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BENGALURU CITY UNIVERSITY

**SYLLABUS For B.Sc SERICULTURE
(I & II Semester)**

CHOICE BASED CREDIT SYSTEM

2020-2021



BENGALURU CITY UNIVERSITY

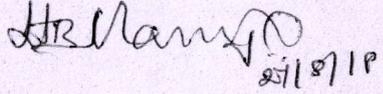
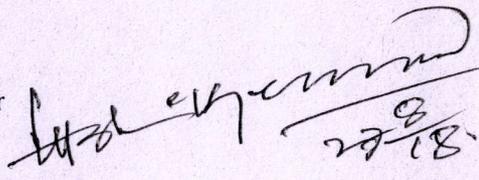
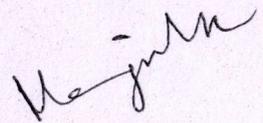
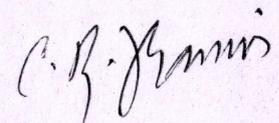
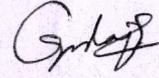
SYLLABUS FOR B.Sc. AGRICULTURE
(I & II Semester)

CHOICE BASED CREDIT SYSTEM

2019-2021

PROCEEDINGS OF THE MEETING OF THE BOARD OF STUDIES IN SERICULTURE (UG) FOR BENGALURU CENTRAL UNIVERSITY HELD ON 27th August 2018 at 11.00 AM IN THE CANARA BANK SCHOOL OF MANAGEMENT STUDIES, CENTRAL COLLEGE CAMPUS, BENGALURU – 560 001.

Members Present:

- | | | | |
|----|---|----------|--|
| 1. | Dr.H.B. Manjunatha,
Professor, Dept. of Sericulture Science
University of Mysore ,
Manasagangothri,
Mysore-570 006. | Chairman | 
27/8/18 |
| 2. | Dr. Shivashankarappa L.H,
Associate Professor,
Department of Sericulture,
Maharani Science College for Women,
Palace Road, Bengaluru -560 001 | Member | 
27/8/18 |
| 3. | Dr. Manjula A.C,
Associate Professor,
Department of Sericulture,
Maharani Science College for Women,
Palace Road, Bengaluru -560 001 | Member |  |
| 4. | Dr.. Francis C.R,
Assistant Professor,
Department of Sericulture,
Maharani Science College for Women,
Palace Road, Bengaluru -560 001 | Member |  |
| 5. | DrH.L. Ramesh,
Lecturer in Sericulture,
VV Puram Science college,
K.R Road, Bangalore-4 | Member |  |
| 6. | Sri.G.S. Raju,
Lecturer in Sericulture,
VV Puram Science College,
K.R Road, Bangalore-4 | Member |  |

The Chairperson welcomed all the members and appraised the Agenda to the Board Members.

- 1) The Board approved the adoption of Syllabus and Regulations of Bangalore University for UG Sericulture course of Bengaluru Central University for the academic year 2018-19.

PROCEEDINGS OF THE MEETING OF THE BOARD OF STUDIES IN STRUCTURE (BS)
 FOR BENGALURU CENTRAL UNIVERSITY HELD ON 27th August, 2018 at 11:00 AM IN
 THE CANARA BANK SCHOOL OF MANAGEMENT STUDIES, CENTRAL COLLEGE
 CAMPUS, BENGALURU - 560 001

Members Present

Dr. V. S. Ramesh
Dr. V. S. Ramesh
Dr. V. S. Ramesh
Dr. V. S. Ramesh
Dr. V. S. Ramesh

