



Department of Horticulture
S.M.D.M. Mahavidyalaya, Kalamb
Agro-Information Center (AIC)-Kalamb



Mr. M.R. Kawale
M.Sc. Agri.
Head and Associate Professor

Mr. H.D. Chandore
M.Sc. Agri. NET
Assistant Professor

Email: dphorti@gmail.com

Contact No: 9765644895/ 8975731006

Department of Horticulture and Botany Conducted Various Courses Started From Academic Year 2017-18

Course Code No	Name of Course	Duration	Strength	Reg. Fee	Eligibility
Certificate courses					
HORT-101	Certificate course on Nursery Management of Horticulture Crops	1 Week	20	100	XII th Pass
HORT-102	Certificate course on Landscaping and Gardening	1 Week	20	100	XII th Pass
Diploma course					
HORT-103	Diploma Course on Sericulture	2 Week	20	100	XII th Pass
HORT-104	Diploma Course on Mushroom Production	2 Week	20	100	XII th Pass
BOT-101	Diploma Course on Plant Pathology techniques in plant				
Advanced Diploma					
HORT-105	Advanced Diploma course on Greenhouse Management	1 Month	20	100	XII th Pass
HORT-106	Advanced Diploma course on Organic Production of Horticulture Crops	1 Month	20	100	XII th Pass
BOT-107	Advanced Diploma Course on Plant Tissue Culture	1 Month	20	100	XII th Pass
Value added course					
HORT-108	Value added course on Flower arraignment and Dry Decoration	1 Week	20	100	XII th Pass
HORT-109	Value Added course on Fruits and Vegetable Carving	1 Week	20	100	XII th Pass
HORT-110	Value added course on Bonsai Culture and Management	1 Week	20	100	XII th Pass
HORT-111	Value Added Course on Fruit and Vegetable Processing	1 Month	20		
Crash Course for Competitive Exam					
COMP-101	Advanced Diploma Course on Environment Science For Competitive Exam	1 Month	30	100	XII th Pass
COMP-102	Advanced Diploma Course on CSAT	1 Month	30	100	XII th Pass

Rules and Regulations:

1. One batch is consisting of 20 students/ participants for better practical knowledge
2. First come first allotments are considered for registration.
3. Registration fees contain only tuition, registration and certificate fees. For other facilities such as tour, teaching materials etc may require extra charges.
4. Students must follow college rules and regulations. They may cancelled their registration if found to make improper behavior or any misconduct during course time.
5. During curse time all assignments, projects etc., given to candidate must complete it properly.

Course Trainer
Mr. Chandore H.D.
M.Sc. Agri.
Assistant Professor
Department of Horticulture
S.M.D.M.M.Kalamb

Head of Horticulture
Mr. M.R. Kawale
M.Sc. Agri.
Associate Professor
Department of Horticulture
S.M.D.M.M.Kalamb

Head of Botany
Mrs. Mukhedkar A.R.
M.Sc.
Associate Professor
Department of Horticulture
S.M.D.M.M.Kalamb

Principal
Dr. Pawar S.V.
S.M.D.M.M.Kalamb

1) Certificate course on Nursery Management of Horticulture Crops

Course Code: HORTI-101

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 7 Days (1 Week)

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

Requirement: Charts/ PPT/ Video/ CD/ Tools and Equipments Field Visit/Tools and Equipments

Syllabus:

Theory:

- 1) Introduction, Definition, Present status, Importance and Future scope of Nursery management of Horticulture Crops in Maharashtra / India.
- 2) Nursery arrangement – Planning, General nursery practices, various nursery techniques.
- 3) Plant propagation- Its Principles and Methods
- 4) Sexual plant propagation its merits and demerits, seed germination, seed dormancy its factors, seed viability and longevity of ornamental crops.
- 5) Vegetative/ Asexual plant propagation its merits and demerits.
- 6) Method of Advanced Vegetative Propagation Techniques: Cutting, Layering, Budding, Grafting techniques
- 7) Stock Scion relationship- Effect of roots stock on scion, effect of scion on root stock
- 8) Study of rootstock of various crops.
- 9) Micro propagation techniques and importance of tissue culture in horticultural crops
- 10) Plant growth regulators its types and their uses in Nursery for horticultural crops.
- 11) Vegetable Grafting Technologies
- 12) Advanced Nursery Technologies

Practical:

- 1) Introduction & Identification of Garden Tools
- 2) Preparation of Potting Mixture, Potting & Repotting
- 3) Growing plants in media like soil, sand, leaf mould, sphagnum moss, vermiculture & soil less culture
- 4) Preparation of nursery beds
- 5) Methods of Seed Treatment

