



Centurion University of Technology & Management, Odisha

SOP of Horticulture

Horticulture:

It deals with the art and science of growing fruits (Pomology), vegetables (Olericulture), flowers and ornamentals (Floriculture), plantation and spices crops, medicinal and aromatic crops, and post harvest technology of horticulture crops. The study of horticulture is designed to learn the fundamentals, principles, production technology and post harvest management of different horticulture crops.

Purpose and scope:

Horticulture involves plant propagation and cultivation to improve plant growth, yields, quality, nutritional value, and resistance to insects, diseases, and environmental stresses. It also includes plant conservation, landscape restoration, soil management, landscape and garden design, construction and maintenance, and arboriculture.

There is a dire need for professional in the field of horticulture to help the nation grow in terms on plant cultivation, the food and how plants are cultivated, given the vibrant, diverse and geographical nation we live with. The output of food grains has witnessed a record surge, as for 2020-21, total Food grain production in the country is estimated at record 303.34 million tonnes which is higher by 5.84 million tonnes than the production of foodgrain of 297.50 million tonnes achieved during 2019-20 (as per Ministry of Agriculture & Farmers Welfare). Right now, there is a demand for advancements in which our country has huge potential. There are so many concepts that are being covered under the name of Horticulture namely – monoculture, the concept of Permaculture to name a few. The Scope and business in horticulture, especially in India, are increasing day by day.

Employment areas:

There are various areas where one can work and apply their skills

Field Work	Sales and Marketing
Teaching	Research Area
Farming	Projects
Irrigation Department	Entrepreneurship

Job profiles in Horticulture:

Project Manager	Designer
Landscape Designer	Counsellor
Foreman	Horticulturist
Horticultural Education Supervisor	Assistant Manager of Human Resources
Professor	Scientist
Teacher	Farm Supervisor
Section Officer	Agriculture Inspector
Cultivator	Floriculturist
Pomologist	Soil Scientist
Seed Analyst	Marketing
Researcher	Pest Manager
Plant Health Care Manager	Crew Leader and Account Manager
Commercial Maintenance Manager	Enhancement Manager
Irrigation Manager	Business Development Manager

Pomologist job role:

- Developing new fruit and nut cultivars
- Studying pruning practices, fertilisation and other activities to ensure trees and crops remain healthy and productive
- Dealing with crop pests, infections and diseases which could threaten the health of a crop

- Determining the best ways to harvest and transport fruit and nuts, eg: developing specialised crates
- Analysing shelf life and storing conditions to ensure crops last as long as possible once harvested
- Cope with adverse weather to ensure survival of crops across changing climate conditions
- Studying the growing conditions of various fruit and nut trees
- Watering, pruning and transplanting crops, when necessary

Olericulturist job role:

- Developing new vegetable cultivars
- Studying pruning practices, fertilisation and other activities to ensure trees and crops remain healthy and productive
- Dealing with crop pests, infections and diseases which could threaten the health of a crop
- Determining the best ways to harvest and transport vegetables eg: developing specialised crates
- Analysing shelf life and storing conditions to ensure crops last as long as possible once harvested
- Cope with adverse weather to ensure survival of crops across changing climate conditions
- Studying the growing conditions of various vegetable plants.
- Watering, pruning and transplanting crops, when necessary

Floriculturists job role:

- Floriculturists are involved in the cultivation of plants that produce beautiful flowers.
- They focus on the farming of ornamental plants for gardens, floral industry and for export.
- In addition to this, they also produce plant breeding of new varieties.
- They also do other jobs like wild harvesting and production of commercial flowers, flower seed, foliage and essential oil crop and production of plant products

Landscaper job role:

Activities to modify the visible features of an area of land, including-

- Living elements, such as flora or fauna; or what is commonly called gardening, the art and craft of growing plants with a goal of creating a beauty within the landscape.
- Natural elements such as landforms, terrain shape and elevation, or bodies of water; and
- Abstract elements such as the weather and lighting conditions.

Food Scientist job role:

It is the responsibility of the food scientist or technologist to understand the underlying processes contributing to food deterioration and spoilage and, to device appropriate measures and methods of preservation in order to ensure availability, acceptability and safety of food.

- Post harvest loss reduction technology encompasses the usage of optimum harvest factors, reduction of losses in handling, packaging, transportation and storage with modern infrastructure machinery, processing into a wide variety of products, home scale preservation with low cost technology.
- Use of thermal processing, low temperature, drying, chemical and biological reactions coupled with other preservation techniques are applied to enhance the storability.
- Containers and packaging materials confer portability as well as extend the shelf-life. Adoption of these techniques could make available a large quantity of food by avoiding losses and provide better quality food and nutrition, more raw materials for processing, thus ensuring better returns to the farmers.

