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UNIVERSITY OF MYSORE

Estd. 1916

VishwavidyanilayaKaryasoudha
Crawford Hall, Mysuru- 570 005

No.AC2(S)/151/2020-21 Dated: 26-10-2021

Notification

Sub:- Syllabus and Examination Pattern of Sericulture (UG) with effective from the Academic year 2021-22 as per NEP-2020.

Ref:- 1. Decision of Board of Studies in Sericulture (UG) meeting held on 15-10-2021.
2. Decision of the Faculty of Science & Technology Meeting held on 16-10-2021.
3. Decision of the Academic Council meeting held on 22-10-2021.

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The Board of studies in Sericulture (UG) which met on 15-10-2021 has recommended & approved the syllabus and pattern of Examination of Sericulture Programme with effective from the Academic year 2021-22 as per NEP -2020.

The Faculty of Science & Technology and Academic Council at their meetings held on 16-10-2021 and 22-10-2021 respectively have also approved the above said proposal and it is hereby notified.

The syllabus and Examination pattern is annexed herewith and the contents may be downloaded from the University Website i.e., www.uni-mysore.ac.in.

Registrar
Registrar
University of Mysore
Mysore

To:-

1. All the Principal of affiliated Colleges of University of Mysore, Mysore. Those who are running B.Sc Courses.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Sericulture, Manasagangothri, Mysore.
4. The Dean, Faculty of Science & Technology, DoS in Psychology, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangotri, Mysuru.
6. The Director, PMEB, Manasagangothri, Mysore.
7. Director, College Development Council , Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of

University  of Mysore

(National Education Policy – 2020)

Curriculum Structure and Syllabus for Undergraduate Program

B.Sc. (Basic/Hons.)

in

SERICULTURE

DEPARTMENT OF STUDIES IN SERICULTURE SCIENCE
MANASAGANGOTRI
MYSURU – 570 006
(2021-2022)

Curriculum Structure and Syllabus for the Undergraduate Degree Program - B.Sc. (Basic/Hons.)

Discipline - SERICULTURE

Name of the Degree Program	**:**	**BSc (Basic/Hons.)**
Discipline Core	**:**	**Sericulture**
Total Credits for the Program	**:**	**B.Sc. Basic - 144 and B.Sc. Hons. - 186**
Starting year of implementation	**:**	**2021-22**

Program Outcomes:

By the end of the program the students will be able to:

Acquire competency in the discipline with sound knowledge and skill to secure B.Sc. (Basic) or B.Sc. (Hons) degree in Sericulture.

1. Know the different components and chain link of sericulture industry.
2. Understand concepts of sericulture industry and demonstrate interdisciplinary skills acquired in mulberry plant cultivation, silkworm rearing, diagnosis of diseases and pest of mulberry and silkworm and their prevention and its relevance in Seri-farmers livelihood.
3. Demonstrating the Laboratory and field skills in mulberry cultivation and silkworm rearing with an emphasis on technological aspects.
4. Competent to transfer the knowledge and technical skills to the Seri-farmers.
5. Critically analyze the environmental issues and apply in management of mulberry garden and silkworm rearing at field.
6. Demonstrate comprehensive innovations and skills in improvement of mulberry and silkworm varieties for betterment of sericulture industry and human welfare.
7. Apply knowledge and skills of seribiotechnology for development new mulberry variety and silkworm breeds suitable for varied agro-climatic zones.
8. Apply tools and techniques of biostatics for critical analysis and interpretation of data accrueded.
9. Use bioinformatics tools and techniques for the analysis and interpretation of bimolecular data for better understating mulberry and silkworm.
10. Aptly demonstrate communication skills, scientific writing, data collection and interpretation abilities in all the fields of seribiotechnology.

11. Thorough knowledge and application of good laboratory and good manufacturing practices in sericulture and biotech industries.
12. Demonstrate entrepreneurship abilities, innovative thinking, planning, and setting up small-scale enterprises.

Assessment:

Weightage for assessments (in percentage)

Type of Course	**Formative Assessment / IA**	**Summative Assessment (Written Exam)**
Theory	**40%**	**60%**
Practical	**50%**	**50%**
Projects	**50%**	**50%**
Experiential Learning (Internships/MOOC/ SWAYAM etc.)	**40%**	**60%**

Formative Assessment		
Assessment Occasion/ type	**Weightage in Marks**	
	Theory	**Practical**
Test (1)	20 Marks	15 Marks
Assignment	10 Marks	05 Marks
Field work/Visit	10 Marks	05 Marks
Total	40 Marks	25 Marks

Curriculum Structure and Syllabus for the Undergraduate Degree Program - B.Sc. (Basic/Hons.)