- 6) Application & methods of plant growth regulators
- 7) Practical on Various methods of cutting
- 8) Practical on Various methods of layering
- 9) Practical on Various methods of grafting
- 10) Practical on Various methods of budding
- 11) Practical on Various methods of grafting of Vegetables
- 12) Practical on Propagation by specialized structure- stem, roots, bulb, corm, tuber.
- 13) Practical on Micro-propagation Techniques of Horticultural Crops
- 14) Various Structures used in Nursery management
- 15) Visit to Nursery

Suggested Readings:

- 1) Adriance, G.W. and F.R. Brison, 1000. Propagation of Horticultural Plants. Biotech Books, New Delhi.
- 2) Chadha, K.L., P.N.Ravindran and Leela Sahijran (Eds) 1000. Biotechnology in Horticulture and Plantation crops. Malhotra Publishing House, New Delhi.
- 3) Hartmann, H.T. and D.E. Kester, 1975. Plant Propagation : Principles and Practices. Prentice. Hall, New Delhi.
- 4) Singh, S.P. 1989. Mist Propagation. Metropolitan Book Co., New Delhi.
- 5) Wright, R C M. 1974. Simple Plant Propagation. Ward Lock, London.
- 6) Ropwatika sangpoanp Dr Aba Patil,
- 7) Ropwatika: Ravindra Katole. Godwa Publication
- 8) YCMOU Book

2) Certificate course on Landscaping and Gardening

Course Code: HORTI-102

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 7 Days (1 Week)

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship: This course focus on rural and urban opportunities in self-employment. This course is encourage the students the scope of landscaping along with the knowledge.

Skill development:

1. Understand the process of landscaping and gardening
2. Demonstrate the knowledge of botany through proper identification
3. Learn the methods of landscaping techniques
4. Understand the basics of landscaping principles and gardening

Requirement: Charts/ PPT/ Video/ CD/ Software/ Field Visit/Card sheet/ Tools and Equipments

Syllabus:

Theory:

- 1) Floriculture and Landscaping -Definition, Importance, Scope of ornamental Horticulture and landscaping
- 2) Classification of ornamental crops.
- 3) Principles of garden designs : Principles of landscape gardening – Initial approach – Axis – Focal Point – Mass effect – Unity – Space – Divisional Lines – Proportion and Scale – Texture – Time and Light – Tone and Color – Mobility – Rhythm – Balance – Contract – Harmony – Vista – Style.
- 4) Study of symbols, tools and implements used in landscape design.
- 5) Plant materials for landscaping and their identification i.e., Study of garden features:
- 6) Flowering and foliage trees, Climbers and creepers, Hedge and edges, Arches and pergolas- Arches and Pergolas – Screens – Bridges – Outdoor garden rooms (Gazebos, garden pavilions, band stand, bower and thatched huts), Roads- Garden Drives (Gravel and Asphalt) and Paths (Gravel, Brick, Grass, Stone, Crazy pavings), Topiary works, Seating arraignment, Garden Garden adornments via., – Garden Seats – Ornamental tubs, urns and Vases – Bird baths – Sun dials – Floral Clocks – Japanese Lanterns – Ornamental Stones – Fountains – statues – Towers – Wells – Plants Containers – Plant Strands. Terrarium, Bonsai Culture, conservatory and lath house. Garden components or features –Garden walls – Retaining wall – Fences and Gates– Steps. Lawn- various methods of plating and its maintenance: Lawn – Selection of Grass – Bermuda grass – Korean grass – Poa grass – Fescue grass – Kentucky blue grass - Grasses for shady areas – Site Selection – Soil – Preparation of soil – drainage – digging – manuring and grading – Methods of planting – Sowing of

Seeds – Dibbling – Turfing – turf plastering – Bricking – Planting on Polythene – Maintenance of lawn – Mowling – Rolling – Sweeping – Scraping – Raking – Weeding – Irrigation – Top dressing with compost and fertilizers – Diseases and other problems – Fairy ring – Pale Yellow Laws.

