li> <li>• Demonstrate measures to maintain cleanliness in the mico forest</li> <li>• examine various urban forest hand/ power tools and equipment for any wear and tear or damage</li> <li>• Demonstrate basic repair and maintenance of the tools and equipment</li> <li>• Demonstrate storage of the tools and equipment as per the manufacturer's instructions</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Kassi / Spade, Khurpi, Weeder, Side shear, Broom, Rake, Watering Can, Hand hose, Bucket, Plant Pruner, Wheel Barrow, Hand Sprayer, Budding &amp; Grafting Set, Earthen Pots, Hedge Cutter, Polythene Bags (Garbage), Seed Packets, Gunny bags, Tags-labels, Budding-tape, Sutli, Moss-grass, etc.</p>	

## Module 6: Preparation of natural manure and nutrients

### Mapped to AGR/N6133 v1.0

#### Terminal Outcomes:

- Demonstrate preparation of manures by various methods
- Demonstrate preparation of organic/Natural manures

<b>Duration: 10:00</b>	<b>Duration: 20:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the impact of not following the health, hygiene, safety and quality standards on consumers and the business</li> <li>• Explain the use of appropriate personal protective equipment suitable to the type of work</li> <li>• Discuss about Nutrients requirements in urban forest</li> <li>• Discuss the advantage and disadvantages of nature-based manure</li> <li>• Explain the Method of preparation of manure by pit composting / trench composting</li> <li>• Explain the Method of preparation of Natural cow-dung manure</li> <li>• Discuss different types of organic wastes and their uses</li> <li>• Explain the importance of maintaining correct proportion of substrates in a composting unit</li> <li>• Explain the length of time allowed for decomposition of organic wastes</li> <li>• Explain the Properties of Manure and nutrients composition in natural manure</li> <li>• Explain the importance of Manure as a Source of Crop Nutrients and Soil Amendment</li> </ul>	<ul style="list-style-type: none"> <li>• select the appropriate area for digging the pit/trench and demonstrate digging the pit/trench of appropriate size and width required for the composting considering the amount of organic matter to be added</li> <li>• Demonstrate chopping the compost materials finely by appropriate tools and equipment before being thrown in the hole so that exposed area for the compost materials can be maximized</li> <li>• Demonstrate adding organic materials to the compost pit and mix well the materials together with a shovel so that they decompose as evenly as possible</li> <li>• Demonstrate mixing carbon-rich materials (e.g. dried leaves) thoroughly with nitrogen rich materials (like vegetable scraps and fresh grass clippings)</li> <li>• Show how to Cover the hole with a board if compost pit is not full and more organic materials are required to be added and cover the compost with soil when it is full to the level with the surrounding soil</li> <li>• Show how to water the compost area with appropriately with garden hose or with suitable watering equipment Improve the underground compost decomposition</li> <li>• Inspect regularly the compost decomposition for harvesting to use in planting area</li> </ul>

	<ul style="list-style-type: none"> <li>• Demonstrate the process of Jeevamrut by adding appropriate quantity of water, local cow dung, cow urine, jiggery, pulses flour and soil in a barrel</li> <li>• Inspect the barrel regularly for proper fermentation for usage in the field</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Ingredients for the Manure preparation, Kassi / Spade, Khurpi, Weeder, Side shear, Broom, Rake, Watering Can, Hand hose, Bucket etc.</p>	

## Module 7: preparation of checklist for making and maintaining an urban forest

### Mapped to AGR/N6128 v1.0

- Demonstrate preparation of checklist for various activities in forest making
- Explain concepts of urban forest making
- Estimate the costing of urban forest based on the checklist
- Explain various factors to be considered while making urban forest design