Total Credits for the Program **: 186**

Starting year of implementation **:** 2021-22

Name of the Degree Program **: B. Sc. (Basic/Hons.)**

Discipline/Subject **: Sericulture**

Curriculum Structure for the Undergraduate Degree Program – B.Sc.

Curriculum matrix: This list consists of Discipline Core (DSC) and Open Elective (OE) courses. The Core courses are essential to earn the degree in discipline/subject of interest as prescribed by the NEP-2020. The pedagogy involves L:T:P (Lecture:Tutorial:Practical) model. Core courses involve L+P - theory, laboratory/field experiments, project work, internships etc., while Elective courses composed of L:T.

Computation of credits – 1 hour of Lecture or 2 hours of practical per week in a semester is assigned one credit. The core subject theory courses/papers have 4 credits whereas the practical/field work assigned 2 credits.

Semesters/ Courses	Title of the course	Program outcomes that the course addresses	Pre-requisite course (s)	Pedagogy	Assessment
I Semester					
Course -1	DSC-1T : SER-101T Fundamentals of Sericulture 4 Credits 100 marks	1. Students would gain brief background on different components of Sericulture. 2. They will have awareness on the origin, growth and status of sericulture industry across the globe.	Students must have studied Biology or any other equivalent subjects in Class 12.	Lectures/ Seminars/ Field work/ Assignment/ Group discussion with farmers/ Problem Solving by interacting with scientists	Formative and Summative Assessments /Evaluation as prescribed by NEP-2020 /Evaluation and analysis of results and reports submitted by students
	DSC -1P : SER-101P Fundamentals of Sericulture 2 Credits 50 Marks				
Course -2 (Open Elective)	OE-1:Science of Sericulture 3 Credits 100 Marks				

II Semester					
Course -3	DSC-2T : SER-102T Mulberry Biology and Cultivation 4 Credits 100 Marks	1. Students would know all about mulberry plant and cultivars in the field. 2. They would gain knowledge and acquire skill in cultivation of mulberry plants in the garden.			
	DSC-2P : SER-102P Mulberry Biology and Cultivation 2 Credits 50 Marks				
Course -4 (Open Elective)	OE-2: Mulberry Crop Production Technology 3 Credits 100 Marks				
Exit option with Certificate (with a minimum of 48 credits)					
III Semester					
Course -5	DSC-3T : SER-103T Silkworm Biology and Seed Technology 4 Credits 100 marks	1. Students would know life and structure of silkworm. 2. They would gain knowledge and acquire skill in production of disease free layings of silkworm for rearing.	Students must have studied Biological Science subjects in First and Second semesters	Lectures/ Seminars/ Field work/ Assignment/ Group discussion with farmers/ Problem Solving by interacting with scientists	Formative and Summative Assessments /Evaluation as prescribed by NEP-2020 /Evaluation and analysis of results and reports submitted by students
	DSC-3P : SER-103P Silkworm Biology and Seed Technology 2 Credits 50 Marks				
Course -6 (Open Elective)	OE-3: Silkworm Rearing Technology 3 Credits 100 marks				

IV Semester					
Course -7	DSC-4T : SER-104T Mulberry and Silkworm Crop				

	Protection 4 Credits 100 Marks				
	DSC-4P : SER-104P Mulberry and silkworm crop protection 2 Credits 50 Marks				
Course -8 (Open Elective)	OE-4: Textile Technology 3 Credits 100 Marks				
Exit option with Diploma in Science (with a minimum of 96 credits) or Choose both core subjects as Major subjects and pursue the study.					
V Semester					
Course -9	DSC-5T : SER-105T Silkworm Rearing Technology 3 Credits 100 Marks				
	DSC-5P : SER-105P Silkworm Rearing Technology 2 Credits 50 Marks				
Course -10	DSC-6T : SER-106T Silk Technology 3 Credits 100 Marks				
	DSC-6P : SER-106P Silk Technology 2 Credits 50 Marks				
VI Semester					
Course -11	DSC-7T : SER-107T Sericulture Economics,				