- 7) Types of garden – Formal – Informal – Wild Garden – Styles of garden in the world – Mughal Garden – Site and design – Walls and gates – Terrace – Running water – Baradari – Trees and Flowers. Features of English – Italian – French – Persian Gardens – Japanese Garden – Types of Japanese Garden – Hill – Flat – Tea – Passage – Sand Gardens – Features of Japanese Garden – Ponds – Streams – Water falls – Fountains – Islands – Bridges – Water Basins – Stone Lanterns – Stones – Pagodas – Fences and Gates – Vegetation (Ever green, Deciduous and Flowering plants). Famous Gardens of India – Lal bagh (Bangalore) – Brindavan Garden (Mysore) – Government Botanic Gardens (Ootacamud) Mughal garden (Pinjore) – Chandigarh Rose garden. Specialized gardens – Herb garden – Bog Garden – Sunken garden – Topiary Garden – Kitchen garden – Paved garden – Moon Garden – Gardening in hanging baskets – Window garden – Miniature garden – Mini Zoo – Importance of Green house – Conservatory – Lath house – Fernery in ornamental horticulture. Rock Garden – Types of rock Garden – Selection of site – Construction of the Rockery – Planting – Management of the Rockery – Plants for rock garden – Examples of Cacti and succulents, ferns, shrubs, herbaceous plants, bulbs, flowering annuals. Water garden – Informal pool – Formal Pool – Construction – Planting methods – Filling the pool (water course and falls) – Care of the water garden – Plants for water garden – Surface flowering aquatics – Oxygenators – Floaters – Marginals. Roof garden – Need for roof garden – Limitations – Types of roof garden (Private or cooperative) – Planning – Suitability of the roof – Drainage and water proofing – Making of flower beds, pots and containers – Gardening – Concept – Soil Media – Planting – Planting materials Examples – Flowering annuals – Herbaceous perennials – Shrubs – Trees – Creepers – Bulbs – water plants – Maintenance of plants.
- 8) Landscaping Highways, Railway stations, Bus terminus and Airports. towns, country side, canals and along the bank of rivers, factories, places of historic importance, places of worship, School and colleges, Public Places, Bio-aesthetic Planning – Definition – Aim and Concept – Need for Bio-aesthetic planning – Air pollution – Human welfare.
- 9) Use of CAD/AUTOCAD systems for landscape designing.

Practical:

- 1) Identification of various tools and equipments used in landscaping
- 2) Identification of ornamental plants used in landscaping
- 3) Use of drawing scales, Lettering, plotting, reading and interpretation of plans.
- 4) Reproduction of plans on different scales
- 5) Site analysis of various landscape projects.
- 6) Preparation of land for lawn and planting.
- 7) Preparation of Plan and Layout of Landscaping of Roadside or Avenue Plantation
- 8) Preparation of Plan and Layout of Landscaping of Public garden and area
- 9) Preparation of Plan and Layout of Landscaping of Private Home Garden
- 10) Preparation of Plan and Layout of Landscaping of Education Institutes
- 11) Preparation of Plan and Layout of Landscaping of Industry area
- 12) Preparation of Plan and Layout of Landscaping of Religious site

- 13) Preparation of Plan and Layout of Landscaping of Vertical or Multistoried garden
- 14) Preparation of Plan and Layout of Landscaping of Indoor Gardens
- 15) Use of CAD/AUTOCAD systems for landscape designing.
- 16) Preparation of cost estimates for landscaping and maintenance.
- 17) Study tours to various cities, building, roads, parks and outdoor recreational sites

Suggested Readings:

- 1) Baily, L.H. 1963. The Standard Cyclopedia of Horticulture.
- 2) Chadha, K.L . and ^B.Chaudhary. 1986. Ornamental Horticulture in India.ICAR, New Delhi.
- 3) Evett, T.H. 1993. New illustrated Encyclopedia of Gardening. Graystone Press, New York.
- 4) Iyyenger, Gopalaswamy, 1970. Complete Gardening in India. Kalyani Publishers, New Delhi.
- 5) Trivedi, P.P. 1983. Home Gardening. ICAR, New Delhi.
- 6) Dr. Hemla Naik B Mr. S.Y. Chandrashekhar Dr. M. Jawaharlal- Principles of Landscape Gardening:
- 7) YCMOU Book

3) Diploma course on Sericulture

Course Code: HORTI-103

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 12 Days (2 Week)

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

Requirement: Charts/ PPT/ Video/ CD/Sericulture Worm/ Sericulture Unit/ Field Visit

Syllabus:

Theory:

- 1) Introduction, History and Scope and Importance of Sericulture, Silk industry in India
- 2) Types of Sericulture-Tasar, Muga, Eri, Mulberry
- 3) Cycles and Entomology of Sericulture- Silkworm breeding and genetics
- 4) Mulberry Cultivation
- 5) Silkworm Rearing
- 6) Chwaki Silkworm rearing, Late age silkworm rearing
- 7) Rearing House Construction
- 8) Pest management Practices in Sericulture
- 9) Diseases management Practices in Sericulture
- 10) Post Cocoon Technology
- 11) Waste management and Utilization of Sericulture
- 12) Silk grading and technique silk weaving technology
- 13) Silk drying and printing technology
- 14) Sericulture products and marketing
- 15) Economics of Sericulture

Practical:

- 1) Identification of various tools and equipments used in Sericulture (rearing appliances)
- 2) Cultivation technology of Mulberry plants
- 3) Morphology of silkworm
- 4) Effective concentration of disinfectants, preparation of disinfectants – Uzi control-use of nets.