<b>Duration: 15:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the importance of effective planning and execution of the roadmap so prepared</li> <li>• Explain the importance of Prioritizing tasks from the checklist as per their requirement resulting in efficient management</li> <li>• Explain the basics concepts of making an urban forest</li> <li>• Explain the Importance of co-ordination and sound communication for accurately conveying the deliverables</li> <li>• Explain Pre-requisites for site selection for urban forest</li> <li>• Explain how to develop layout for urban forest</li> <li>• Explain how to make urban forest and maintain and sustain it properly and make it self-sustaining</li> <li>• Explain about Natural manure and nutrients used in urban forest</li> <li>• Explain the steps and process of making a manmade urban forest</li> <li>• Discuss about risk management strategy in urban forest</li> <li>• Explain psychological, sociological, aesthetic economic, and environmental benefits of urban forest</li> <li>• Explain the Importance of Proper Tree Selection</li> <li>• Explain tree species recommended</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate preparation of checklist template which organizes items in a systematic manner and provides an overview of tasks that need to be accomplished</li> <li>• Demonstrate preparation of roadmap as to how the entire process of developing and establishing an urban forest would be conducted</li> <li>• Create a list of all the tools, technologies, and other resources, fertilizers, pesticides etc. to be used along with their price to keep a record of the same.</li> <li>• Identify and plan the available resources</li> <li>• Inspect the planned project regularly to make sure that project is 'in line' with the beliefs and the mission of the organization</li> <li>• Show how to set up an effective communication plan</li> <li>• estimate the cost for planting the forest and cost for fencing and cost of human resource</li> <li>• Demonstrate preparation of a risk management strategy</li> <li>• Inspect the documents to verify the legality of the selected land and is free of any disputes</li> <li>• Demonstrate the procedure to obtain permission for urban forest making has been taken from competent authority</li> <li>• Demonstrate measuring the area of the site and check the shape and direction of the site</li> <li>• Examine the site whether it is surrounded</li> </ul>

<p>for limited use for making urban forest</p> <ul style="list-style-type: none"> <li>• Discuss about permission required from competent authority for making urban forest</li> <li>• Discuss urban forest benefits</li> <li>• Explain the practices and methods for protecting and enhancing urban forest in a sustainable manner</li> <li>• Explain various formats of official letters for communication</li> <li>• Explain the procedure for reviewing the records to ensure they are up to date</li> <li>• Explain the importance of audit of the records</li> <li>• Explain the importance of verbal and non-verbal communication at the workplace.</li> <li>• Explain the effective methods of sharing and seeking information and feedback at the workplace.</li> <li>• Explain the procedure for completing work-related documentation.</li> <li>• Explain the importance of inclusion of all genders and People with Disability (PwD) at the workplace.</li> <li>• Explain gender concepts (gender as a social construct, gender sensitivity, gender equality etc.), issues and applicable legislation.</li> <li>• Explain ways in which a conducive working environment can be created for all genders and PwD.</li> <li>• Define the need for appropriate verbal and non-verbal communication while interacting with all genders and PwD.</li> <li>• Explain the applicable PwD related regulations.</li> <li>• Explain the procedure to report inappropriate behaviour e.g., harassment.</li> </ul>	<p>by agriculture land or have construction nearby etc. and surrounding neighbours do not have any issues</p> <ul style="list-style-type: none"> <li>• Inspect the use of the land for the last 10 years</li> <li>• Examine the site is free from electricity transformer/wires under or over the site, concrete structure, drainage pipe is undergoing, pebbles or industrial waste or chemicals waste or a dump-yard</li> <li>• Examine the site for availability of fence on all sides to protect the urban forest from grazing animals in nascent stage</li> <li>• Examine the site for availability of water, dry cow-dung, local biomass, stubble for mulching, any trees etc.</li> <li>• Identify appropriate water arrangement if not available for minimum 8-10 Months</li> <li>• Demonstrate establishing fence on all sides</li> <li>• Examine the physical and chemical properties of soil</li> <li>• Examine the feasibility of fruit trees as per the client's requirement</li> <li>• Inspect the site for any wild growth of shrubs on the site</li> <li>• Demonstrate removal of all the wild growth without removing the trees</li> <li>• Demonstrate loosening the soil by digging the land with excavator up to 2 feet</li> <li>• Demonstrate application of 1/3<sup>rd</sup> of cow dung or biomass in the form of retainers/perforators</li> <li>• Show how to Spread the dug soil but let it loose so as roots can easily penetrate</li> <li>• Demonstrate the procurement of plants preferably from Forests-nursery.</li> <li>• Create a list of Make a list of all local flora and group the plants in a set of 5 Canopy, small-tree, climbers, creepers and shrubs</li> <li>• Demonstrate handling of plants while removing plastic cover before transplantation</li> <li>• Demonstrate supporting the plant with a stick and cotton thread</li> </ul>
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	<ul style="list-style-type: none"> <li>• Demonstrate making holes for planting with the help of earth-auger on manually after deciding on date and time of planting</li> <li>• Show how to water the holes/pits a day before</li> <li>• Demonstrate Planting the big tree in the centre surrounded by small trees and shrubs</li> <li>• Demonstrate watering as per recommended schedules and adding mulch over the soil in the newly created forest</li> <li>• Demonstrate weeding after 30 days as per the schedule</li> <li>• Demonstrate measures to protect the leaves or twigs in the forest from plucking</li> <li>• identify dying sapling and give the required organic nutrients and replace if dead with a new plant immediately</li> <li>• Demonstrate spraying of organic pesticides in case of termite</li> <li>• Inspect the forest for any human interference or wild animals</li> <li>• identify and remove the plastic waste</li> <li>• show how to make the forest grow as naturally as possible</li> <li>• inspect the fence regularly for any damages and repair immediately in case of any damages</li> <li>• demonstrate mulching of roots of each sapling and also whole forest if possible with the available local biomass</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>NA</p>	

