

॥ सा विद्या या विमुक्तये ॥



स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड

“ज्ञानतीर्थ” परिसर, विष्णुपुरी, नांदेड - ४३१६०६ (महाराष्ट्र)

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY NANDED

“Dnyanteerth”, Vishnupuri, Nanded - 431606 Maharashtra State (INDIA)

Established on 17th September 1994 – Recognized by the UGC U/s 2(f) and 12(B), NAAC Re-accredited with 'A' Grade



ACADEMIC (1-BOARD OF STUDIES) SECTION

Phone: (02462) 229542

Website: www.srtmun.ac.in

E-mail: bos.srtmun@gmail.com

Fax : (02462) 229574

संलग्नित महाविद्यालयांतील विज्ञान व तंत्रज्ञान विद्याशाखेतील पदवी स्तरावरील प्रथम वर्षाचे CBCS Pattern नुसारचे अभ्यासक्रम शैक्षणिक वर्ष २०१९-२० पासून लागू करण्याबाबत.

प रि प त्र क

या परिपत्रकान्वये सर्व संबंधितांना कळविण्यात येते की, दिनांक ०८ जून २०१९ रोजी संपन्न झालेल्या ४४व्या मा. विद्या परिषद बैठकीतील ऐनवेळचा विषय क्र.११/४४-२०१९ च्या ठरावानुसार प्रस्तुत विद्यापीठाच्या संलग्नित महाविद्यालयांतील विज्ञान व तंत्रज्ञान विद्याशाखेतील पदवी स्तरावरील प्रथम वर्षाचे खालील विषयांचे C.B.C.S. (Choice Based Credit System) Pattern नुसारचे अभ्यासक्रम शैक्षणिक वर्ष २०१९-२० पासून लागू करण्यात येत आहेत.

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|---|---------------------------------------|
| 1. Agricultural Microbiology | 18. Dyes and Drugs |
| 2. Agrochemicals & Fertilizers | 19. Electronics |
| 3. Analytical Chemistry | 20. Environmental Science |
| 4. B.C.A. | 21. Fishery Science |
| 5. B.Voc. (Food Processing, Preservation and Storage) | 22. Food Science |
| 6. B.Voc. (Web Printing Technology) | 23. Geology |
| 7. Biochemistry | 24. Horticulture |
| 8. Bioinformatics | 25. Industrial Chemistry |
| 9. Biophysics | 26. Information Technology (Optional) |
| 10. Biotechnology (Vocational) | 27. Mathematics |
| 11. Biotechnonology | 28. Microbiology |
| 12. Botany | 29. Network Technology |
| 13. Chemistry | 30. Physics |
| 14. Computer Application (Optional) | 31. Software Engineering |
| 15. Computer Science (Optional) | 32. Statistics |
| 16. Computer Science | 33. Zoology |
| 17. Dairy Science | |

सदरील परिपत्रक व अभ्यासक्रम प्रस्तुत विद्यापीठाच्या www.srtmun.ac.in या संकेतस्थळावर उपलब्ध आहेत. तरी सदरील बाब ही सर्व संबंधितांच्या निदर्शनास आणून द्यावी.

‘ज्ञानतीर्थ’ परिसर,
विष्णुपुरी, नांदेड - ४३१ ६०६.
जा.क्र.: शैक्षणिक-०१/परिपत्रक/पदवी-सीबीसीएस अभ्यासक्रम/
२०१९-२०/२९२

दिनांक : ०३.०७.२०१९.

प्रत माहिती व पुढील कार्यवाहीस्तव :

- १) मा. कुलसचिव यांचे कार्यालय, प्रस्तुत विद्यापीठ.
- २) मा. संचालक, परीक्षा व मूल्यमापन मंडळ यांचे कार्यालय, प्रस्तुत विद्यापीठ.
- ३) प्राचार्य, सर्व संबंधित संलग्नित महाविद्यालये, प्रस्तुत विद्यापीठ.
- ४) साहाय्यक कुलसचिव, पदव्युत्तर विभाग, प्रस्तुत विद्यापीठ.
- ५) उपकुलसचिव, पात्रता विभाग, प्रस्तुत विद्यापीठ.
- ६) सिस्टम एक्सपर्ट, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ.