- 5) Incubation of silkworm eggs – black boxing and hatching, recording temperature and humidity.
- 6) Mulberry leaf estimation – harvesting – preservation techniques – leaf selection for different instars.
- 7) Identification of moulting larva.
- 8) Assessment and preparation of harvest report – mountages
- 9) Identification of pest, disease and their management in mulberry plants
- 10) Examination of various pest, disease and their management of silkworm
- 11) Harvesting, Reeling and post harvest management practices of sill.
- 12) Preparation of project report for sericulture unit
- 13) On job training and sericulture unit visit

Suggested Readings:

- 1) INDIAN SILK - MONTHLY JOURNAL
- 2) Handbook of sericulture technologies in Hindi
- 3) Reshim Udyog- Ravindra Katole
- 4) Hamkhas paisa denari reshim sheti (marathai); sanjay ghule
- 5) Sulabh reshim Nirmiti- Dr Chandrkant Hiware- Menaka prakashan
- 6) Reshim sheti-Semma mahajan
- 7) Reshim shetiche adhunik tantrdnayan ; Dr. Rajeev Lakshman Naik Mrs. Smita Rajeev Naik and Tech Know Publication
- 8) Reshim Udyog: by MITCON and Kaushalyavikas Va Swayamrojgar Pustika

4) Diploma Course on Mushroom Production:

Course Code: HORTI-104

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 12 Days (2 Week)

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

Requirement: Charts/ PPT/ Video/ CD/Mushroom Spawn and Shade House/ Field Visit

Syllabus:

Theory:

- 1) Introduction, Scope and Importance of Mushroom Production,
- 2) Nutritional Importance of Mushroom
- 3) Classification and types of Mushroom,
- 4) Morphology and Identification of life stages mushroom
- 5) Preparation of Culture Media and Spawns.
- 6) Cultivation Technology of Oyster mushroom,
- 7) Cultivation Technology of white button mushroom
- 8) Cultivation Technology of Paddy straw mushroom.
- 9) Different method of composting,
- 10) Filling of trays, Pasteurization and other management practices.
- 11) Management of pest and disease of mushroom.
- 12) Post Harvest management and Preservation of mushroom
- 13) Marketing and transportation of mushroom and their products

Practical:

- 1) Introduction and Classification of mushrooms.
- 2) Study of morphology and of Mushroom
- 3) Materials and equipments used for commercial mushroom cultivation
- 4) Preparation of culture media.
- 5) Preparation of master and commercial spawns

- 6) Cultivation of oyster,
- 7) Cultivation white button
- 8) Cultivation paddy straw mushroom
- 9) Different method of composting techniques.
- 10) Filling the trays, staking, pasteurization and spawning
- 11) Different recipe of mushroom
- 12) Preservation techniques of mushroom
- 13) Project preparation of mushroom
- 14) Visit to Mushroom culture

Suggested Readings:

- 1) A handbook of Mushroom Cultivation. Dr R.K Pandey Dr S K. Ghosh
- 2) Handbook of Mushroom Cultivation, Processing and packaging – Eiri staff
- 3) Mushroom Production and Processing Technology IST Edition by V. N. Pathak Hardcover 427.00
- 4) Mushroom Production in India. Daya Publishing House. B C , Suman, V P Sharma
- 5) अळिंबी उत्पादन कृषी पूरक उद्योग (Alimbi uptadan:Krishi Purak Udyog), कि .प्र .देवकर , दि.मा सावंत , प्र .वि .वाणी , गोडवा कृषी प्रकाशन

5) Advanced Diploma in Greenhouse Management

Course Code: HORTI-105

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 1 Month

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

Requirement: Charts/ PPT/ Video/ CD/Mushroom Spawn and Shade House/ Field Visit

Syllabus:

Theory:

- 1) Introduction: Definition, Importance and Scope of Greenhouse, Present status of Greenhouse
- 2) Classification of Greenhouse
- 3) Design and construction of greenhouse
- 4) Components of Greenhouse
- 5) Plant growing structures/ containers in greenhouse
- 6) Environmental factors of Greenhouse and its management
- 7) Media preparation and fumigation
- 8) Irrigation and Fertigation techniques
- 9) Pest and disease management system in greenhouse
- 10) Economics of greenhouse
- 11) Special Horticultural practices in greenhouse
- 12) Greenhouse cultivation technology of Rose, Carnation, Gerbera, Anthurium, Chrysanthemum, Orchid, Color Capsicum, Cherry Tomato.
- 13) Post harvest handling practices of greenhouse crops
- 14) Marketing and export management of greenhouse crops
- 15) Use of computer in Hi-tech floriculture

Practical:

- 1) Selection of site for greenhouse
- 2) Construction and planning of greenhouse

- 3) Preparation of different media and types of propagation media used in greenhouse
- 4) Sterilization of greenhouse
- 5) Preparation of various layout in greenhouse
- 6) Regulation of photoperiod, control of temperature, humidity and carbon dioxide.
- 7) Water and fertilizer management practices -, formulation of different fertilizer mixtures
- 8) Diseases and pest management practices
- 9) Advanced horticultural practices in greenhouse in various crops
- 10) Harvesting and post harvest management practices in various crops
- 11) Preparation of project report for bank loan application
- 12) Cost and benefit (C/B ratio) analysis of various crops
- 13) Use of Computer and their automation management in greenhouse
- 14) Visit to Nearby greenhouse