	Activities	Procedure	Operations
1.	Irrigation	Sprinklers	One should frequently clean and maintain the filters and nozzles. Check the throw regularly. STP water should be free from smell and particles. The system will be running timer, area wise

		Drip irrigation	<p>Regular check of quality of water.</p> <p>Drippers should be clean and maintained regularly.</p>
		Micro jet	<p>Regular check of quality of water.</p> <p>Drippers should be clean and maintained regularly.</p>
2.	Mowing	Lawn mowing	<p>Gardener will ensure the blades of the machine are tighten and sharpened before starting of the machine.</p> <p>Gardener will check the oil and petrol levels.</p> <p>Gardener will check the wheels are oiled and serviced.</p> <p>Gardener will ensure timing to be monitored and returned the same in a log book.</p> <p>Supervisor will ensure that the machine operator is wearing PP equipments before operation.</p>

			After work the machine will be washed and cleaned.
		Pattern of lawn mowing	<p>Gardener will ensure that he will be mowing from north to south direction.</p> <p>After 60days he will ensure the same area will be mowed from east to west.</p>
		Edge trimming	<p>Edge trimmer will be maintained by a single person.</p> <p>Gardener will regularly check on the blades of the machine.</p> <p>Gardener will check the oil and petrol levels.</p> <p>Gardener will ensure timing to be monitored and returned the same in a log book.</p> <p>Supervisor will ensure that the machine operator is wearing PP equipments before operation.</p> <p>Gardener will ensure that the grass is not wet at the time of edge trimming.</p>

			After work the machine will be washed and cleaned.
3.	Weed management	Removal of weeds	<p>Gardener will ensure the lawn to be kept neat and clean.</p> <p>Disposal of unwanted grass and weeds for composting.</p> <p>Application of herbicides on regular interval.</p> <p>Shrubs to be maintained spick and span.</p>
4.	Pruning	Pruning for trees and shrubs	<p>Supervisor will ensure no guest movements at the time of tree pruning.</p> <p>Gardener should be wearing safety equipments.</p> <p>Ensure tree pruner and ladder to be kept at tree pruning area.</p> <p>Tree branches to be taken for shredding area.</p> <p>Supervisor should ensure secateurs and hedge shears to be sharpened before pruning.</p>

			<p>Necessary cuttings to be sent to nursery area for propagation.</p> <p>Gardener will ensure that the area is cleaned after the completion of the work.</p>
5.	Soil covers	Mulching/soil loosening	<p>Major objective of the soil loosening is to conserve moisture in the soil surface it also helps in improving the water holding capacity and porosity of the soil.</p> <p>Gardener will use proper tools for loosening of the soil.</p> <p>Gardener will ensure no damages on the roots and trunk part of the plant.</p> <p>Gardener will ensure that area to be clean after work.</p>
6.	Pest management	Pesticide application	<p>Gardener will ensure the quantity of herbal pesticide before handing over to the gardener before the spraying.</p> <p>Supervisor will ensure that the machine operator is wearing PP equipments before operation.</p>

			<p>Mixing of chemicals with proper proportion of water, guidelines given by the supervisor.</p> <p>In case of spillage the area should be thoroughly washed with clean water.</p> <p>Approved chemicals will be sprayed.</p> <p>Chemicals to be sprayed on a sunny day.</p> <p>Gardener will ensure that the hands and face are washed with soap after completion of spraying.</p>
7.	Nutrient management	Nutrient application	<p>Before applying of nutrients beds will be prepared or soil will be loosened.</p> <p>Gardener will ensure the quantity of nutrient based on growth of the plant.</p> <p>Mixing of nutrients with proper proportion of water, guidelines given by the supervisor.</p>

			<p>Through watering to be done after nutrient application.</p> <p>Supervisor will ensure the guidelines of each nutrient are displayed in the horticulture store.</p>
		Manure application	<p>Manuring is done every quarterly.</p> <p>Gardener will ensure safety precautions before application.</p> <p>Manure to be monitored and measured in a log book.</p> <p>Supervisor will ensure that the entire manure is stored in horticulture store.</p>

Anita Patra

Registrar, CUTM

REGISTRAR
Centurion University of
Technology & Management
ODISHA