स्वाक्षरित / -

उपकुलसचिव

शैक्षणिक (१-अभ्यासमंडळ) विभाग



SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

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Faculty of Science & Technology
Under Graduate (UG) Program

B. Sc. FIRST YEAR

SUBJECT: HORTICULTURE

SYLLABUS FOR CCH-I&II

(SEMESTER-I&II)

2019-2020



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INTRODUCTION:

The SRTMUN is gearing up for several initiatives towards academic excellence, quality improvement and administrative reforms. In view of this priority and in-keeping with Vision and Mission; process was already initiated towards introduction of semester system, grading system and credit system. In the recent past, University had already implemented Credit based grading system to campus schools and Choice Based Credit System (CBCS) pattern for PG in all the affiliated colleges from the academic year **2014-2015**. These regulations shall be called as Choice Based Course Credit System & Grading, 2014. In short it will be referred as **SRTMUN CBCS REGULATION**. Similarly university had implemented Choice Based Credit System (CBCS) pattern at UG level from the academic year **2016-2017 progressively** (for B.Sc. first year from 2016-2017, for B.Sc. second year form 2017-2018 and for B.Sc. third year from 2018-2019 respectively).

Revision and updating of the curriculum is the continuous process to provide an updated education to the students at large. In view of this priority and in-keeping with Vision and Mission, process of revision and updating the curriculum is initiated and implemented at UG level from the academic year **2019-2020 progressively** (for B.Sc. first year from **2019-2020**, for B.Sc. second year form **2020-2021** and for B.Sc. third year from **2021-2022** respectively). Presently there is wide diversity in the curriculum of different Indian Universities which inhibited mobility of students in other universities or states. To ensure and have uniform curriculum at UG and PG levels as per the **SRTMUN CBCS REGULATION**, curriculum of different Indian Universities, syllabus of NET, SET, MPSC, UPSC, Forest Services and the UGC model curriculum are referred to serve as a base in updating the same.

The B.Sc. Horticulture (General) semester pattern course is running in different affiliated colleges of the SRTMUN. The course content has been designed under CBCS pattern. The course content of each theory paper is divided into units by giving appropriate titles and subtitles. For each unit, total number of periods required is mentioned. A list of practical exercises and skills for laboratory work to be completed in the academic year is also given. A common skeleton question paper for all the courses is also provided at the end of the syllabus.

SALIENT FEATURES:

The syllabus of B Sc I year Horticulture has been framed to meet the requirement of Choice based Credit System. The courses offered here in will train and orient the students in the field of Horticulture. The Section-A of CCH-I&II deals with fundamentals of Horticulture and production technology of tropical and subtropical fruit crops. The Section-B of CCH-I&II deals with propagation, nursery management and production technology of arid, minor and plantation crops. This would help students to lay a strong foundation in the field of Horticulture. Overall after completion of this course, students will also acquire fundamental knowledge in Horticultural science and also understand that Horticulture is an integral part of the human life and developments. CCHP-I Courses based on theory papers of CCH-I&II offered during this program is designed with the aim of imparting specific practical knowledge to the students which will lead to the self employability through development of their own enterprises.

UTILITY OF COURSE:

This program will train and orient the students in the field of Horticulture and Agriculture. This will help the students for their career development. Practical Courses offered during this program will provide additional specific knowledge to the students for self employability through the development of their own enterprises.

LEARNING OBJECTIVES:

1. To provide an updated education to the students at large in order to know the importance and scope of the discipline and to provide mobility to students from one university or state to other.
2. To update curriculum by introducing recent advances in the subject and enable the students to face NET, SET, UPSC and other competitive examinations successfully.
3. To impart knowledge of Horticultural science as the basic objective of Education
4. To develop a scientific attitude to make students open minded, critical and curious



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5. To develop an ability to work on their own and to make them fit for the society
6. To expose themselves to the diversity amongst life forms
7. To develop skill in practical work, experiments, equipments and laboratory use along with collection and interpretation of Horticultural plant materials and data
8. To make aware of natural resources and environment and the importance of conserving the same
9. To develop ability for the application of the acquired knowledge in the fields of life so as to make our country self reliant and self sufficient
10. To appreciate and apply ethical principles to Horticultural science research and studies

PREREQUISITE:

The optional courses are offered to the students registered for undergraduate programs. Such students should have the basic knowledge of Horticultural science and willing to gain additional knowledge in the field of Horticulture. Admissions to this course are given as per the University rules.