Suggested Readings:

- 1) Manohar, R.K. and C. Igathinathane. 1000. Greenhouse Technology and Management. B.S. Publications. Hyderabad.
- 2) Nelson, P.V. 1998. Greenhouse Operation and Management. Prentice Hall, New Jersey.
- 3) Robert, A. Aldrich and John Bartok Jr. 1990. Greenhouse Engineering. Ball Publications, USA
- 4) मोरे, जगताप, रणपिसे- ग्रीन हाऊस तंत्रज्ञान, कॉन्टिनेन्टल प्रकाशन

6) Advanced Diploma course on Organic Production of Horticulture crops

Course Code: HORTI-106

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 1 Month

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

Requirement: Charts/ PPT/ Video/ CD/Organic Raw materials/vermicompost/ Biofertiliser/ Biopesticide/ Field Visit

Syllabus:

Theory:

- 1) Introduction, Importance, Scope and present status of Organic Production in India and Maharashtra
- 2) Inputs of organic production of horticultural crops
- 3) Organic ways of seed production and their importance
- 4) Organic Fertilizer Management techniques
- 5) Types of Organic Manures
- 6) Organic Production Requirements
- 7) Components of Organic manures
- 8) Compost and their composting techniques
- 9) Green Manuring- Types, Merits and Demerits, Application methods
- 10) Vermicomposting, vermiwash
- 11) Recycling of Organic Residues
- 12) Biofertilizers- Types, Merits and Demerits, Application methods
- 13) Soil Improvements and Soil Amendments
- 14) Organic Weed Management practices;
- 15) Organic Diseases and pest Management techniques
- 16) Organic Food Quality, Quality Control Standards
- 17) Certification Process and Procedure
- 18) Certification Agencies, Government Schemes for the promotion of organic production

Practical:

- 1) Preparation of standard procedure of FYM and Compost
- 2) Preparation of standard procedure Green-manuring
- 3) Preparation of standard procedure for Biofertilizer application
- 4) Preparation of standard procedure vermicomposting and vermiwash
- 5) Recycling of Organic Residues
- 6) Soil Improvements and Soil Amendments
- 7) Organic seed treatments
- 8) Organic Weed Management practices
- 9) Organic Diseases and pest Management techniques
- 10) Practical on standard food quality control of organic products
- 11) Certification Process and Procedure of organic product
- 12) Packaging, marketing of organic products

Suggested Readings:

- 1) Gehlot D- Organic farming components and manamgnet, agrbios publication
- 2) Amitabhs Singh, H.B. Rakshit- ABC of organic farming-
- 3) S.P Palaniappan, K Annadurai - Organic farming they and practices- Scientific Publishers Journals Dept
- 4) Dr. Prashant Naikwadi - Sendriya Sheti - सेंद्रिय शेती, Sakal Prakashan
- 5) Arun Dike / Arvind Dabholkar- Sendriya Sheti (सेंद्रिय शेती)- Sendriya Sheti (सेंद्रिय शेती)
- 6) संजय भा. गुंजाळ . सेंद्रिय शेती. गोडवा कृषी प्रकाशन
- 7) रविंद्र काटोले. गांइळखत निर्मिती उदोग गोडवा कृषी प्रकाशन

7) Value added course on Flower arraignment and Dry Decoration:

Course Code: HORTI-107

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 7 Days (1 Week)

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

Requirement: Charts/ PPT/ Video/ CD/ Flowers/ Dry Decoration materials etc/ Tools and Equipments

Syllabus:

Theory:

- 1) Introduction, Scope and Importance of Floriculture specially emphasize on Flower Decoration and Dry decoration
- 2) Types of Flower Arrangement: Floral Ornaments – Garlands – Floral crowns – Hair decoration – Rangoli – Floral Bouquets – Button holes – Floral arrangement – Western style –
- 3) Principles of Design viz., – Emphasis – Balance – Proportion – Rhythm – Harmony – Unity – Elements of Design viz., – Line – Form – Texture – Colour
- 4) Selection of flowers and foliage – Line flowers – Form flowers – Mass flowers – Filler flower – Materials required –
- 5) Design rules – Types of floral arrangement –Circular – Triangular – Radiating – Crescent – Horizontal Hogarthian curve
- 6) Conditioning – Reconditioning of flowers.
- 7) Japanese floral arrangement – Ikebana – Moribana – Nageire – Jiyu-bana-Zen'eika – Zen'ei-bana-Morimono – Materials required – General rules – for Moribana and Nageire styles of arrangement – Basic styles of Moribana and Nageire – Basic upright and Basic slanting arrangements.
- 8) Dry flower arrangements. Types and Designs
- 9) Material Selection in Dry Flower arrangements.
- 10) Economic considerations for flower arrangements.
- 11) Exhibition, Marketing of Flower arrangement

Practical:

- 1) Identification and proper selection of flower arrangement tool, containers, flowers and other material and accessories
- 2) Preparation of various types of bouquets
- 3) Preparation of various types of boutonnieres, wreathes, nosegay, etc
- 4) Practical on Japanese style of flower arrangement- Ikebana, Morribana, Morrimono, Naggire,
- 5) Preparation of various types of garland, Gajra, Venni etc.

