

DEPARTMENT OF NUTRITION AND DIETETICS

VALUE ADDED COURSE

KITCHEN GARDENING

Hours: 30

Course Outcomes:

After completion of this course, students will be able

CO.1. To enable the students to learn about the basics of kitchen gardening.

CO.2. To develop the knowledge on farming with the available resources.

CO.3. To promote students to cultivate chemical pesticide free foods.

CO.4. To develop the practical knowledge on different types of farming.

CO.5. To know best way and methods to control pest

UNIT – I

6 hrs

Basic concepts of kitchen gardening

1.1 Soil – Types of Soil.

1.2 Irrigation – Types of Irrigation – Surface Irrigation, Drip Irrigation, Sprinkler Irrigation, Manual Irrigation.

1.3 Tools and Equipment- Hedge Shears, Trowel, Spade, Shovel, Watering Can, Digging Rod, Small Spade, Hoe.

1.4 Containers – types of container – Earth Pot, Poly Bags, Cement Pots, Ceramics.

UNIT – II

6 hrs

Types of plants and layout of kitchen gardening

2.1 Plants- Types of Plants – herbs, shrubs, creepers, climbers and trees.

2.2 Designs and Layout of Kitchen Garden – home, terrace, school and college.

UNIT – III

6 hrs

Organic manure

3.1 Introduction – Manure, Types of Organic Manure – Vermicomposting, Panjakaviya, Amirthakaraisal, Neem Seed Extract and Neem Oil Spray.

3.2 Kitchen waste – types, Preparation of Organic Manure.

UNIT – IV

6 hrs

Chemical fertilizer and pest control

4.1 Introduction- chemical fertilizer & types.

4.2 Harmful effects of chemical fertilizer – Soil, Plant, Animal and Human.

4.3 Pest Management – Types of Pest, Pest controlling method.

UNIT – V

6 hrs

Plantation method

5.1 Plantation – Types of Plantation- Traditional Vegetable Gardening, Permaculture, No Dig, Raised Beds, Green House, Mist house. Preparation of Seed Ball.

5.2 Mushroom Cultivation – Composting, Spewing, Casing, Pinning, Cropping.

REFERENCE

1. Richard Bird, The Kitchen Garden Book (2013)
2. Stephen Albert The Kitchen Garden Grower's Guide: A practical vegetable and herb garden encyclopedia(2008)
3. Aruna Ludra, Four Seasons Gardening in India Hardcover (2000)
4. D.P.Tripathi, Mushroom Cultivation, Oxford and IBH Publishing CO.Pvt.Ltd. New Delhi (2017).

VALUE ADDED COURSE
FOOD TOXICOLOGY

Hours: 30

Course Outcomes:

After completion of this course, students will be able

CO.1. Understand the basics in food toxicology.

CO.2. Learn about various toxins present in plant and animal foods.

CO.3. Study about the sources of toxins delivered in food stuffs.

UNIT – I **6 hrs**

Introduction to Food Toxicology:

1.1 Toxicology – definition, branches of Toxicology.

1.2 Food Toxicology – definition, Biological factors that influence toxicity- Xenobiotics, Toxin absorption in alimentary tract, storage, distribution and excretion.

UNIT - II **6 hrs**

Food Toxins:

2.1 Natural toxins present in plant foods – lectins, vasoactive amines, caffeine, phytoalexins.

2.2 Natural toxins present in Animal foods - Bile acids, vitamin –A: Acute and chronic toxicity.

UNIT – III **6 hrs**

Natural toxins present in marine foods and mushroom varieties:

3.1 Marine fish foods: PSP – paralytic shell fish, NSP – Neurotoxic shell fish poisoning, ASP- Amnesic shell fish poisoning, scombroid fish poisoning, tetrodotoxin.

(i) Mushroom poisoning : Amanita phalloides, Amanita muscaria, psilocybe.

UNIT - IV **6 hrs**

Food Contaminants from Industrial wastes:

(i) Chlorinated Hydrocarbons – polychlorinated Biphenyls (PCB's), Polychlorinated dibenzo- p-dioxine (PCDDs)

(ii) Heavy Metals – Arsenic, lead, mercury and cadmium.

UNIT – V **6 hrs**

Toxins from Artificial sources:

(i) Insecticides: DDT, chlorinated cyclodiene insecticide.

(ii) Food Additives:

(a) Preservatives – Benzoic acid, sorbic acid, formaldehyde

(b) Antioxidants – BHA, BHT

(c) Sweetners – saccharin, sodium cyclamate

(d) Colouring agents – Amaranth (Red), Tartrazine (yellow)

Reference:

1. Introduction to Food Toxicology (2nd edition), Takayuki Shibamoto and Leonard Bjeldanes, publisher Academic Press Inc. London, 2009.
2. Principles of Food Toxicology , Tonu Pussa, Taylor and Francis Group CRC Press, London 2014.