SRI VENKATESWARA UNIVERSITY

B.Sc. DEGREE COURSE IN SERI CULTURE TECHNOLOGY

(Syllabus under CBCS w.e.f. 2020-21)

SERI CULTURE

(With Learning Outcomes, Unit-wise Syllabus, References, Co-curricular Activities & Model Q.P.)

(To be Implemented from 2020-21 Academic Year)

Domain Subject: MARKET ORIENTED COURSE SERICULTURE

Activities, References & Model Q.P
For Five Courses of 1, 2, 3, 4 & 5 Semesters)

"The domain subject "SERICULTURE ", embracing the fields of botany of mulberry plants, cultivation of mulberry, biology of silk worm, lifecycle of the silkworm, diseases of the silk work, chawki rearing technology , cocoon pests biology are the different curricular aspects for this subject

GENERAL CURRICULAR ACTIVITIES

- **Lecturer-based**:

1) **Class-room activities**: Organization of Group discussions, question-answer sessions, scientific observations, use of audio-visual aids, guidance programmes, examination and evaluation work (scheduled and surprise tests), quizzes, preparation of question banks, student study material, material for PG entrance examinations etc.

2) **Library activities**: Reading books and magazines taking notes from prescribed and reference books and preparation of notes on lessons as per the syllabus; Reading journals and periodicals pertaining to different subjects of study; Making files of news-paper cuttings etc.

3) **Lab activities**: Organization of practicals, maintenance of lab attendance registers/log registers, maintenance of glassware and chemicals

4) **Activities in the Seminars, workshops and conferences**:Organization of at least one seminar/workshop/conference per academic year either on academic/research aspects and inculcate research spirit among students

5) **Research activities**: Student study projects (General / RBPT model), Minor or Major research projects, Research guidance to research scholars, Publication of research articles/papers (at least one in 2 years) in UGC-recognized journals, Registration in Vidwan/Orcid/Scopus/Web of Science

6) **Smart Classroom Activities**: Organization of Departmental WhatsApp groups, Ed Modo groups/Google Class Rooms/Adobe Spark groups for quick delivery of the subject; Preparation of Moocs content & presentation tube lessons by trained lecturers; Using smart/digital/e- class rooms (mandarory) wherever present; Utilization of youtube videos (subject to copy rights) etc.

- **Student-based**:

1) **Class-room activities**: Power point presentations, seminars, assignments

2) **Library activities**: Visit to library during library hour and preparation of notes

3) **Lab activities**: Maintenance of observation note book and record, keeping lab clean and tidy

4) **Activities in the Seminars, workshops and conferences**:Participation/presentation in seminar/workshop/conference

CO-CURRICULAR ACTIVITES

- **OBJECTIVES:**

The co-curricular activities are aimed at strengthening the theoretical knowledge with an activity related to the content taught in the class room. The aesthetic development, character building, spiritual growth, physical growth, moral values, creativity of the student.

The different types of co-curricular activities relevant to Sericulture domain are listed below:

- **Academic - based**

- Preparation of Charts/Clay or Thermocol Models
- Debates, Essay Writing Competitions
- Group Discussions
- Departmental (Sericulture) magazine
- Formation of Book clubs
- Animal album-making
- Viva-Voce

- **Lab/Research –based**

- Documentaries
- Field Visit/Excursions/to sericulture research stations- sericulture units
- Training at research centres (sericulture etc.)
- Exposure to scientific instruments and hands-on experience

- **Value - based**

- Organization of awareness camp on mulberry plantation, Chawki garden

➢ **Observation of Days of National/International Importance**

World Cancer Day (February 4th)	International Biological Diversity Day (May 22nd)
Darwin Day (February 12th)	World Turtle Day (May 23rd)
National Science Day (Feb 28th)	World blood Donor Day (June 14th)
World Wildlife day (March 3rd)	World Zoonoses Day (July 6th)
National Vaccination Day (March 16th)	World Mosquito Day (August 20th)
World Health Day (April 7th)	World Turtle Day (May 23rd)
Earth Day (April 22nd)	World Mosquito Day (August 20th)
Malaria Day (April 25th)	World Animal day (October 4th)
World Hepatitis Day (May 19th)	World Immunization Day (November

SRI VENKATESWARA UNIVERSITY

B.Sc. DEGREE COURSE IN SERI CULTURE TECHNOLOGY

FIRST YEAR - SECOND SEMESTER

(Syllabus under CBCS w.e.f. 2020-21)

Core Course Paper-II: MULBERRY CULTIVATION & PHYSIOLOGY

Course Outcomes: By the completion of the course the graduate should able to –

CO1 : Explain the different type of soils and the process of mulberry cultivation
CO2 : Describe the establishment of mulberry garden
CO3 : Describe the cultivation and management of mulberry
CO4: Explain the physiology of mulberry plant
CO5: Describe biochemical composition of mulberry leaf and biofertilizers

Learning objectives

1. To understand the different type of soils and the process of mulberry cultivation.
2. To understand the establishment of mulberry garden.
3. To understand the cultivation and management of mulberry.
4. To understand the physiology of mulberry plant
5. To understand the biochemical composition of mulberry leaf and biofertilizers

SYLLABUS

UNIT- I

1.1 Definition of soil, different types of soils inindia
1.2 Importance of soils with reference to mulberry cultivation;soil analysis- soil sampling, soil pH, organic carbon and NPKlevel.
1.3 Propagation of mulberry- seedling, sapling , grafting andlayering.
1.4 Raising of commercialnursery.
1.5 Application of root inducinghormones.

