

Board of Studies of Department of Horticulture

Virtual meeting for Board of studies of Department of Horticulture, C.S.J.M. University, Kanpur was held on 14 May, 2021 at 3:00 PM to 4:00 PM to discuss the syllabus for Horticulture as per National Education Policy-2020 (NEP-2020) for the Courses of B. Sc. (Hons.) Agriculture.

Honorable Members of the Virtual meeting attended.

1. Prof. Nand Lal, University Representative, Department of Life Science, C.S.J.M.U., Kanpur
2. Dr. P. N. Katiyar, Retd. Department of Horticulture, CSAUAT, Kanpur
3. Dr. A. K. Pandey, Associate Prof, Department of Horticulture, Janta College, Bakewar, Etawah
4. Dr. M. P. Yadav, Associate Prof., Department of Horticulture, Janta College, Bakewar, Etawah
(Subject Convenor / Dean, Agriculture Faculty, CSJMU, Kanpur)

The following suggestions/ Recommendations are offered by honorable members in the virtual meeting.

1. The Sequence of course according to the order of semester.
2. Honorable members suggested adding reading books for each paper of Horticulture .
3. All the members suggested that no change should be made in the syllabus.

Therefore, I am sending this file for approval after mentioning the valuable suggestions offered by all the above. Kindly approve it.



Dr. M.P. Yadav

Dean/ Convenor

CSJM University Kanpur

NEW SYLLABUS AS NEP 2020 (NEW AND RESTRUCTURED) UNDER GRADUATE CURRICULA & SYLLABUS B.Sc. (Hons.) Agriculture 2020

Semester System as per ICAR Vth Deans Committee Report

Name	Designation	Affiliation
SAC (Hons.) Committee Mrs. Monika S. Garg, (I.A.S.) Chairperson Steering Committee	Additional Chief Secretary	Dept. of Higher Education U.P., Lucknow
Prof. Poonam Tandon	Professor, Dept. of Physics	Lucknow University, U.P.
Prof. Hare Krishna	Professor, Dept. of Statistics	CCS University Meerut, U.P.
Dr. Dinesh C. Sharma	Associate Professor, Dept. of Zoology	K.M. Govt. Girls P.G. College Badalpur, G.B. Nagar, U.P.
SUPERVISORY COMMITTEE-Science Faculty		
Dr. Vijay Kumar Singh	Associate Professor, Dept. of Zoology	Agra College, Agra
Dr. Santosh Singh	Dean, Dept. of Agriculture	Mahatma Gandhi Kashi Vidhyapeeth, Varanasi
Dr. Babu Tabussam	Associate Professor, Dept. of Zoology	Govt. Raza P.G. College Rampur, U.P.
Dr. Sangay Jain	Associate Professor, Dept. of Statistics	St. John's College, Agra

Syllabus Developed by

S.No.	Name	Designation	Department	College/University
1.	Dr. Santosh Singh	Dean	Agriculture	Mahatma Gandhi Kashi Vidhyapeeth, Varanasi
2.	Dr. Sant Bahadur Singh	Associate Professor	Agronomy	R.B.S. College, Agra
3.	Dr. Lavman Singh	Associate Professor	A.H. and Dairying	R.B.S. College, Agra

T.K. Guleri

Department of Horticulture

S.N.	Course Code	Course Title	Credit Hours
1	AG-104	Fundamental of Horticulture (New)	2(1+1)
2	AG-207	Production Technology for Vegetable and Spices	2(1+1)
3	AG-407	Production Technology for Ornamental Crops, MAPs and Landscaping	2(1+1)
4	AG-507	Production Technology for Fruit and Plantation Crops	2(1+1)
5	AG-606	Post-harvest Management and Value Addition of Fruits and Vegetables	2(1+1)
Total Credit			10

1. Fundamentals of Horticulture (NEW) AG-104 2(1+1)

Theory

Horticulture - Its definition and branches, importance and scope; horticultural and botanical classification; climate and soil for horticultural crops; Plant propagation-methods and propagating structures; principles of orchard establishment; Principles and methods of training and pruning, juvenility and flower bud differentiation; unfruitfulness; pollination, pollinizers and pollinators; fertilization and parthenocarpy; use of plant bio-regulators in horticulture, irrigation and fertilizers applications - method and quality.

Practical

Identification of garden tools. Identification of horticultural crops. Preparation of seed bed/nursery bed. Practice of sexual and sexual methods of propagation Layout and planting or orchard plants. Training and pruning of fruit trees transplanting and care of vegetable seedlings making of herbaceous and shrubby borders. Preparation of potting mixture potting and repotting. Fertilizer application in different crops. Visits to commercial nurseries/orchards.

Suggested Reading Books

- Fundamentals of Horticulture. Chris Bird. Royal Horticultural Society
- Fundamentals of Horticulture. Jitendra Singh. Kalyani Publication, New Delhi
- Fundamentals of Horticulture. Prashnat Bakshi, Kiran Kumar and Amit Jasrotia.



- Basic Horticulture. Jitendra Singh. Kalyani Publication. New Delhi
- Introduction to Horticulture. PS Arora. Medtee Publication, New Delhi
- Handbook of Horticulture. KL Chaddha, ICAR Publication

2. Production Technology for Vegetable and Spices AG-207 2(1+1)

Theory

Importance of vegetables & spices in human nutrition and national economy, types of vegetable gardening brief about origin, area, production improved varieties and cultivation practices such as time of sowing, transplanting techniques, planting distance, fertilizer requirements, irrigation, weed management, harvesting storage, physiological disorders, disease and seed production of important vegetable (potato, tomato, cauliflower, onion, okra, bottle gourd and bitter gourd) and spices i.e. condiments, Ginger, turmeric, coriander, cumin, funnel, black pepper, ilaichi.