## Module 8: Hygiene and cleanliness

### Mapped to NOS AGR/N9903 v3.0

#### Terminal Outcomes:

- Discuss how to adhere to personal hygiene practices.
- Demonstrate ways to ensure cleanliness around the workplace.

<b>Duration: 03:00</b>	<b>Duration: 03:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the requirements of personal health, hygiene and fitness at work.</li> <li>• Describe common health-related guidelines laid down by the organizations/ Government at the workplace.</li> <li>• Explain the importance of good housekeeping at the workplace.</li> <li>• Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate personal hygiene practices to be followed at the workplace.</li> <li>• Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs.</li> <li>• Demonstrate the steps to follow to put on and take off a mask safely.</li> <li>• Show how to sanitize and disinfect one's work area regularly.</li> <li>• Demonstrate adherence to the workplace sanitization norms.</li> <li>• Show how to ensure the cleanliness of the work area.</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

## Module 9: Safety and emergency procedures

### Mapped to NOS AGR/N9903 v3.0

#### Terminal Outcomes:

- Describe how to adhere to safety guidelines.
- Show how to administer appropriate emergency procedures.

<b>Duration: 12:00</b>	<b>Duration: 12:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• List the Personal Protective Equipment (PPE) required at the workplace.</li> <li>• Describe the commonly reported hazards at the workplace.</li> <li>• Describe the hazards caused due to chemicals/ pesticides/ fumigants.</li> <li>• Describe the basic safety checks to be done before the operation of any equipment/ machinery.</li> <li>• Describe the common first aid procedures to be followed in case of emergencies.</li> <li>• Explain the emergency measured in workplace during any farm operation</li> <li>• State measures that can be taken to prevent accidents and damage s at the workplace.</li> <li>• Explain the importance of reporting details of first aid administered, to the reporting officer/ doctor, in accordance with workplace procedures.</li> <li>• State common health and safety guidelines to be followed at the workplace.</li> </ul>	<ul style="list-style-type: none"> <li>• Check various areas of the workplace for leakages, water-logging, pests, fire, etc.</li> <li>• Demonstrate how to safely use the PPE and implements it as applicable to the workplace.</li> <li>• Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc.</li> <li>• Sanitize the tools, equipment and machinery properly.</li> <li>• Demonstrate the safe disposal of waste.</li> <li>• Demonstrate basic safety checks before use of tools and equipment</li> <li>• Demonstrate procedures for dealing with accidents, fires and emergencies.</li> <li>• Demonstrate emergency procedures to the given workplace requirements.</li> <li>• Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements.</li> <li>• Demonstrate the administration of first aid.</li> <li>• Prepare a list of relevant hotline/ emergency numbers.</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, First Aid Kit, Equipment used in Medical Emergencies.	

## Module 10: Employability Skills (60 hours)

Mapped to NOS DGT/VSQ/N0102 v1.0

**Duration: 60:00**

### Key Learning Outcomes

#### Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

#### Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

#### Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

#### Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

#### Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

#### Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

#### Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

#### Financial and Legal Literacy Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

#### **Essential Digital Skills Duration: 10 Hours**

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

#### **Entrepreneurship Duration: 7 Hours**

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

#### **Customer Service Duration: 5 Hours**

30. Describe the significance of analysing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

#### **Getting Ready for apprenticeship & Jobs Duration: 8 Hours**

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Diploma	Agriculture/Horticulture and related streams	3	Urban forest & Miyawaki forest making/urban planning and other related fields			
Graduate	Graduate in any stream except Agriculture/ Botany/ Horticulture /Forestry and related streams	3	Urban forest & Miyawaki forest making/urban planning and other related fields			For the school Program minimum qualification of the Trainer should be Graduate (Agriculture / Horticulture / Botany/ Forestry) with minimum 3 years Teaching experience (will be considered industry experience)
B.Sc.	Agriculture/ Botany/ Horticulture/Forestry and related streams	1	Urban forest & Miyawaki forest making/urban planning and other related fields			
M.Sc.	Agriculture/ Botany/ Horticulture and related streams	0.5	Urban forest & Miyawaki forest making/urban planning and other related fields	0		

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role “Urban Forest Developer”, mapped to QP: “AGR/Q6106, v2.0”, Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: “Trainer (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v2.0”. The minimum accepted score as per MEPSC guidelines is 80%.