UNIT –II

2.1 Establishment of mulberry garden under rain-fed and irrigatedconditions:
(a) Plantingseason.
(b) Selection and preparation ofland.
(c) Plantingsystems
(d) Selection and preparation of plantingmaterial
(e) Manuring, intercultivation andirrigation.
(f) Initialharvesting.
(g) Chawki garden; importance and maintenance.

2.2 Manures and fertilizers: Types, dosage, application and schedule;biofertilizers and foliar nutrition; micro nutrients; composting and vermicomposting.

2.3 Inter cultivation practices: Purpose, methods, time and frequency; mulching; Weeding.

UNIT-III

3.1 Irrigation: Importance, Source, methods, periodicity and quantity ofirrigation, over-irrigation and its effects.

3.2 .Leaf harvesting: harvesting methods (leaf and shoot harvests); transportation and preservation of harvested leaf.

3.3 Estimation of leaf yield in rainfed and irrigated conditions: Importance of leaf quality

3.4 Integrated weedmanagement

UNIT-IV: Physiology of Mulberry

4.1 Absorption of water and solutes by roots; effect of external conditions; root pressure; ion exchange and active absorption.

4.2 Mineral nutrition- macro and micro nutrients; their physiological role.

4.3 Brief account of photosynthesis: Outline of the process; types of carbon fixation (C3 and C4); brief account of photorespiration and its significance.

4.4 Role of environmental factors on mulberrygrowth.

Unit-5

5.1 Biochemical composition of mulberryleaf.

5.2 Transpiration: Significance; stomata- mechanism of opening and closing; regulationof water loss by stomata; factors influencing the rate oftranspiration.Brief account of biological nitrogen fixation; types- importance in mulberry cultivation.

5.3 Plant growth regulators: Importance and application in mulberry, agriculture andhorticulture.

5.4 Biofertilizers, types and itssignificance.

SRI VENKATESWARA UNIVERSITY

B.Sc. EXAMINATION IN SERI CULTURE TECHNOLOGY

FIRST YEAR - SECOND SEMESTER

(Syllabus under CBCS w.e.f. 2020-21)

Core Course Paper-II: MULBERRY CULTIVATION & PHYSIOLOGY

MODEL QUESTION PAPER

Time : 3 Hrs **Max Marks : 75**

SECTION –I

Answer any FIVE of the following **5x5 = 25 Marks**

(Draw labelled diagrams wherever necessary)

1. Soil Sampling
2. Grafting
3. Manuring
4. Harvesting
5. Weed management
6. Micro nutrients
7. Growth regulators
8. Horticulture

SECTION –II

Answer ALL the questions each question carries 10 marks **5x10=50 Marks**

(Draw diagrams wherever necessary)

9. (a) Write about different soils in India (or)
   (b) Expalin about Importance of soils with reference to mulberry cultivation
10. (a) Describe about selection and preparation of land(or)
    (b) Write an account on inter cultivation and irrigation
11. (a) Expalin about leaf harvesting (or)
    (b) Describe about periodicity and quantity of irrigation
12. (a) Expalin about physiological role of micro nuturients (or)
    (b) Write a brief account on photosynthesis
13. (a) Write about transpiration (or)
    (b) Explain the biofertilizers

@@@@

SRI VENKATESWARA UNIVERSITY

B.Sc. DEGREE COURSE IN SERI CULTURE TECHNOLOGY

FIRST YEAR - SECOND SEMESTER

(Syllabus under CBCS w.e.f. 2020-21)

Practical Paper-II: MULBERRY CULTIVATION & PHYSIOLOGY

Mulberry cultivation;

1. Determination of soil ph and water holding capacity.
2. Farmimplements.
3. Preparation of land, pits and rows; preparation of rooting media(fieldwork).
4. Raising of sapling and seedling (fieldwork).
5. Intercultivation, mulching, irrigation, pruning and estimation of leafyield. (demonstration andexercise).
6. Grafting and layering inmulberry.
7. Harvesting and preservation techniques; leaf selection for differentinstars.

Physiology of mulberry;

1. Estimation of stomataindex
2. Estimation of leafprotein
3. Separation of leaf photosynthetic pigments of mulberry through paperchromatography.
4. Extraction of photosynthetic pigments by solvent washmethod.
5. Determination of water potential of potatotubers.
6. Estimation of moisture percentage and moisture retention capacity of mulberryleaf.

References:

1. HortmannandKesler(1993)PlantPropagation,principlesandpractices.PrenticeHall,HemelNemstead
2. Krishnamurthy,N.(1981)PlantgrowthsubstancesincludingapplicationinAgriculture.Tata McGraw Hill Pub. Co. Ltd. NewDelhi.
3. Shankar, M.A (1998) Handbook on mulberry Nutrition, Multiplex,Bangalore.
4. Subba Rao, N.S (1998) Biofertilisers in Agriculture. Oxford & IBH Pub. Co, Pvt. Ltd, New Delhi.
5. A text Book on MulberryCrop Protection. Govindaiah, V.P Gupta, D.D Sharma, S. Rajadurai and V. NishithaNaik, Published by Central Silk Board, Bangalore-68, India.2005.
6. RajannaL,DasP.K,RavindraS,BhogeshaK,MishraR.K,SinghviN.R,KatigarR.Sand Jayaram H. Mulberry Cultivation and Physiology Central Silk Board, Bangalore,Dec.2005