1. Dr. H.R. Manjunatha
 Professor, Dept. of Agricultural Science
 University of Mysore
 Manasaiahpet, Mysore-576 006
2. Dr. Srinivasakrishna J.H.
 Associate Professor,
 Department of Sericulture,
 Mahatma Science College for Women,
 Palace Road, Bangalore - 560 001
3. Dr. Manjula A.C.
 Associate Professor,
 Department of Sericulture,
 Mahatma Science College for Women,
 Palace Road, Bangalore - 560 001
4. Dr. Francis C.R.
 Assistant Professor,
 Department of Sericulture,
 Mahatma Science College for Women,
 Palace Road, Bangalore - 560 001
5. Dr. L. Ramesh
 Lecturer in Sericulture,
 VV Puram Science College,
 K.R. Road, Bangalore-4
6. Dr. O.S. Renu
 Lecturer in Sericulture,
 VV Puram Science College,
 K.R. Road, Bangalore-4

The Chairperson welcomed all the members and apprised the agenda to the Board.
 1) The Board approved the adoption of syllabus and Regulations of Bangalore University for
 the Sericulture course of Bangalore Central University for the academic year 2018-19.

BANGALORE UNIVERSITY
SERICULTURE SYLLABUS
UNDER
CHOICE BASED CREDIT SYSTEM

FIRST SEMESTER

PAPER – I : GENERAL SERICULTURE & MORICULTURE

OBJECTIVES:

52 Hours

- 1) To introduce the concepts of origin & growth of sericulture & study sericulture as science.
- 2) To acquaint with general aspects of sericulture industry.
- 3) To understand the scientific approach of mulberry cultivation & production.

UNIT – 1

- 1) Introduction to Sericulture – Definition, Origin & history – spread of sericulture – Distribution of sericulture in world – silk route 2 hrs
- 2) Scope of sericulture science : Sericulture as an inter-disciplinary subject – science, social sciences, arts & management – Importance of sericulture in rural development & Indian economy – employment generation & role of women in sericulture 2 hrs
- 3) Components of sericulture & silk industry : Mulberry cultivation – silkworm rearing – silkworm egg production – silk reeling & weaving – end products of each component & their economic importance. Sericulture – as an organised economic sector 3 hrs
- 4) Global silk production: trends in silk production in China, Indian, Japan, South Korea, Russia, Brazil, Thailand – past & present. 1 hr
- 5) Geographical concepts of tropical, temperate, sub – temperate/ tropical sericulture – Classification of countries – merits & demerits 2 hrs
- 6) Types of silks : distribution of mulberry & non – mulberry silks in India, Food plants – primary & secondary – non-mulberry sericulture & tribal development – role of social forestry 2 hrs
- 7) Sericultural practices in India: Concepts of traditional & non – traditional – meaning, traditional practices & areas – advantages & disadvantages. 2 hrs

BANGALORE UNIVERSITY
SERICULTURE SYLLABUS
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FIRST SEMESTER

PAPER - I : GENERAL SERICULTURE & MORICULTURE

- OBJECTIVES**
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UNIT - 1

- 1) Introduction to sericulture - Definition, Origin & history - spread of sericulture - 2 hrs
- 2) Distribution of sericulture in world - silk route - 2 hrs
- 3) Scope of sericulture science : Sericulture as an inter-disciplinary subject - science, social sciences, arts & management - importance of sericulture in rural development & Indian economy - employment generation & role of women in sericulture - 2 hrs
- 4) Components of sericulture & silk industry : Mulberry cultivation - silkworm rearing - silk-worm egg production - silk reeling & weaving - end products of each component & their economic importance, Sericulture - as an organised economic sector - 2 hrs
- 5) Global silk production: trends in silk production in China, India, Japan, South Korea, Russia, Brazil, Thailand - past & present. - 2 hrs
- 6) Geographical concepts of tropical, temperate, sub - temperate, tropical sericulture - Classification of countries - merits & demerits - 2 hrs
- 7) Types of silks : distribution of mulberry & non - mulberry silks in India. Food plants - primary & secondary - non-mulberry sericulture & tribal development - role of social forestry - 2 hrs
- 8) Sericultural practices in India: Concepts of traditional & non - traditional - meaning, traditional practices & areas - advantages & disadvantages. - 2 hrs

