

DEPARTMENT OF BOTANY

COURSE CURRICULUM & MARKING SCHEME

SKILL ENHANCEMENT COURSE

SESSION : 2024-25



ESTD: 1958

GOVT. V.Y.T. PG AUTONOMOUS COLLEGE, DURG, 491001 (C.G.)

(Former Name – Govt. Arts & Science College, Durg)

NAAC Accredited Grade A⁺, College with CPE - Phase III (UGC), STAR COLLEGE (DBT)

Phone : 0788-2212030

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GOVT. V.Y.T. PG AUTONOMOUS COLLEGE, DURG (CHHATTISGARH)

DEPARTMENT OF BOTANY

Session - 2024-2025

B.Sc. Semester -I (CBCS)

SKILL ENHANCEMENT COURSE (SEC)

ORGANIC FARMING

(Credits 2)

Lectures: 20

Unit-I (4 Lectures)

Introduction to organic farming and its significance.

Concepts and principles of organic farming

Key indicators for organic farming, sustainable agriculture and climate change

Unit- II (4 Lectures)

Input management, Compost production, Vermicomposting, Compost quality

Compost utilization and marketing

Unit-III (4 Lectures)

Organic Crop management: field crops, horticulture and plantation crops.

Plant protection measures, biopesticides, natural predators, cultural practice.

Unit-IV (4 Lectures)

Rotation design for organic system

Transition to organic agriculture

Farming system

Unit-V (4 Lectures)

Quality analysis of organic foods, antioxidants and their natural source, organic food and human health.

Standards of organic food and marketing.



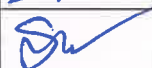
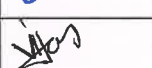








Suggested Reading:

- 1) Reddy S R(2019) Fundamentals of Agronomy Kalyani Publications, Uttar Pradesh
- 2) Tolanur S (2018) Fundamentals of Soil Science IIndEdition , CBS Publishers , New Delhi
- 3) Reddy S R (2017) Principles of Organic Farming Kalyani Publishers , New Delhi
- 4) Dongarjal R.P. and Zade S.B(2019) Insect Ecology and Integrated Pest Management Akinik Publications , New Delhi

Practical:

- 1) Crop planning & management in organic agriculture
- 2) Identification of different fungal and bacterial biocontrol agents
- 3) Application of manures and composts
- 4) Preparation of plant protection inputs Periods

Name and Signatures of Members Board of Studies

S. No.	Category	Name of Nominated Members	Signature
1.	Chairperson	Dr. Ranjana Shrivastava	
2.	Members	1. Dr. G. S. Thakur	
		2. Dr. Shriram Kunjam	
		3. Dr. Satish Kumar Sen	
		4. Dr. Vijay Laxmi Naidu	
		5. Mr. Motiram Sahu	
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5.	Corporate/ Industrial area Representative	Shri Manish Jain (Apollo College, Durg C.G.)	
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B.Sc. Semester -I (CBCS)

SKILL ENHANCEMENT COURSE (SEC)

NURSERY AND GARDENING

(Credits 2)

Lectures: 20

Module 1: (4 Lectures)

Nursery: Definition, objectives and scope and building up of infrastructure for nursery, planning and seasonal activities- planting, direct seedling and transplants.

Module 2: (4 Lectures)

Seed: Structure and types- Seed dormancy; Causes and methods of breaking dormancy- Seed storage: Seed banks, factors affecting seed viability, genetic erosion- Seed production technology- seed testing and certification.

Module 3 (4 Lectures)

Vegetative Propagation: air- layering, cutting, selection of cutting, collection, season, treatment of cutting, rooting medium and planning of cuttings- hardening of plants- green house- mist chamber, shed root, shade house and glass house.

Module 4 (4 Lectures)

Gardening: Definition, objectives and scope- different type of gardening – land scape and home gardening- parks and its components- plant materials and designing- computer application in landscaping- Gardening operation: soil, laying, manuring, watering management of pests and diseases and harvesting.

Module 5 (4 Lectures)

Sowing/raising of seed and seedlings- Transplanting of seedlings- study of cultivation of different vegetables: cabbage, brinjal, ladiesfinger, onion, garlic, Storage and marketing procedure.