- 6) Drying and preservation technique of dry flower
- 7) Preparation of pot pourrie
- 8) Preparation of Greeting card using dry flower arrangement
- 9) Preparation of Rangoli by using various types of flowers
- 10) Conditioning – Reconditioning of flowers.
- 11) Exhibition of cut flowers, floral arraignment
- 12) Project assignment on wedding decoration/ ceremony or other occasion
- 13) Visit to nearby floriculture market

Suggested Readings:

- 1) Jean Taylor Creative Flower Arrangements. Random House UK; New edition edition (27 November 1993)
- 2) Purnima Shah. Silence Speaks - A book about Japanese flower arrangements (Ikebana) . Buddha Bamboo; 1ST edition (2016)
- 3) Stella Coe. Art of Japanese Flower Arrangement .
- 4) Fiona Barnett . Flower Arranging: A Complete Guide to Creative Floral Arrangements . Southwater publisher
- 5) Charlene Tarbox . Creative Haven Beautiful Flower Arrangements Coloring Book. Dover Publications Inc.; Clr Csm edition

Course Code: HORTI-108

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 7 Days (1 Week)

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

Requirement: Charts/ PPT/ Video/ CD/Fruits and Vegetables/ Fruit and vegetable Carving tool set

Syllabus:

Theory:

- 1) Introduction, Definition, History, Importance and Scope of Fruits and Vegetable Carving in India
- 2) Tools and equipments used in fruit and vegetable carving with their function
- 3) Ideal Selection of Fruits, Vegetables, etc.

Practical:

- 1) Identification of tools used in Fruits and Vegetable Carving
- 2) Ideal Selection of Fruits, Vegetables, etc.
- 3) Practical on Cucumber Leaf Carving
- 4) Practical on Carved Pumpkin Bowl
- 5) Practical on Watermelon Carving Flower
- 6) Practical on Fancy Watermelon Bowl
- 7) Practical on Carrot Leaf Carving
- 8) Practical on Radish Flower 1
- 9) Practical on Radish Flower 2
- 10) Practical on Carved Melon Bowl
- 11) Practical on Tomato Basket Garnish
- 12) Practical on Carrot Rose Carving
- 13) Practical on Pumpkin Carving Rose
- 14) Practical on Watermelon Basket Carving
- 15) Practical on Watermelon Fruit Bowl
- 16) Practical on Pumpkin Carving
- 17) Practical on Cucumber White Lotus
- 18) Practical on Flowery Watermelon Carving
- 19) Exhibition of Fruits and vegetable carving

Suggested Readings:

- 1) Angkana Neumayer (Author), Alex Neumayer Table Decoration: with Fruits and Vegetables. Schiffer Publishing Ltd (20 June 2010)
- 2) Tarla dalal Fruit and Vegetable Carving , Sanjay and Company; 1st edition
- 3) Kikky Sihota. Creative Carving of Fruits and Vegetables Lustre; 1st edition edition (1 January 2001)
- 4) Francine Agile . Food Carving: Your Definitive Guide to Decorative Fruit & Vegetable Carving for All Occasions! . Createspace Independent Pub (18 July 2017)Wallach, C. 1995. Interior Decorating with Plants. Me Millanseed Production Company, Inc., NewYork.
- 5) Lonnie T. Lynch Easy Watermelon Carvings. Createspace Independent Pub (10 January 2012)

09) Value added course on Bonsai Culture and Terrarium**Course Code: HORTI-109****Course coordinator: Kawale M.R. and Chandore H.D.**

Registration Fees: 100 Rs.