Practical

Identification of vegetables & spice crops and their seeds. Nursery raising. Direct seed sowing and transplanting. Study of morphological characters of different vegetables & spices. Fertilizers applications raising of nursery of vegetable & spices, vegetable and spices seed extraction. Harvesting & preparation for market. Economics of vegetables and spices cultivation.

Suggested Reading Books

- Handbook of Horticulture. KL Chaddha, ICAR Publication
- Fruit Growing. JS Bal. Kalyani Publication, New Delhi
- Fruit: Tropical and Subtropical. TK bose, Naya Prakash, Calcutta
- A Textbook of Pomology TK Chattopadhyaya Vol.1-4. Kalyani Publication, New Delhi
- Fundamentals of fruit Production. K.G. Shanmugavele. SBA Publication, Calcutta. 3.

3. Production Technology for Ornamental Crops, MAPs and Landscaping AG-407 2(1+1)

Theory

Importance and scope of ornamental crops, medicinal and aromatic plants and landscaping. Principles of landscaping. Landscape uses of trees, shrubs and climbers. Style of gardening and lawn making and maintenance. Production technology of important cut flowers like rose, gerbera, carnation, liliun and orchids under protected conditions and gladiolus, tuberose, chrysanthemum under open conditions. Package of practices for loose flowers like marigold and jasmine under open conditions. Production technology of important Medicinal Plant likes- Isabgol, Ashwagandha, Asparagus, Aloe and aromatic plants like mint, lemongrass, citronella, palmarosa, ocimum, geranium, vetiver. Processing and Value addition in ornamental crops and MAPs produce.

Practical

Identification of Ornamental plants. Identification of Medicinal and Aromatic Plants. Nursery bed preparation and seed sowing. Training and pruning of Ornamental plants. Planning and layout of garden. Bed preparation and planting of MAP. Protected structures - care and maintenance. Intercultural operations in flowers and MAP. Harvesting and post harvest handling of cut and loose flowers extraction of essential oils.

Suggested Reading Books

- Vegetable Crops. TK Bose., Naya Prakash, Calcutta
- Handbook of Horticulture. KL Chaddha, ICAR Publication, New Delhi • Basic Concept of Vegetable Science. NP Singh. IBDC, Lucknow
- Vegetables by B. Chaudhary. NBT of India, New Delhi
- Production Technology of Vegetables and Spices (Hindi). RK Shukla, AK Pandey and VK Tripathi. Kalyani Publication. New Delhi

4. Production Technology for Fruit and Plantation Crops AG-507 2(1+1)

Theory

Importance and scope of fruit and plantation crop industry in India; High density planting; Use of rootstocks; Production technologies for the cultivation of major fruits mango, banana, citrus, grape, guava, Litchi, papaya, apple, pear, peach and; minor fruits pineapple, pomegranate, jackfruit, strawberry, nut crops; plantation crops-coconut, arecanut, cashew, tea, coffee & rubber.

Practical

Seed propagation. Scarification and stratification of seeds. Propagation methods for fruit and plantation crops. Including micro-propagation. Description and identification of fruit. Preparation of plant bio regulators and their uses, pests, diseases and physiological disorders of above fruit and plantation crops, Visit to commercial orchards.

Suggested Reading Books

- Introductory Ornamental Horticulture. JS Arora. Kalyani Publication. New Delhi • Text Book on Floriculture and Landscaping. N Roy Chaudhary and HP Mishra. Syamal Ghosh Publication, Belgharia (W.B.)
- Handbook of Horticulture. KL Chaddha. ICAR Publication, New Delhi • Floriculture in India. GS Randhawa and A Mukhopadhyay. Oxford Publication, New Delhi
- Floriculture and Landscaping. E Satyanarayana. Jain Brothers, New Delhi

5. Management and Value Addition of Fruits and Vegetables AG- 606 2(1+1) Theory

Importance of Post Harvest Technology of fruits, vegetables and Ornamentals crops. extent and

possible causes of post harvest losses; Pre-harvest factors affecting postharvest quality, maturity and Self life of fruits, vegetables and ornamentals crops. Ripening and changes occurring during ripening; Respiration and factors affecting respiration rate; role of ethylene; post harvest disease and disorders; heat, chilling and freezing injury; harvesting and field handling; Storage (ZECC, cold storage, CA, MA and hypobaric); Value addition concept; Principles and methods of preservation; Intermediate moisture food- Jam, jelly, marmalade, preserve, candy - Concepts and Standards; Fermented and non-fermented beverages. Tomato products- Concepts and Standards; Drying/ Dehydration of fruits and vegetables-Concept and methods, osmotic drying. Canning—Concepts and Standards, packaging of products.

Practical: Applications of different types of packaging, containers for shelf life extension. Effect of temperature on shelf life and quality of produce. Demonstration of chilling and freezing injury in vegetables and fruits. Extraction and preservation of pulps and juices. Preparation of jam, jelly, RTS, nectar, squash, osmotically dried products, fruit bar and candy and tomato products, canned products. Quality evaluation of products — physico-chemical and sensory. Visit to processing unit/industry.

Suggested Reading Books

- Preservation of Fruit and Vegetables. Lal G., Sidhappa GS and Tandon GL. ICAR Publication, New Delhi
- Fruit and Vegetables Preservation – Principles and practices. RP Srivastava and Sanjeev Kumar. IBDC, Lucknow
- Post Harvest Physiology, Handling and Utilization of Subtropical Fruits and Vegetables. EB Pantastico, AVI Pub. Co. INC- West Port. Connecticut
- Preservation of Fruit and Vegetables(Hindi). DS Khurdia. ICAR Publication, New Delhi