	Marketing and Extension 3 Credits 100 Marks				
	DSC-7P : SER-107P Sericulture Economics, Marketing and Extension 2 Credits 50 Marks				
Course -12	DSC-8T : SER-108T Vanya Sericulture 3 Credits 100 Marks				
	DSC-8P : SER-108P Vanya Sericulture 2 Credits 50 Marks				
Exit option with Bachelor of Science, B. Sc. Degree (with a minimum of 144 credits) or continue studies with one of the Majors in the fourth year					
VII Semester					
Course -13	DSC-9T : SER-109T Mulberry Breeding and Genetics 3 Credits 100 Marks				
	DSC-9P : SER-109P Mulberry Breeding and Genetics 2 Credits 50 Marks				
Course -14	DSC-10T : SER-110T Silkworm Breeding and Genetics 3 Credits 100 Marks				

	DSC-10P : SER-110P Silkworm Breeding and Genetics 2 Credits 50 Marks				
Course -15	DSC-11T : SER-111T Entrepreneurship, Human Resource and Rural Development 3 Credits 100 Marks				
Course -16	DSE-01T : SRE-1T Mulberry and Silkworm Physiology 3 Credits 100 Marks				
Course -17	DSE-02T : SRE-2T Plant Pathology 3 Credits 100 Marks				
Course -18	DSE-03T: SRE-3T Research Methodology 3 Credits 100 Marks				
VIII Semester					
Course -19	DSC-12T : SRC-112T Mulberry biotechnology 3 Credits 100 Marks				
Course -20	DSC-13T : SRC-113T Silkworm biotechnology 3 Credits 100 Marks				

Course -21	DSC-14T : SRC-114T Silkworm Embryology and Endocrinology 3 Credits 100 Marks				
Course -22	DSE-04T : SRE-3T Advances in Biotechnology 3 Credits 100 Marks				
Course -23	DSE-05T : SRE-4T Biostatistics and Bioinformatics 3 Credits 100 Marks				
Course -24	DSE-06P : SRE-5P Research Project/Internship 6 Credits 100 Marks				
Award of Bachelor of Science Degree with Honours B.Sc.(Hons.) Degree in Sericulture (with a minimum of 186 credits)					

B.Sc. in Sericulture (Basic/Hons.)

Semester 1

Course Title: **Fundamentals of Sericulture**	
Total Contact Hours: **56**	Course Credits:**4+2**
Formative Assessment Marks: 4**0%**	Duration of ESA/Exam: **02 hrs.**
Model Syllabus Authors: **Prof. H.B. Manjunatha & members of NEP-2020 Curriculum Committee**	Summative Assessment Marks: 6**0%**

Course Pre-requisite(s): Students must have studied Biology or any other equivalent subjects in Class 12.

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Acquire sound knowledge on different components of sericulture industry,
2. Gain skill with hands on training on mulberry cultivation and carry forward to field,
3. Gain skill with hands on training on silkworm egg production and support grainage activity,
4. Acquire knowledge and develop skill in silkworm rearing and support silkworm farming.
5. With the knowledge and skill acquired students may not only acts as resource personnel to sericulture industry but also emerged as potential entrepreneur.

Course 1: DSC-1T, SRC 101 **Fundamentals of Sericulture**		**Course 2 :** OE-1T **Sericulture Technology**	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
4	**56**	**3**	**42**

Course 1: DSC-1T: SER-101T, Fundamentals of Sericulture

Sl. No.	DSC-1T : SER-101T, Fundamentals of Sericulture	56 Hrs.
Unit –1 : Introduction to Sericulture		**14 hrs.**
1.	Origin and history of Sericulture. Silk road – Sericulture practicing countries of the World and status.	4 hrs
2.	Sericulture map of India and World.	2 hrs
3.	Sericulture organization in India and Karnataka; role of state departments of Sericulture, CSB, Universities and NGOs in Sericulture development.	2 hrs
4.	Sericultural practices in tropical and temperate climate.	2 hrs
5.	Employment generation in sericulture-Role of women in sericulture, SWOT Analysis.	2 hrs
6.	Textile fibres: Types- natural and synthetic fibres- types of silk produced in India and their importance.	2 hrs
Unit – 2 : Importance of soil for mulberry cultivation		**14 hrs.**
7.	Importance of soils fertility with reference to mulberry cultivation	1 hrs.
8.	Definition of soil, soil structures, soil textures and soil profile.	3 hrs.
9.	Types of soils in India and Soil Sickness.	2 hrs.
10.	Soil air, Soil Water and Soil organisms	3 hrs.
11.	Soil analysis- soil sampling, soil pH, organic carbon and NPK level.	3 hrs.
12.	Soil conservation methods and Reclamation	2 hrs.
Unit – 3: Components of sericulture		**14 hrs.**
13.	Introduction to Mulberry and non mulberry sericulture	2 hrs.
14.	Introduction to mulberry cultivation	2 hrs.
15.	Introduction to silkworm rearing	2 hrs.
16.	Introduction to silkworm seed production	2 hrs.
17.	silkworm seed production post cocoon technology	2 hrs.
18.	Mulberry Species and Varieties under cultivation in India.	2 hrs.
19.	Popular silkworm races of India	2 hrs.
Unit – 4: Entrepreneurship and rural development in sericulture		**14 hrs**.
20.	Entrepreneurship development programme (EDP): Emergence and objectives of EDP, essential qualities to become an entrepreneur; selection of a potential entrepreneur.	3 hrs.
21.	EDP in raising mulberry saplings (Kisan nursery) and mechanization in mulberry cultivation	2 hrs.
22.	EDP in composting and vermicomposting for the management of mulberry garden and rearing wastes.	2 hrs.
23.	EDP in chawki rearing centers, silkworm egg production and silkworm rearing, silk reeling and handicrafts from cocoons.	3 hrs.

24.	Contract farming and its scope in sericulture and Occupational health hazards in sericulture.	2 hrs.
25.	By-products of sericulture industry and their utilization.	2 hrs.

Course 1: Practical: DSC -1P: SER-101P, Fundamentals of Sericulture

1. Sericulture map of the World map and Silk Road.
2. Sericulture map of India
3. Sericulture map of Karnataka.
4. Sericulture map of non-mulberry silkworms.
5. Identification of different types of Indian soils and Soil sickness.
6. Soil analysis- soil sampling and testing.
7. Determination of pH and NPK in different soil samples.
8. Determination of water holding capacity in different soil samples.
9. Studying of different soil organisms (Microscopic culture).
10. Identification of mulberry varieties.
11. Identification of different non-mulberry food plants.
12. Identification of silkworm breeds and cocoons.
13. Identification of different types of silk fibers-Raw silk, Bleached silk, Dyed Silk
14. Handicrafts making from cocoons.

Course 2: OE-1T, Science of Sericulture

Sl. No.	OE-1T, Science of Sericulture	42 Hrs.
	Unit-I	**14hrs.**
1	Introduction to textile fibres; types – natural and synthetic fibres and their properties; importance of silk fibre.	2hrs.
2	Types of silk produced in India.	2hrs.
3	History, development and status of mulberry and non-mulberry sericulture in India. Silk production in India and other countries; export and import.	3hrs.
4	Characteristic features and advantages of sericulture; scope of sericulture in India vis-à-vis other agricultural crops - employment potential and income generation; role of women in sericulture.	3hrs.
5	Sericulture organization in India. Sericulture extension: Extension systems - Central Silk Board, state sericulture departments, universities and voluntary organizations.	2hrs.
	Unit-II	**14hrs.**
6	Host plants of mulberry and non-mulberry silkworms. Mulberry cultivars - tropical and temperate regions, irrigated and rainfed conditions.	4hrs.
7	Importance of soils fertility with reference to mulberry cultivation, soil structures, soil textures and soil profile, types of soils, and Problematic Soils and its reclimation	3hrs.
8	Propagation and establishment of mulberry garden, Package of practices for mulberry cultivation under rainfed and irrigated conditions.	3hrs.
9	Pruning, harvesting, transportation and preservation of mulberry.	2hrs.
10	Pests and diseases of mulberry and their management.	2hrs.
	Unit-III	**14hrs.**
11	Silkworm seed organization and its significance; seed areas and rearers.	2hrs.
13	General account of silkworm egg production and demand. Silkworm races / breeds, Grainage building and equipments. Grainage activities - procurement and preservation of seed cocoons, sex separation, eclosion, pairing and depairing, oviposition – sheet and loose egg preparation, mother moth examination, acid treatment, surface sterilization, washing, packing and sale of eggs.	4hrs.
14	Life cycle of *Bombyx mori*. Rearing houses and equipments; disinfection, incubation and black boxing of silkworm eggs. Rearing operations - brushing, young and late-age silkworm rearing, moulting, mounting, spinning, cocoon harvesting and marketing.	4hrs.
15	Characteristics of cocoons. Cocoon stifling and cooking. Silk reeling: Charaka, cottage basin and multi-end. Silk exchanges; weaving and dyeing.	4hrs.

