



**NUTAN MAHAVIDYALAYA, SAILU-431503
DIST. PARBHANI**

**Affiliated to Swami Ramanand Teerth Marathwada University, Nanded,
NAAC Re-accredited B+ Grade**

Dr. Uttam Rathod

Principal

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CROSS-CUTTING ISSUE (*Environment and Sustainability*)

Nutan Mahavidyalaya sailu is affiliated to Swami Ramanand Teerth Marathwada University Nanded .hence the planning and designing of the curriculum is the part of affiliating university while implementation is the part of college. The curriculum designed by the affiliated university has the following cross cutting issues subject of Botany

SUBJECT: BOTANY

B.Sc. Second Year Semi-III

SECB-I (A) FRUIT AND VEGETABLE PROCESSING

UNIT I

Production and processing scenario of fruits and vegetables in India and World, Scope of fruit and vegetable preservation industry in India. Present status, constraints and prospects, Overview of principles and preservation methods of fruits and vegetables (Physical and Chemical), Commercial processing technology of fruits and vegetables, Primary processing and pack house handling of fruits and vegetables; Peeling, slicing, cubing, cutting and other size reduction operations for fruits and vegetables, Minimal processing of fruits and vegetables Blanching operations and equipment.

UNIT II

Preparation and preservation of juices, squashes, syrups, sherbets, nectars, cordials, etc; Problems on squash and RTS; Processing and equipment for above products and FSSAI specification Preparation, preservation and machines for manufacture of crystallized fruits and preserves, jam, jelly and candies, Preparation, preservation and machines for manufacture of preserve, concentrate, fruit wine, pickles, sauce, paste, ketchup; toffee, cheese, lather, soup powders; FSSAI specification, Commercial processing technology of selected fruits and vegetables for production of various value added processed products.

Practicals :

1. Preparation of jam/ jelly from selected fruit


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2. Preparation of RTS beverage e.g. Amala, Mango and Pineapple etc
3. Preparation of squash
4. Preparation of fruit candy
5. Preparation of fruit leather
6. Preparation of fruit toffee
7. Preparation of pickle

SUBJECT: BOTANY
B.Sc. Second Year

SECB-II (A) NURSERY AND GARDENING

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SUBJECT: BOTANY

B.Sc. Second Year Semi-IV

UNIT I

Nursery: definition, objectives and scope and building up of infrastructure for nursery, planning

and seasonal activities - Planting - direct seeding and transplants.

Vegetative propagation: air-layering, cutting, selection of cutting, collecting season, treatment

of cutting, rooting medium and planting of cuttings , Hardening of plants , green house , mist

chamber, shed roof, shade house and glass house.

Gardening: definition, objectives and scope, different types of gardening , landscape and home



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gardening , parks and its components , plant materials and design , computer applications in

landscaping, Landscaping highways and Educational Institutions.

Gardening operations: soil laying, manuring, watering, management of pests and diseases and harvesting.


UNIT II

Ornamental Plants: Flowering annuals; Herbaceous perennials; Divine vines; Shade and ornamental trees; Ornamental bulbous and foliage plants; Cacti and succulents; Palms and Cycads; Ferns and Selaginellas; Cultivation of plants in pots; Indoor gardening; Bonsai, diseases and Pests of Ornamental Plants.

Principles of Garden Designs: English, Italian, French, Persian, Mughal and Japanese gardens; Features of a garden (Garden wall, Fencing, Steps, Hedge, Edging, Lawn, Flower beds, Shrubbery, Borders, Water garden). Some Famous gardens of India.

Practicals:

1. Preparation of nursery beds and sowing of seeds.
2. Study of Soil sterilization process
3. Seed sowing and transplantation methods



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SUBJECT: BOTANY-Sem- VI

MEDICINAL PLANT PRODUCT PREPARATION

UNIT-I: MEDICINAL PLANTS

Introduction, Definitions, Scope and Importance, Concept of active principles

UNIT-II: STUDY OF MEDICINAL PLANTS

Description, Identification and Classification, medicinal uses of locally available medicinal plants (Awla, Adulsa, Ginger)

UNIT-III: PRACTICALS ON MEDICINAL PLANT PRODUCT PREPARATION

Preparation of Awla candy, Awla masticator (Awla supari), Adulsa syrup, Ginger syrup and cake, Visit to a production industry in nearby area (Students are expected to prepare a model of production industry, a visit report and to submit the same at the time of practical examination.

CLASS: B. Sc. THIRD YEAR, SUBJECT: BOTANY:- Sem-V

MUSHROOM CULTIVATION(*Environment and Sustainability*)

UNIT-I: FUNGAL BIOMASS AS NON CONVENTIONAL FOOD (6 periods)

Introduction, Concept and need, Advantages, disadvantages and Sources of non-conventional food

UNIT-II: MUSHROOM (*PLEUROTUS*) CULTIVATION (15 periods)

Introduction, Systematic position, thallus structure and fruit body of *Pleurotus*, Merits of *Pleurotus* cultivation, Commercial cultivation of *Pleurotus*, Cultivation details of *Pleurotus* (Substrate, Soaking, Pasteurization, Spawning, Cropping, Picking and Packing, Flow chart), *Pleurotus* products fresh and processed

UNIT-III: PRACTICALS ON MUSHROOM (*PLEUROTUS* CULTIVATION) (8 practicals)

Principle, Requirement, procedure, observations, Harvesting, results and records, Visit to a Mushroom cultivation laboratory in nearby area (Students are expected to prepare a model of Mushroom cultivation laboratory, a visit report and to submit the same at the time of practical examination

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Selected Readings :

1. Fruit and Vegetable Preservation Principles and Practices-Srivastava R.P. and Sanjeev Kumar International Book Distributing Company, New Delhi-2005
2. Post Harvest Technology of Fruits and Vegetables: Handling, Processing, Fermentation and Waste Management vol. I & II Varma L. R. and Joshi V.K. Indus Publishing, 2000
3. Preservation of Fruits and Vegetables Khader ICAR, New Delhi-2010
4. Skills in plant science-Bodke S.S. & N.M.Dhekle
5. Fruit and Vegetable Processing M.G. Danthy FAO, Rome
6. Post harvest Handling and Processing of Fruit and Vegetable-I.S. Singh Text book
7. Fruit Processing- David Arthey, Reference book
8. Handbook of Fruit- Sinha and Hui John Wiley and
9. Preservation -Principles and Practices-Srivastava RP & Kumar S International Book, Distributors, 2003
10. Handbook of Fruit Science &Technology: Production, Composition and Processing- Salunkhe DK



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