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SUBJECT: HORTICULTURE

Class–B. Sc. First year: An outline (w.e.f. Academic year 2019-2020)

Semester/ Annual	Course Code	Course Name	Instruction Hrs / week	Total Periods	Marks for		Credits (Marks)
					Internal (CA)	External (ESE)	
Semester-I	CCH-I	CCH-I (Section-A): Fundamentals of Horticulture (Theory Paper-I)	03	45	10	40	Credits: 02 (Marks:50)
		CCH-I (Section-B): Propagation and nursery management (Theory Paper-II)	03	45	10	40	Credits: 02 (Marks:50)
Semester-II	CCH-II	CCH-II (Section-A): Production technology of tropical and sub tropical fruit crops (Theory Paper-III)	03	45	10	40	Credits: 02 (Marks:50)
		CCH-II (Section-B): Production technology of arid, minor and plantation crops (Theory Paper-IV)	03	45	10	40	Credits: 02 (Marks:50)
Annual Pattern	CCHP-I	CCHP-I: Practicals based on theory papers of CCH-I&II (Practical Paper-V)	03	24 Practicals/ Batch/year	20	80	Credits: 04 Marks:100)
Total Marks &Credits Semester-I and II					Marks: 60	Marks: 240	Credits:12 Marks:300

CCH: Core Course Horticulture, **CCHP:** Core Course Horticulture Practical, **ESE:** End of semester examination,

CA: Continuous Assessment

Distribution of credits: 80% of the total credits for ESE and 20% for CA

- **CA of 10 Marks:** 05 marks for Test and 05 marks for home assignment
- **CA of 20 Marks:** 10 marks for test & 10 marks for Record book and excursion report



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SUBJECT: HORTICULTURE

Class-B. Sc. Second year: An outline (w.e.f. Academic year 2020-2021)

Semester/ Annual	Course Code	Course Name	Instruction Hrs/week	Total Periods	Marks for		Credits (Marks)
					Internal (CA)	External (ESE)	
Semester-III	CCH-III	CCH-III (Section-A): Production Technology of Vegetable Crops-I (Theory Paper-VI)	03	45	10	40	Credits: 02 (Marks:50)
		CCH-III (Section-B): Ornamental and Landscape Gardening (Theory Paper-VII)	03	45	10	40	Credits: 02 (Marks:50)
Semester-IV	CCH-IV	CCH-IV (Section-A): Production Technology of Vegetable Crops-II (Theory Paper-VIII)	03	45	10	40	Credits: 02 (Marks:50)
		CCH-IV (Section-B): Commercial Floriculture (Theory Paper-IX)	03	45	10	40	Credits: 02 (Marks:50)
Annual Pattern	CCHP-II	CCHP-II: Practicals based on theory papers of Section-A of CCH-III&IV (Practical Paper-X)	03	16 Practicals/ Batch/ Year	10	40	Credits: 02 (Marks:50)
	SECH-I	SECH-IA: Green house (protected cultivation of plants-plasticulture) OR SECH-IB: Orchard layout and planting skill	03	45 (Theory periods- 21/Year, Practicals- 08/year)	25	25	Credits: 02 (Marks:50)
Annual Pattern	CCHP-III	CCHP-III: Practicals based on theory papers of Section-B of CCH-III&IV (Practical Paper-XI)	03	16 Practicals/ Batch/ Year	10	40	Credits: 02 (Marks:50)
	SECH-II	SECH-IIA: Nursery establishment skill OR SECH-IIB: Fruit and vegetable preservation skill	03	45 (Theory periods- 21/Year, Practicals- 08/year)	25	25	Credits: 02 (Marks:50)
Total Marks and Credits Semester-III & IV					Marks: 110	Marks: 290	Credits: 16 Marks:400

CCH: Core Course Horticulture, **CCHP:** Core Course Horticulture Practical, **ESE:** End of semester examination, **CA:** Continuous Assessment, **SECH:** Skill Enhancement Course Horticulture, **Distribution of credits:** 80% of the total credits for ESE and 20% for CA
CA of 10 Marks (Theory): 05 marks for Test and 05 marks for home assignment, **CA of 10 Marks (Practical):** 05 marks for test & 05 marks for Record book and excursion report, **CA of Marks 25:** 15 marks for Seminar & 10 marks for Test



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SUBJECT: HORTICULTURE

Class –B. Sc. Third year: An outline (w.e.f. Academic year 2021-2022)