## Assessor Requirements

### Assessor Prerequisites – Urban Forest Developer

Minimum Educational Qualification	Specialization	Relevant Industry Experience		Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduation	Agroforestry & Silviculture / Environmental Science/Forestry/urban planning/Climate change & sustainability/Landscape architecture-design & planning/urban community forest management/Ecology / Civil Engineering/Urban & town Planning and other related streams	5	Urban forest & Miyawaki forest making/urban planning and other related fields	0		Practical skills and knowledge required in Urban forest & Miyawaki forest making
Post-graduation	Civil Engineering/Urban & town Planning /Agroforestry & Silviculture / Environmental Science/Forestry/urban planning/Climate change & sustainability/Landscape architecture-design & planning/urban community forest management/Ecology and related streams	2	Urban forest & Miyawaki forest making/urban planning and other related fields	0		Practical skills and knowledge required in Urban forest & Miyawaki forest making
PhD	Agroforestry & Silviculture / Environmental Science/Forestry/urban planning/Climate change & sustainability/Landscape architecture-design & planning/urban community forest management/Ecology and related streams	1	Urban forest & Miyawaki forest making/urban planning and other related fields	0		Practical skills and knowledge required in Urban forest & Miyawaki forest making

### Assessor Certification

Domain Certification	Platform Certification
Certified for Job Role “ <b>Urban Forest Developer</b> ”, mapped to QP: “AGR/Q6106, v2.0”, Minimum accepted score is 80%	Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.

## Assessment Strategy

### Assessment System Overview

In Agriculture Sector it is of ultimate importance that individuals dealing with crop production or livestock have the requisite knowledge and competencies to undertake the task. Based on the Assessment Criteria, SSC in association with empaneled AAs, define the test structure for the given job roles to cover the required skills and competencies. Assessment strategy consists of the following:

1. Multiple Choice Questions: To assess basic knowledge (Objective/Subjective)
2. Viva: To assess awareness on processes (Oral and/or written questioning)
3. Practical: To evaluate skills and identify competencies. (Observation)

Assessments for knowledge and awareness on processes may be conducted through 'real-time' internet-based evaluation or by conducting the same 'offline' through TABs. Skills and competencies are to be assessed by conducting 'practical' on the ground through qualified and ToA certified assessors.

An individual must have adequate knowledge and skills to perform a specific task, weightage for different aspects of the assessment is given as follows:

- Multiple Choice Questions: 20%-30%, depending on the specific QP
- Viva: 20%
- Practical: 50% - 60% (Involves demonstrations of applications and presentations of procedures/tasks and other components)
- Assessment will be carried out by certified assessors through empaneled assessment partners. Based on the results of the assessment; ASCI will certify the learners/candidates

### Testing Environment

Assessments are conducted on laptops, Mobiles and android tablets via both offline and online mode depending on the internet connectivity at the assessment location.

In remote locations/villages, assessments get delivered through tablets without the requirement of the Internet.

- Multilingual assessments (ASCI is conducting the assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback are stored digitally on the cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle- screen/copy-paste disabled, etc.
- Android-based monitoring system
- End to end process from allocation of a batch to final result upload, there is no manual intervention

- Assessment will normally be fixed for a day after the end date of the training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- The room where assessment is conducted will be set with proper seating arrangements with enough space to curb copying or other unethical activities
- Question bank of theory and practice will be prepared by ASCI /assessment agency and approved ASCI. Only from approved Question Bank assessment agency will prepare the question paper. Theory testing will include multiple-choice questions, pictorial questions, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on the same day. In case of a greater number of candidates, the number of assessors and venue facilitation be increased and facilitated

<b>Assessment</b>			
<b>Assessment Type</b>	<b>Formative or Summative</b>	<b>Strategies</b>	<b>Examples</b>
Theory	Summative	MCQ/Written exam	Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions
Practical	Summative	Structured tasks/Demonstration	Practical application /Demonstration /Application tasks
Viva	Summative	Questioning and Probing	Mock interviews on the usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling the job situation

The question paper is pre-loaded in the computer /Tablet and it will be in the language as requested by the training partner.