Suggested Readings:

1. Bose T.K. and Mukherjee, D. 1972 Gardening in India, Oxford & IBH Publishing Co. New Delhi.
2. Sandhu, M.K., 1989, Plant Propagation, Wile Eastern Ltd., Bangalore, Madras.
3. Kumar, N., 1997, Introduction to Horticulture, Rajlaxmi Publications, Nagercoil.
4. Edmond Musser & Andres, Fundamentals of Horticultures, McGraw Hill Book Co., New Delhi.

5. Agrawal, P.K. 1993 Hand book of seed technology. Deptt. of Agriculture and Co-operation, National Seed Corporation Ltd., New Delhi.
6. Janick Jules. 1979 Horticultural Science (3rd Ed.), W.H. Freeman and Co. San Francisco.

Practical:


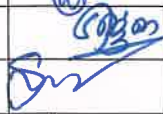
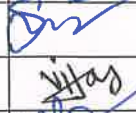



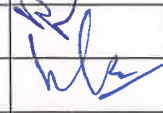
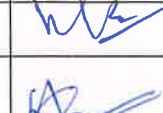


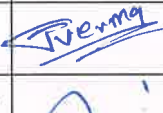

1. Practice of grafting, budding, cutting and layering, anatomical studies of rooting of cuttings and grafting union, planning and layout for commercial nursery,
2. Sample seed testing, use of bioregulators in propagation, sterilization of equipment's and laboratory,
3. Media preparation, selection and preparation of explants, meristem culture and micro grafting, planning and layout of experiments on various aspects of propagation.
4. Visit to tissue culture labs and nurseries.

Course Outcome:

On successful completion of this course, the students will be able to perform soil and plant nutrients management activities, make compost, perform nursery planning and management activities, perform plant protection activities, be familiar with various garden, perform garden development activities, maintain garden and garden plants, propagate plant, arrange and decorate house plants, prepare and maintain lawn, market plants, perform communication and professionalism development activities, and perform entrepreneurship development activities



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		3. Dr. Satish Kumar Sen	
		4. Dr. Vijay Laxmi Naidu	
		5. Mr. Motiram Sahu	
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B.Sc. Semester -I (CBCS)

SKILL ENHANCEMENT COURSE (SEC)

MEDICINAL BOTANY

(Credits 2)

Lectures: 18

Medicinal Plants: History, Scope and Importance of Medicinal Plants. Indigenous Medicinal Sciences; Definition and Scope-Ayurveda, Siddha and Unani: History, origin. **(6 Lectures)**

Propagation of Medicinal Plants: Objectives of the nursery, its classification, important components of a nursery, sowing, pricking, use of green house for nursery production, propagation through cuttings, layering, grafting and budding. **(6 Lectures)**

Ethnobotany: Definition; Ethnobotany in India: Methods to study ethnobotany; Applications of Ethnobotany


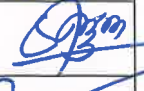
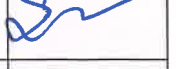






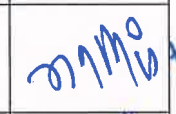

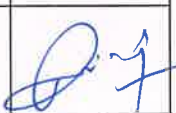
Folk medicines: Folk medicines of ethnobotany, ethnomedicine, ethnoecology, ethnic communities of India. **(6 Lectures)**

Suggested Readings

1. Trivedi P C, 2006. Medicinal Plants: Ethnobotanical Approach, Agrobios, India.
2. Purohit and Vyas, 2008. Medicinal Plant Cultivation: A Scientific Approach, 2nd edn.- Agrobios, India.



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MUSHROOM CULTURE TECHNOLOGY

(Credits 2)

Lectures: 18

Mushroom: Introduction, History, Nutritional and medicinal value of edible mushrooms; Poisonous mushrooms. Types of edible mushrooms available in India – *Volvariella volvacea*, *Pleurotus citrinopileatus*, *Agaricus bisporus*. (6 Lectures)

Cultivation Technology: Infrastructure: substrates (locally available) Polythene bag, vessels, Inoculation hook, inoculation loop, low-cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag. (6 Lectures)




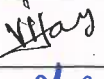


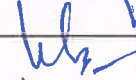



Pure Culture Techniques: Medium, Sterilization, preparation of spawn, multiplication. Mushroom bed preparation - paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation - Low-cost technology, Composting technology in mushroom production. (6 Lectures)

Suggested Readings

1. Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991).
2. Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.
3. Swaminathan, M. (1990) Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.
4. Tewari, Pankaj Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications, Delhi.
5. Nita Bahl (1984-1988) Hand book of Mushrooms, II Edition, Vol. I & Vol. II.



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