Semester/ Annual	Course Code	Course Name	Instruction Hrs/week	Total Periods	Marks for		Credits (Marks)
					Internal (CA)	External (ESE)	
Semester-V	DSEH-I	DSEH-I(Section-A): Production Technology of Spices and Condiment Crops (Theory Paper-XII)	03	45	10	40	Credits: 02 (Marks:50)
		DSEH-I(Section-B): Post Harvest and Handling of Horticultural Crops (Theory Paper-XIII)	03	45	10	40	Credits: 02 (Marks:50)
Semester-VI	DSEH-II	DSEH-II(Section-A): Production Technology of Medicinal and Aromatic Plants (Theory Paper-XIV)	03	45	10	40	Credits: 02 (Marks:50)
		DSEH-II(Section-B): Processing and Preservation Technology (Theory Paper-XV)	03	45	10	40	Credits: 02 (Marks:50)
Annual Pattern	DSEHP-I	DSEHP-I: Practicals based on section-A of DSEH-I&II (Practical Paper-XVI)	03	16 Practicals/ Batch/ Year	10	40	Credits: 02 (Marks:50)
	SECH-III	SECH-III A: Medicinal plants OR SECH-III B: Biocontrol	03	45 (Theory periods- 21/Year, Practicals- 08/year)	25	25	Credits: 02 (Marks:50)
Annual Pattern	DSEHP-II	DSEHP-II: Practicals based on section-B of DSEH-I&II (Practical Paper-XVII)	03	16 Practicals/ Batch/ Year	10	40	Credits: 02 (Marks:50)
	SECH-IV	SECH-IV A: Vermicompost OR SECH-IV B: Irrigation systems	03	45 (Theory periods- 21/Year, Practicals- 08/year)	25	25	Credits: 02 (Marks:50)
Total Marks & Credits Semester-V and VI					Marks: 110	Marks: 290	Credits: 16 Marks:400

DSEH: Discipline Specific Elective Horticulture, **DSEHP:** Discipline Specific Elective Horticulture Practical, **ESE:** End of semester examination, **CA:** Continuous Assessment, **SECH:** Skill Enhancement Course Horticulture,

Distribution of credits: 80% of the total credits for ESE and 20% for CA,

CA of 10 Marks (Theory): 05 marks for Test and 05 marks for home assignment, **CA of 10 Marks (Practical):** 05 marks for test & 05 marks for Record book and excursion report, **CA of Marks 25:** 15 for marks Seminar & 10 marks for Test



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B. Sc. FIRST YEAR

SUBJECT: HORTICULTURE

SEMESTER-I

COURSE CODE: CCH-I

CCH-I (SECTION-A): FUNDAMENTALS OF HORTICULTURE

(THEORY PAPER-I)

Periods: 45

Credits: 02 (Maximum Marks: 50)

LEARNING OBJECTIVES:

1. To study and impart knowledge about the fundamentals of horticulture
2. To study and impart knowledge about principles, management and applied horticulture

LEARNING OUTCOMES:

1. Students would be able to understand fundamental knowledge of horticulture
2. Student would be able to understand the principles, management and applied horticulture

UNIT-I: INTRODUCTION (10 PERIODS)

Definition, branches, scope and economic importance of horticulture, Nutritive value of fruits and vegetables, Classification of horticultural crops based on climatic requirement, growth season and plant parts used for consumption, Botanical classification of horticultural crops, Horticultural zones of India and Maharashtra

UNIT-II: PRINCIPLES OF HORTICULTURE (13 PERIODS)

Soil and climatic requirements of horticultural crops; Selection of site for establishment of an orchard, Planning layout and planting of an orchard; Bearing habit, fruit bud differentiation, flower and fruit drop; Training and pruning; Fruitfulness and unfruitfulness; Cropping system

UNIT-III: MANAGEMENT HORTICULTURE (12 PERIODS)

Orchard management; Nutrition management; Water management; Weed management; Plant protection

UNIT-IV: APPLIED HORTICULTURE (10 PERIODS)

Study of plant growth regulators (Mechanism of action and biological effect): Auxins, Gibberellins, Cytokinins, Ethylene, **Special horticultural practices:** Bhar treatment, girdling, notching, ringing and blending in fruit crops; Earthing up, staking and blanching in vegetable crops; Pinching, disbudding and deshooting in flowering crops



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SUBJECT: HORTICULTURE

SEMESTER-I

COURSE CODE: CCH-I

CCH-I (SECTION-B): PROPAGATION AND NURSERY MANAGEMENT

(THEORY PAPER-II)

Periods: 45

Credits: 02 (Maximum Marks: 50)

LEARNING OBJECTIVES:

1. To study and impart knowledge about the propagation of horticultural crops
2. To study and impart knowledge about common and separate origin methods of propagation
3. To study and impart knowledge about nursery management

LEARNING OUTCOMES:

1. Students would be able to understand propagation in horticultural crops
2. Student would be able to understand nursery management

UNIT-I: PROPAGATION (13 PERIODS)

Basic concepts and types of plant propagation with merits and demerits, Seed treatment, seed germination and seed dormancy, Polyembryony and apomixes, Stock – scion relationship, factors affecting budding and grafting

UNIT-II: COMMON ORIGIN METHODS OF PROPAGATION (12 PERIODS)

Cutting: Root, stem and leaf cutting propagation, **Layering:** Simple, air and mound layering propagation, Special structures: Propagation by bulbs, tubers and rhizomes

UNIT-III: SEPARATE ORIGIN METHODS OF PROPAGATION (10 PERIODS)

Budding: Shield, patch and ring budding, **Grafting:** Simple, tongue and veneer grafting

UNIT-IV: NURSERY MANAGEMENT (10 PERIODS)

Definition, importance, scope and types of nursery, Site selection and layout of nursery, Media containers and propagation structures, Aftercare of nursery, Nursery Act



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SUBJECT: HORTICULTURE

SEMESTER-II

COURSE CODE: CCH-II

CCH-II (SECTION-A): PRODUCTION TECHNOLOGY OF TROPICAL AND SUBTROPICAL FRUIT CROPS

(THEORY PAPER-III)

Periods: 45

Credits: 02 (Maximum Marks: 50)

LEARNING OBJECTIVES:

1. To study and impart knowledge about the cultivation of tropical and subtropical fruit crops
2. To study and impart knowledge about fruit physiology

LEARNING OUTCOMES:

1. Students would be able to understand fundamental knowledge of cultivation of tropical and subtropical fruit crops
2. Student would be able to understand fruit physiology

UNIT-I: INTRODUCTION TO TROPICAL AND SUBTROPICAL FRUIT CROPS (10 PERIODS)

Importance of tropical and subtropical fruit growing in India and Maharashtra, Nutritive value of fruits, Area under cultivation and fruit production in India and Maharashtra, Export and import of fruits in India, Constraints in fruit production, Remedies to overcome the constraints

UNIT-II: CULTIVATION PRACTICES OF TROPICAL FRUIT CROPS (13 PERIODS)

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of tropical fruit crops with reference to Banana, Guava, Papaya and Sapota

UNIT-III: CULTIVATION PRACTICES OF SUBTROPICAL FRUIT CROPS (12 PERIODS)

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of subtropical fruit crops with reference to Sweet orange (Mosambi), Mandarin (Santra), Lemon (Kagdi limbo), Mango, Pomegranate and Grape vines

UNIT-IV: FRUIT PHYSIOLOGY (10 PERIODS)

Study of major physiological disorders: Alternate bearing and spongy tissues in mango, Granulation and gummosis in citrus, Bareness in grapes, Fruit cracking in pomegranate



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B. Sc. FIRST YEAR

SUBJECT: HORTICULTURE

SEMESTER-II

COURSE CODE: CCH-II

**CCH-II (SECTION-B): PRODUCTION TECHNOLOGY OF ARID, MINOR AND PLANTATION CROPS
(THEORY PAPER-IV)**

Periods: 45

Credits: 02 (Maximum Marks: 50)

LEARNING OBJECTIVES:

1. To study and impart knowledge about the cultivation of arid, minor and plantation fruit crops

LEARNING OUTCOMES:

1. Students would be able to understand fundamental knowledge of cultivation of arid, minor and plantation fruit crops fruit crops

UNIT-I: INTRODUCTION TO ARID, MINOR AND PLANTATION FRUIT CROPS (10 PERIODS)

Importance of arid, minor and plantation fruit growing in India and Maharashtra, Nutritive value of fruits, Area under cultivation and fruit production in India and Maharashtra, Export and import in India, Constraints in production, remedies to overcome the constraints

UNIT-II: CULTIVATION PRACTICES OF ARID FRUIT CROPS (13 PERIODS)