Duration of Program: 7 Days (1 Week)

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

1. It will enable students to develop the art of making bonsai
2. It will emphasize skill

Requirement: Charts/ PPT/ Video/ CD/Bonsai Pot/ Bonsai making tools and equipments/ Nursery Visit

Syllabus:

Theory:

- 1) Introduction: History of Bonsai culture and Terrarium, Scope and importance of Bonsai Culture and terrarium, Nomenclature System of Horticulture Crops used in Bonsai. Botanical Classification system.
- 2) Propagation of horticulture Crops Especially for Bonsai Culture and terrarium
- 3) Selection of Plants for Bonsai culture and terrarium
- 4) Types and Classification of the Bonsai- Upright (formal and informal) – Winding – Winding – Oblique – Gnarled – Semi-cascade-cascade – Clasped to stone etc.
- 5) Bonsai System and Techniques
- 6) Selection of Container, tools and accessories for Bonsai and Terrarium
- 7) Principle of Bonsai Culture and Terrarium culture
- 8) Bonsai and terrarium culture soil and climate management
- 9) Bonsai and terrarium management practices and Plant care: Media – Potting and Re-potting – Training – Pruning and Pinching (Shoot, leaf and root) – Watering – manueing – Defoliation –
- 10) Marketing and exhibition of Bonsai Culture and Terrarium

Practical:

- 1) Selection of Plants and planting materials for Bonsai and terrarium
- 2) Identification of tools and equipments for bonsai and terrarium
- 3) Bonsai and Terrarium planting, potting, depotting and repotting
- 4) Bonsai management practices and care techniques
- 5) Terrarium management practices and care techniques
- 6) Bonsai and Terrarium plant protection care and practices
- 7) Preparation of various types of bonsai
- 8) Bonsai and Terrarium exhibition and marketing strategies
- 9) Visit to bonsai and terrarium nursery

Suggested Readings:

- 1) **Dr. N. Mangadevi, Bonsai-Emesco Books publisher**
- 2) **Dey.S.C.- Bosnai : An art of miniature plant culture- Ankur publisher**
- 3) Paul Lesniewicz., 1994. Bonsai in your home. Sterling publishing Co, New York
- 4) मालती नगरकर, विजय नगरकर **बोनसाय वामनवृक्षकला, कॉन्टिनेन्टल प्रकाशन**
- 5) डॉ .ए .बी पाटील . **बोन्साय**

10) Value added course on Fruit and Vegetable Processing**Course Code: HORTI-110****Course coordinator:** Kawale M.R. and Chandore H.D.**Registration Fees:** 100 Rs.**Duration of Program:** 1 Month

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

1. It will enable students to develop the art of preparation of various products
2. It will emphasize skill of small entrepreneurship and enable to start small enterprise

Requirement: Charts/ PPT/ Video/ CD/Bonsai Pot/ Bonsai making tools and equipments/ Nursery Visit

Syllabus:

Theory:

- 1) History of preservation of fruits and vegetables
- 2) Importance and scope of preservation of fruits and vegetables
- 3) Principles of preservation
- 4) Selection of site,
- 5) Methods of preservation-Physical, Chemical, Fermentation, other methods.
- 6) Role of preservatives, fruit color, flavors, chemicals, salt, sugar and vinegar.
- 7) Study of containers for packaging of preserved products- Tin cans, Glass containers, China clay wares and their advantages and disadvantages
- 8) Quality control standards, ISI, food laws, sanitation etc
- 9) Testing of preserved products- quality aspects, color flavor and value addition in fruit products
- 10) Importance of cold storage in preserved vegetable products.
- 11) Packaging, Transportation, and Exportation of preserved products

Practical:

- 1) Canning of fruits and Vegetables
- 2) Drying and Dehydration of fruits and Vegetables
- 3) Preparation of Juice from Fruits and Vegetables, Squash & cordial.
- 4) Preparation of Jam, Jelly and marmalade
- 5) Preparation of pickles from fruits and Vegetables –Preservation with salt, vinegar , oil, mixture of salt, oil, spices and vinegar.
- 6) Preparation of preserve and candy from Fruits and Vegetables
- 7) Preparation of raisin making in grapes
- 8) Preparation of unfermented fruit beverages, juice Ready to serve (RTS), nectar, Fruit juice powder, fruit juice concentrate.
- 9) Preparation and preservation of fermented beverages (Wine making)
- 10) Preparation of some other valuable products from fruits (Mango slices and amchur) , Mango leather, fruit cheese, fruit butter, fruit toffee, papain form papaya
- 11) Preparation of tomato products - Tomato juice , Tomato puree and paste , Tomato sauce and ketchup , Tomato chutney , Tomato soup , Tomato chilli sauce

Preparation of potato products - potato chips/ wafers, Potato flour, Canned potatoes

12) Preparation of chutneys from vegetables

Suggested Readings:

- 1) Post-harvest management of horticultural crops, -Saraswathy S.- Agrobios Publication
- 2) Bhutani RC. 2003. *Fruit and Vegetable Preservation*. Biotech Books.
- 3) Ranganna S. 1997. *Hand Book of Analysis and Quality Control for Fruit and Vegetable Products*. Tata McGraw-Hill
- 4) Fruit and Vegetable Preservation: Principles and Practices” –Dr.R.P. Shrivastava and Dr. Sanjeev Kumar, *IBDC, New Delhi*
- 5) A Hand book on Post Harvest Management of fruits and vegetables: P. Jacob John : Day publishing House Delhi.
- 6) Post harvest Technology of Fruits and Vegetables Handling, Processing, Fermentation and Waste management Vol.1&2 L.R.Verma and V.K.Joshi. Indus publishing company, New Delhi

11) Advanced Diploma Course on Environment Science for Competitive Exam

Course Code: COMP-101

Course coordinator: Chandore H.D. Mukhedkar A.R.