## Assessment Quality Assurance framework

### Assessment Framework and Design:

Based on the Assessment Criteria, SSC in association with AAs will define the test structure for the given roles to cover the required skills and competencies. ASCI offer a bouquet of tools for multi-dimensional evaluation of candidates covering language, cognitive skills, behavioural traits and domain knowledge.

**Theoretical Knowledge** - Item constructs and types are determined by a theoretical understanding of the testing objectives and published research about the item types and constructs that have shown statistical validity towards measuring the construct. Test item types that have been reported to be coachable are not included. Based on these, items are developed by domain experts. They are provided with comprehensive guidelines of the testing objectives of each question and other quality measures.

**Type** – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation-based questions.

**Practical Skills** - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

**Type** – Standardized rubrics for evaluation against a set of tasks in a demo/practical task

**Viva Voce** - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

**Type** – Procedural questions, dos and don'ts, subjective questions to check the understanding of practical tasks.

The assessor has to go through an orientation program organized by the Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. The assessor shall be given a NOS and PC level overview of each QP as applicable. The overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework that will maintain the standardization of the marking scheme.

### Type of Evidence and Evidence Gathering Protocol:

During the assessment the evidence collected by AAs and ASCI are:

- GeoTagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
  - Signed Attendance sheet
  - Assessor feedback sheet
  - Candidate feedback sheet

- Assessment checklist for assessor
  - Candidate Aadhar/ID card verification
  - Pictures of the classroom, labs to check the availability of adequate equipment's and tools to conduct the training and assessment
  - Pictures and videos of Assessment, training feedback and infrastructure.
- Apart from the Assessor, a Technical assistant is popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
  - To validate their work on the day of the assessment, regular calls and video calls are done.
  - On-boarding and training of the assessor and proctor are done on a timely basis to ensure that the quality of the assessment should be maintained.
  - Training covers the understanding of QP, NSQF level, NOS and assessment structure

### **Methods of Validation**

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical SPOC event status. Assessor/Technical SPOC are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical SPOC/assessor so as to keep a check on assessment quality and ensure assessment is carried out in a fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.
- TP Calling: To keep a check on malpractices, an independent audit team calls the TP on a recorded line to take confirmation if there was any malpractice activity observed in the assessment on part of the AA/SSC team. If calls are not connected, an email is sent to TP SPOC for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on a real-time basis and highlights any issue such as students sitting idle/ trainer helping the candidates during the assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and conduct a surprise audit for the assessment carried out by the ground team.
- Geo Tagging: On the day of the assessment, each technical SPOC is required to login into our internal app which is Geotagged. Any deviation with the centre address needs to be highlighted to the assessment team on a real-time basis.

### **Method for assessment documentation, archiving, and Access:**

- ASCI have a fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks form the basis of the results and encrypted files generated to avoid data manipulation. All responses were captured and stored in the System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can

be generated.

- Maker Checker concept: One person prepares the results and another audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All softcopies of documents are received from the on-ground tech team over email. The same is downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have two job role-specific folders. These specific folders have Year wise and Month wise folders where all documents are saved in Batch specific folders. All Hard copies are filed and stored in the storeroom.

#### **Result Review & Recheck Mechanism –**

- Time-stamped assessment logs
- Answer/Endorsement sheets for each candidate
- Attendance Sheet
- Feedback Forms: Assessor feedback form, Candidate feedback form, TP feedback form
- The results for each of the candidates shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)

# References

## Glossary

Term	Description
<b>Declarative Knowledge</b>	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
<b>Key Learning Outcome</b>	The key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on-site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on-site
<b>Procedural Knowledge</b>	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work or produce a tangible work output by applying cognitive, affective or psychomotor skills.
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
<b>Terminal Outcome</b>	The terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

## Acronyms and Abbreviations

Term	Description
<b>AGR</b>	Agriculture
<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training
<b>DF</b>	Dense Forest
<b>PA</b>	Protected Areas
<b>NTFP</b>	Non-Timber Forest Produce
<b>MFFCM</b>	Modern Forest fire Control Methods
<b>JFM</b>	Joint Forest Management
<b>FSI</b>	Forest Survey of India
<b>FRI</b>	Forest Research Institute
<b>FFCM</b>	Forest Fire Control & Management
<b>CS</b>	Conservation & Survey
<b>CNFA</b>	Cultivable Non-Forest Area
<b>AFM</b>	Advanced Forest Management
<b>PPE</b>	Personal Protective Equipment
<b>WII</b>	Wildlife Institute of India
<b>OJT</b>	On-the-job Training
<b>PwD</b>	People with Disability
<b>PPE</b>	Personal Protective Equipment