Text Books

1. Sericulture Manual-1 (Mulberry cultivation) (1972); Food and Agriculture Organization of the United Nations, Rome.
2. Sericulture Manual-2 (Silkworm rearing) (1972); Food and Agriculture Organization of the United Nations, Rome.
3. Sericulture Manual-3 (Silk reeling) (1972); Food and Agriculture Organization of the United Nations, Rome.
4. Hand Book of Silkworm rearing (1972); Fuji Publishing Co., Ltd., Tokyo, Japan.
5. Text book of Tropical Sericulture (1975) Japan Overseas Corporation Volunteers 4-2-24,Hiroo, Sibuya-ku, Tokyo, Japan.
6. Charles J. Huber (1929); The Raw silk Industry of Japan. The Silk Association of America, Inc.
7. Chaudhury S.N. (1981); Muga Silk Industry, Directorate of Sericulture and Weaving, Government of Assam, Gowhati, Assam.
8. Sarkar D.C. (1980); Ericulture in India, Central Silk Board, Government of India, Bangalore.
9. SainosukaOmura (1973); Silkworm rearing Techniques in Tropics, Overseas Technical Co-operation Agency, Tokyo, Japan.
10. Tanaka Y. (1964); Sericology, Central Silk Board Publication, Bangalore.
11. Devaiah M.C *et al*. (2001); Advances in Mulberry Sericulture. Dept. of Sericulture, UAS, Bangalore.

Semester 2

Title of the Courses
Course 3: DSC-2T, SER 102, **Mulberry Biology and Cultivation**
Course 4: OE-1T, **Mulberry Crop Production Technology**

Course 1 : DSC-2T, SRC 102 **Mulberry Biology and Cultivation**		**Course 2:** OE-2T **Mulberry Crop Production Technology**	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
4	**56**	**3**	**42**

Course 3: DSC-2T: SER-102T, Mulberry Biology and Cultivation

Sl. No.	**DSC-2T: SER-102T, Mulberry Biology and Cultivation**	**56 Hrs**
	Unit –1 :Taxonomy of Mulberry	14 **Hrs**
1.	Salient features, economic importance of the family Moraceae. Phytogeography and systematics of the genus *Morus* L. and its species.	2 hrs.
2.	Botanical description and morphology of mulberry.	2 hrs.
3.	Floral biology of mulberry: Structure of male and female flowers, Catkins.	1 hrs.
4.	Anther and ovule in mulberry; micro- and megasporogenesis; development of male and female gametophytes;	2 hrs.
5.	Pollination, fertilization; development of endosperm, embryo and seed in mulberry	2 hrs.
6.	Polyembryony and parthenocarpy in mulberry.	1 hrs.
7.	Anatomy of mulberry internal structure of stem, root, petiole and leaf lamina; secondary growth in root and stem. Structure and organization of shoot and root meristems.	4 hrs.
	Unit-2: Establishment of mulberry garden	14 hrs.
8.	Propagation of mulberry- seedling, sapling, grafting and layering.	3 hrs
9.	Establishment of mulberry garden (Bush and tree plantation): Areas under mulberry cultivation in India, General Descriptions, Climatic requirements, Soil conditions, mulberry cultivation under rain-fed and irrigated conditions, mulberry cultivation in hilly areas, mixed farming with special references to tree plantations.	5 hrs
10.	Raising of commercial nursery; Application of root inducing hormones	2 hrs.
11.	Estimation of leaf yield: Importance of leaf quality.	2 hrs.
12.	Utilization of mulberry in various fields and its medicinal properties.	2 hrs.
	Unit – 3: Mulberry cultivation	
13.	Farm implements utilized in mulberry cutivation	2 hrs.