Registration Fees: 100 Rs.

Duration of Program: 7 Days (1 Week)

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

It will enable students for competitive exam such as UPSC, MPSC, and NET, SET

Requirement: Charts/ PPT/ Video/ CD/Bonsai Pot/ Bonsai making tools and equipments/ Nursery Visit

Syllabus:

Theory:

- 1) Ecology- History of ecology ,environment & its components , levels of organization
- 2) Functions of an ecosystem- Energy flow , Food chain, food web, Ecological pyramid, pollutants & trophical level, biotic interaction , bio-geochemical cycle , ecological succession
- 3) Terrestrial ecosystem., tundra, forest ecosystem, Indian forest types, deforestation , grassland ecosystem, desert ecosystem (thar & cold), desertification,.
- 4) Aquatic ecosystem. aquatic organism)- lake ecology , eutrophication, wetland, estuary, mangrove ecosystem., national wetland conservation programme, coral reefs. coral bleaching , initiatives to protect coastal environment .
- 5) Environmental pollution-Air, Soil, Indoor, Oil, Noise, E-Waste , Radioactive, Pollution
- 6) Environmental impact assessment
- 7) biodiversity and their conservation
- 8) Indian biodiversity and their classification - Animal and Plant diversity of india, Marine organism, plankton , sea grass, sea weed
- 9) Protected area network- national initiative, wildlife sanctuary & national parks , conservation reserves & community reserves , costal protected areas, sacred groves of India, export prohibited items ,
- 10) global initiative- man and biosphere , biosphere reserves, national biosphere reserve programme , world network of biosphere reserves, biodiversity hotspots, world heritage sites,
- 11) Conservation efforts,
- 12) project tiger, project elephant, other animal conservation projects
- 13) Climate change- Climate change, Acidification, Ozone hole and Mitigation strategies , India and climate change, Climate change organizations
- 14) Agriculture,
- 15) Acts and policies of environments
- 16) Institution and measures, - Environmental organizations, International environmental conventions. Various organizations

Suggested Readings:

- 1) Environment-Shankar IAS Academy
- 2) IGNOU- Environment Book
- 3) NIOS- Environment Book
- 4) Environment & Ecology - Anil Kumar De
- 5) Environment AR English 2016-2017
- 6) Copy of UGC NET Environmental Sciences Books
- 7) Copy of Botkin Environmental Science Earth as Living Planet 8th txtbk

12) Crash Course on CSAT for Competitive Exam

Course Code: COMP-102

Course coordinator: Chandore H.D., and Rathode E.L

Registration Fees: 100 Rs.

Duration of Program: 1 Month

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

It will enable students for competitive exam such as UPSC, MPSC, and NET, SET

Syllabus:

Theory:

- 1) Syllogism
- 2) Logical connectives
- 3) assumption / inference / conclusion
- 4) casue and effect
- 5) Sitting arrangement
- 6) Time Distance and Work
- 7) Discount and profit
- 8) Share
- 9) Mixture and allegations
- 10) Clock
- 11) Calendar
- 12) Speed and Distance
- 13) Train and boat streams
- 14) Trigonometry
- 15) Simplifications
- 16) Trigonometry
- 17) Pipe and cisterns
- 18) Cube and cuboid
- 19) Area, volume
- 20) Venn diagram
- 21) Percentages
- 22) Missing number pattern
- 23) Series
- 24) Water and mirror image
- 25) Data interpretations- Bar, Line , Pie diagram
- 26) Blood relations
- 27) Verbal reasoning
- 28) Grouping
- 29) Direction test
- 30) Coding decoding
- 31) Mean, Median and mode

- 32) Averages
- 33) Reading comprehension
- 34) Reasoning

Suggested Readings:

- 1) R.S. Agarwal- Quantitative and Qualitative Aptitude
- 2) R. S. Agarwal S. A Modern Approach to Verbal & Non verbal Reasoning Chand & Company Pvt. Ltd.

Course Code: BOT-102

Course coordinator: Kawale M.R. and Chandore H.D.

Registration Fees: 100 Rs.

Duration of Program: 1 Month

Eligibility of candidate: XIIth Pass

Focus on employability/ entrepreneurship:

Skill development:

Requirement: Charts/ PPT/ Video/ CD/Organic Raw materials/vermicompost/ Biofertiliser/ Biopesticide/ Field Visit

Syllabus:

Theory:

Practical:

Suggested Readings: