परियोजना

या परियोजना के लिए सर्व संबंधित विषय को, दिनांक 08 जुलाई 2019 रोजी संपन्न झालेल्या 44व्या मण्डलात विद्यापीठाच्या विढक्कारखाली डिप्लोमा क्र.५७८/४४-२०१९ नव्हे उदयानुसार प्रस्तुत विद्यापीठाच्या संलग्नत महाविद्यालयातील विज्ञान व तंत्रज्ञान विद्याशाखातील पदवी संपत्ती रंगीली प्रमाण वापरावर खालील विषयांतून C.B.C.S. (Choice Based Credit System) Pattern नुसार अभ्यासांक मैत्रीण्याच्या वर्ष 2019-20 पासून लागू करण्यात येत आहेत.
1. Agricultural Microbiology
2. Agrochemicals & Fertilizers
3. Analytical Chemistry
4. B.C.A.
5. B.Voc. (Food Processing, Preservation and Storage)
6. B.Voc. (Web Printing Technology)
7. Biochemistry
8. Bioinformatics
9. Biophysics
10. Biotechnology (Vocational)
11. Biotechnology
12. Botany
13. Chemistry
14. Computer Application (Optional)
15. Computer Science (Optional)
16. Computer Science
17. Dairy Science
18. Dyes and Drugs
19. Electronics
20. Environmental Science
21. Fishery Science
22. Food Science
23. Geology
24. Horticulture
25. Industrial Chemistry
26. Information Technology (Optional)
27. Mathematics
28. Microbiology
29. Network Technology
30. Physics
31. Software Engineering
32. Statistics
33. Zoology

सदर्शील परियोजना व अभ्यासांक प्रस्तुत विद्यापीठाच्या www.srtmun.ac.in या संकेतस्वरूप उपलब्ध आहेत. तरी सदर्शील बाबा ही सर्व संबंधित विषयांत निर्देशनासाठी आणणून शक्य.

आजसारे पाठ्यक्रम,
विषयांत: ४५७८/४४-२०१९
आर: शैक्षणिक-१/परिपाटीक, पदवी-संबंधित अभ्यासक्रम/ २०१९-२०/२०१९
दिनांक: ०३.०७.२०१९.

प्रत्येक महंती व गुणवत्ता कायम बनावता:
1. मा. कुलसंचालित योगी कार्यक्रम, प्रस्तुत विद्यापीठ.
2. मा. संचालक, परिशिष्ट व मूलभूतभाव मंडळ योगी कार्यक्रम, प्रस्तुत विद्यापीठ.
3. प्राप्ती, सर्व संबंधित संलग्नत महाविद्यालयांचे, प्रस्तुत विद्यापीठ.
4. साहाय्यक कुलसंचालित, पद्धतीनुसार विभाग, प्रस्तुत विद्यापीठ.
5. उपकरणसंचालित, पात्रता विभाग, प्रस्तुत विद्यापीठ.
6. सिस्टम एस्पर्ट, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ.
SYLLABUS FOR CCH-I&II
(SEMESTER-I&II)
2019-2020
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
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.
**Class—B. Sc. First year** An outline (w.e.f. Academic year 2019-2020)

<table>
<thead>
<tr>
<th>Semester/Annual</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Instruction Hrs / week</th>
<th>Total Periods</th>
<th>Marks for (Marks)</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
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<td></td>
<td>Internal (CA)</td>
<td>External (ESE)</td>
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<td></td>
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<tr>
<td>Semester-I</td>
<td>CCH-I</td>
<td>CCH-I (Section-A): Fundamentals of Horticulture (Theory Paper-I)</td>
<td>03</td>
<td>45</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CCH-I (Section-B): Propagation and nursery management (Theory Paper-II)</td>
<td>03</td>
<td>45</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Semester-II</td>
<td>CCH-II</td>
<td>CCH-II (Section-A): Production technology of tropical and sub tropical fruit crops (Theory Paper-III)</td>
<td>03</td>
<td>45</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CCH-II (Section-B): Production technology of arid, minor and plantation crops (Theory Paper-IV)</td>
<td>03</td>
<td>45</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Annual Pattern</td>
<td>CCHP-I</td>
<td>CCHP-I: Practicals based on theory papers of CCH-I&amp;II (Practical Paper-V)</td>
<td>03</td>
<td>24 (Practicals/Batch/year)</td>
<td>20</td>
<td>80</td>
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</table>

Total Marks &Credits Semester-I and II

<table>
<thead>
<tr>
<th>Marks:</th>
<th>Credits:</th>
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<tbody>
<tr>
<td>60</td>
<td>12</td>
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<tr>
<td>240</td>
<td>12</td>
</tr>
<tr>
<td>300</td>
<td>12</td>
</tr>
</tbody>
</table>

**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
<table>
<thead>
<tr>
<th>Semester/Annual</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Instruction Hrs/week</th>
<th>Total Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester-III</td>
<td>CCH-III</td>
<td>CCH-III (Section-A): Production Technology of Vegetable Crops-I (Theory Paper-VI)</td>
<td>03</td>
<td>45</td>
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<tr>
<td></td>
<td></td>
<td>CCH-III (Section-B): Ornamental and Landscape Gardening (Theory Paper-VII)</td>
<td>03</td>
<td>45</td>
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<tr>
<td>Semester-IV</td>
<td>CCH-IV</td>
<td>CCH-IV (Section-A): Production Technology of Vegetable Crops-II (Theory Paper-VIII)</td>
<td>03</td>
<td>45</td>
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<tr>
<td></td>
<td></td>
<td>CCH-IV (Section-B): Commercial Floriculture (Theory Paper-IX)</td>
<td>03</td>
<td>45</td>
</tr>
<tr>
<td>Annual Pattern</td>
<td>CCHP-II</td>
<td>CCHP-II: Practices based on theory papers of Section-A of CCH-III&amp;IV (Practical Paper-X)</td>
<td>03</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>SECH-I</td>
<td>SECH-IA: Green house (protected cultivation of plants-plasticulture) OR SECH-IB: Orchard layout and planting skill</td>
<td>03</td>
<td>45</td>
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<tr>
<td></td>
<td></td>
<td>(Theory periods-21/Year, Practicals-08/year)</td>
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</tr>
<tr>
<td>Annual Pattern</td>
<td>CCHP-III</td>
<td>CCHP-II: Practices based on theory papers of Section-B of CCH-III&amp;IV (Practical Paper-XI)</td>
<td>03</td>
<td>16</td>
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<tr>
<td></td>
<td>SECH-II</td>
<td>SECH-IIA: Nursery establishment skill OR SECB-IIB: Fruit and vegetable preservation skill</td>
<td>03</td>
<td>45</td>
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<tr>
<td></td>
<td></td>
<td>(Theory periods-21/Year, Practicals-08/year)</td>
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</tbody>
</table>

**Total Marks and Credits Semester-III & IV**

- Marks: 110
- Marks: 290
- Credits: 16

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

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

**Total Marks & Credits Semester-V and VI**: Marks: 110, Marks: 290, Credits: 16 Marks: 400

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**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
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: Bhard treatment, girdling, notching, ringing and blending in fruit crops; Earthing up, staking and blanching in vegetable crops; Pinching, disbudding and deshooting in flowering crops
B. Sc. FIRST YEAR

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
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, Barenness in grapes, Fruit cracking in pomegranate
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

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
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
<table>
<thead>
<tr>
<th>Question</th>
<th>Type of Question</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Long Answer Type Question (LATQ)</td>
<td>15 Marks</td>
</tr>
<tr>
<td>OR</td>
<td>a. Short Answer Type Question (SATQ)</td>
<td>08 Marks</td>
</tr>
<tr>
<td>b. Short Answer Type Question (SATQ)</td>
<td>07 Marks</td>
<td></td>
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<tr>
<td>(Based on Unit-I &amp; II)</td>
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</tr>
<tr>
<td>Q2</td>
<td>Long Answer Type Question (LATQ)</td>
<td>15 Marks</td>
</tr>
<tr>
<td>OR</td>
<td>a. Short Answer Type Question (SATQ)</td>
<td>08 Marks</td>
</tr>
<tr>
<td>b. Short Answer Type Question (SATQ)</td>
<td>07 Marks</td>
<td></td>
</tr>
<tr>
<td>(Based on Unit-III &amp; IV)</td>
<td></td>
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</tr>
<tr>
<td>Q3</td>
<td>Write short notes on any two of the following</td>
<td>10 Marks</td>
</tr>
<tr>
<td>OR</td>
<td>a. Short Note Type Question (SNTQ)</td>
<td>05 Marks</td>
</tr>
<tr>
<td>b. Short Note Type Question (SNTQ)</td>
<td>05 Marks</td>
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</tr>
<tr>
<td>c. Short Note Type Question (SNTQ)</td>
<td>05 Marks</td>
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</tr>
<tr>
<td>d. Short Note Type Question (SNTQ)</td>
<td>05 Marks</td>
<td></td>
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<tr>
<td>(Based on all Units)</td>
<td></td>
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</tr>
</tbody>
</table>

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

Maximum Marks: 40
**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

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Identify and describe the given specimen- A and B (Fruit and plantation crops)</td>
<td>20</td>
</tr>
<tr>
<td>Q2</td>
<td>Demonstrate the method of vegetative propagation of given specimen C (Cutting/layering/grafting/budding)</td>
<td>10</td>
</tr>
<tr>
<td>Q3</td>
<td>Draw a layout plan for planting in an orchard of given specimen- D</td>
<td>10</td>
</tr>
<tr>
<td>Q4</td>
<td>Describe the method of irrigation in an orchard of given specimen- E.</td>
<td>10</td>
</tr>
<tr>
<td>Q5</td>
<td>Describe the method of application of Manures/Fertilizers in an orchard of given specimen-F</td>
<td>10</td>
</tr>
<tr>
<td>Q6</td>
<td>Identify and describe the given spot- G, H, I, J &amp; K (Garden tools-02 spots, Diseases of horticultural crops-02 spots, Growth regulators, Manures &amp; Fertilizers-01spot)</td>
<td>10</td>
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<tr>
<td>Q7</td>
<td>a. Visit/Excursion report</td>
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<tr>
<td></td>
<td>b. Viva voce</td>
<td>05</td>
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</tbody>
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**B.Sc. First Year, w.e.f. academic year 2019-2020**

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