14.	Intercultivation and Mulching practices: Purpose, methods, time and frequency.	2 hrs.
15.	Irrigation: Importance, Source, methods, periodicity and quantity of irrigation, over-irrigation and its effects.	2 hrs.
16.	Pruning- Objectives, Importance and methods.	2 hrs.
17.	Leaf harvesting: harvesting methods (leaf and shoot harvests); transportation and preservation of harvested leaf and shoots.	2 hrs.
18.	Weeds of Mulberry Garden, classification, characteristics and effect on crop plants. Integrated weed management. Weeding methods.	4 hrs.
	Unit -4: Fertilizers application in mulberry	14 **Hrs**
19.	Introduction to different types of Manures and fertilizers:	2 hrs.
20.	Introduction to Biofertilizers and its application in mulberry cultivation	2 hrs.
21.	Introduction to Foliar nutritents and Plant nutrients (macro and micronutrients) and their application in mulberry cultivation.	3 hrs.
22.	Introduction to Plant Hormones and their application in mulberry production	3 hrs.
23.	Introduction to Composting and vermi-composting and their utilization in mulberry production	4 hrs.

Course 3: DSC-2P: SER-102P, Mulberry Biology and Cultivation

1.	Taxonomic description of mulberry.	
2.	Mounting of Pollen grains, Ovule and Embryo.	
3.	Anatomy of petiole,	
4.	Anatomy of leaf lamina,	
5.	Anatomy of primary and secondary stem	
6.	Anatomy of primary and secondary root.	
7.	Mulberry Farm implements.	
8.	Preparation of land, pits and rows; preparation of rooting media (fieldwork).	
9.	Raising of sapling and seedling (field work).	
10.	Intercultivation, mulching, irrigation, pruning and estimation of leaf yield. (Demonstration and exercise).	
11.	Grafting and Layering in mulberry.	
12.	Harvesting and preservation techniques; leaf selection for different instars.	
13.	Weeds of Mulberry garden, classification, weeding methods.	
14.	Study and identification of different types of fertilizers	

Course 4: OE-2T, Mulberry Crop Production Technology

Sl. No.	OE-2T, Mulberry Crop Production Technology	42 Hrs
	Unit – I	**14hrs.**
1	Taxonomy and systematics of mulberry. Reproductive biology of mulberry: male and female flowers and fruit of mulberry.	2hrs.
2	Anatomy of root, stem and leaf of mulberry.	3hrs.
3	Popular mulberry cultivars and their characteristics features	3hrs.
4	Climatic factors required for mulberry growth and productivity.	2hrs.
5	Soils for mulberry cultivation: Soil profile and properties; soil sampling and testing; problematic soils and their reclamation.	4hrs
	Unit-II	**14hrs.**
5	Propagation of mulberry through cuttings, grafting and layering. Raising of nursery for large scale production of saplings (Kisan nursery).	4hrs.
6	Establishment and maintenance of mulberry gardens; package of practices for mulberry gardens under rainfed and irrigated conditions.	4hrs.
7	Plant nutrient management: Essential nutrients, organic manures, inorganic fertilizers and bio-fertilizers and its application.	3hrs.
8	Irrigation and inter-cultivation of mulberry garden. Weeds of mulberry garden their management.	3hrs.
	Unit – III	**14hrs**
9	Pruning, leaf harvesting: harvesting methods (leaf and shoot harvests); transportation, preservation of leaf and shoots. Assessment of mulberry leaf yield and quality.	4hrs
11	Diseases of mulberry: Causal organism, symptomatology, seasonal incidence, disease cycle, yield and quality loss and their management.	4hrs.
12	Pests of mulberry: Life cycle, symptoms of attack, seasonal occurrence, nature of damage and their management.	4hrs.
13	By-Products and medicinal importance of mulberry	2hrs.

Text Books

1. Sericulture Manual-1 (Mulberry cultivation) (1972); Food and Agriculture Organization of the United Nations, Rome.
2. Sericulture Manual-2 (Silkworm rearing) (1972); Food and Agriculture Organization of the United Nations, Rome.

3. Sericulture Manual-3 (Silk reeling) (1972); Food and Agriculture Organization of the United Nations, Rome.
4. Hand Book of Silkworm rearing (1972); Fuji Publishing Co., Ltd., Tokyo, Japan.
5. Text book of Tropical Sericulture (1975) Japan Overseas Corporation Volunteers 4-2-24,Hiroo, Sibuya-ku, Tokyo, Japan.
6. Charles J. Huber (1929); The Raw silk Industry of Japan. The Silk Association of America, Inc.
7. Sainosuka Omura (1973); Silkworm rearing Techniques in Tropics, Overseas Technical Co-operation Agency, Tokyo, Japan.
8. Devaiah M.C *et al*. (2001); Advances in Mulberry Sericulture. Dept. of Sericulture, UAS, Bangalore.

Date: Chairperson

Board of Studies in Sericulture