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of tropical fruit crops with reference to Awala, Ber, Custard apple, Fig and tamarind

UNIT-III: CULTIVATION PRACTICES OF MINOR FRUIT CROPS (12 PERIODS)

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of arid fruit crops with reference to Jamun, Bel and Kawat (wood apple)

UNIT-IV: CULTIVATION PRACTICES OF PLANTATION FRUIT CROPS (12 PERIODS)

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of arid fruit crops with reference to Coconut, Cashewnut, Tea and Coffee



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SUBJECT: HORTICULTURE

ANUAL PATTERN

COURSE CODE: CCHP-I

CCHP-I: PRACTICALS BASED ON CCH-I&II

(PRACTICAL PAPER-V)

Practicals: 24

Credits: 04 (Maximum Marks:100)

PRACTICAL EXERCISES:

1. Introduction to fruit crops
2. Study of garden tools and implements
3. Study of different media, containers, potting and repotting
4. Preparation of nursery beds and raising of seedlings
5. Layout of square system of planting
6. Layout of diagonal system of planting
7. Layout of rectangular system of planting
8. Layout of hexagonal system of planting
9. Layout of triangular system of planting
10. Study of different methods of propagation by cutting
11. Study of different methods of propagation by layering
12. Study of different methods of propagation by budding
13. Study of different methods of propagation by grafting
14. Study of different methods of training
15. Study of different methods of pruning
16. Study of application of plant growth regulators
17. Study of application of manure and fertilizers
18. Study of methods of irrigation
19. Study of special horticultural practices
20. Study of important diseases and pests of horticultural crops
21. Visit to nursery unit
22. Visit to commercial orchards
23. Visit to fruit market
24. Visit to vegetable and flower market

Note: Student should submit record book and excursion report at the time of practical examination. The record book and excursion report shall carry marks



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**SEMESTER PATTERN CURRICULUM UNDER
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Faculty of Science & Technology
Under Graduate (UG) Program

B. Sc. FIRST YEAR

SUBJECT: HORTICULTURE

CCH-I & II

END OF SEMESTER EXAMINATION (ESE)

Skeleton question paper

Maximum Marks: 40

Note: (i) *Attempt all questions*
(ii) *Draw neat and well labelled diagrams wherever necessary*

Q1. Long Answer Type Question (LATQ) 15 Marks

OR

a. Short Answer Type Question (SATQ) 08 Marks

b. Short Answer Type Question (SATQ) 07 Marks

(Based on Unit-I & II)

Q2. Long Answer Type Question (LATQ) 15 Marks

OR

a. Short Answer Type Question (SATQ) 08 Marks

b. Short Answer Type Question (SATQ) 07 Marks

(Based on Unit-III & IV)

Q3. Write short notes on any two of the following 10 Marks

OR

a. Short Note Type Question (SNTQ) 05 Marks

b. Short Note Type Question (SNTQ) 05 Marks

c. Short Note Type Question (SNTQ) 05 Marks

d. Short Note Type Question (SNTQ) 05 Marks

(Based on all Units)



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B. Sc. FIRST YEAR

SUBJECT: HORTICULTURE

ANNUAL PATTERN

CORE COURSE HORTICULTURE PRACTICAL (CCHP)-I

(PRACTICAL PAPER-V: BASED ON THEORY PAPER-I, II, III&IV)

END OF SEMESTER EXAMINATION (ESE)

Skeleton question paper

Time: Four Hours

Maximum Marks: 80

- Note:** (i) Attempt all questions
(ii) Show your preparation to the examiner
(iii) Draw neat and well labelled diagrams wherever necessary

Q1.	Identify and describe the given specimen- A and B (Fruit and plantation crops)	20
Q2.	Demonstrate the method of vegetative propagation of given specimen C (Cutting/ layering/ grafting/ budding)	10
Q3.	Draw a layout plan for planting in an orchard of given specimen- D	10
Q4.	Describe the method of irrigation in an orchard of given specimen- E.	10
Q5.	Describe the method of application of Manures / Fertilizers in an orchard of given specimen-F	10
Q6.	Identify and describe the given spot- G, H, I, J & K (Garden tools-02 spots, Diseases of horticultural crops-02 spots, Growth regulators, Manures & Fertilizers-01spot)	10
Q7.	a. Visit/ Excursion report	05
	b. Viva voce	05

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