25 Hours

UNIT – 2

- 1) Study of soils : definition – process of soil formation – taxonomy of soils in brief 2 hrs
- 2) Soil properties : Soil profile – texture – textural class – structure – permeability – soil air – soil temperature – soil water fractions – soil moisture – water holding capacity – soil microorganisms Soil reaction: soil PH – acidity – alkalinity – characters of alkali soils & saline soils – remedial measures. 4 hrs
- 3) Modern system of plant classification in brief: Bentham & Hooker – binomial nomenclature – taxonomic terminologies – technical description of plant – floral biology – modern trends in taxonomy in brief. 3 hrs
- 4) Taxonomy of mulberry – popular cultivars in India. 2 hrs

UNIT – 3

- 1) Anatomy: Anatomy of root, stem & leaf of typical dicot & monocot secondary growth – anatomy of root – stem (primary & secondary) – leaf – petiole in mulberry. 2 hrs
- 2) Brief account of photosynthesis, types of carbon fixation in relation to productivity, brief account of photorespiration and its significance 2 hrs
- 3) Agroclimatic Zones of Karnataka, Agroclimatic factors suitable for mulberry cultivation in brief 2 hrs
- 4) Establishment of mulberry plantation: selection of land – topography – preparation of land; digging, ploughing – tilling – leveling – orientation & layout for irrigated & pit system (implement – machineries used) 2 hrs
- 5) Planting materials: procurement of planting material – preparation of planting material – cuttings – sapling – nursery bed preparation & maintenance – sapling raising – propagation of mulberry – grafting & layering – types. 3 hrs
- 6) Planting System : row system – pit system – spacing in planting – advantages & disadvantages – tree planting – block system, paired row system – recommended spacing under improved method of mulberry cultivation – significance of spacing – impact of spacing and leaf productivity. 2 hrs

UNIT – 4

1. Nutrients: brief account of essential macro and micro nutrients – organic manures, green manures & fertilizers: sources – types – time & method of application – foliar nutrition – technique & significance. Impact of foliar nutrients on leaf yield & chemical composition of leaf – biofertilizers types & importance - application methods & limitations – concepts of integrated nutrient management. 4 hrs
2. Irrigation: Methods of irrigation, water requirement for mulberry under different seasons – sources of irrigation – impact of over irrigation & under irrigation – fertigation – concept & significance. 5 hrs

UNIT - 1

- 1) Study of soils: definition - process of soil formation - taxonomy of soils in brief 2 hrs
- 2) Soil properties: Soil profile - texture - textural class - structure - permeability - soil air - soil temperature - soil water relations - soil moisture - water holding capacity - soil microorganisms Soil reaction: soil pH - acidity - alkalinity - occurrence of alkali soils & saline soils - essential nutrients 4 hrs
- 3) Modern system of plant classification in brief; Bonnier & Hooker - binomial nomenclature - taxonomic terminology - technical description of plant - floral biology - modern trends in taxonomy in brief 3 hrs
- 4) Taxonomy of rubbery - popular cultivars in India 5 hrs

UNIT - 2

- 1) Anatomy: Anatomy of root: stem & leaf of typical dicot & monocot secondary growth - anatomy of root - stem (primary & secondary) - leaf - petiole in rubbery 2 hrs
- 2) Brief account of photosynthesis: types of carbon fixation in relation to productivity; brief account of photosynthesis and its significance 2 hrs
- 3) Agroclimatic Zones of Karnataka: Agroclimatic factors suitable for rubbery cultivation in brief 2 hrs
- 4) Establishment of rubbery plantation: selection of land - topography - preparation of land: digging, ploughing - tilling - leveling - orientation & layout for irrigated & pu system (implements - machines used) 3 hrs
- 5) Planting materials: procurement of planting material - preparation of planting material - cuttings - sapling - nursery bed preparation & maintenance - raising - propagation of rubbery - grafting & layering - types 3 hrs
- 6) Planting system: row system - pu system - spacing in planting - advantages & disadvantages - tree planting - block system, paired row system - recommended spacing under improved method of rubbery cultivation - significance of spacing - impact of spacing and leaf productivity 5 hrs

UNIT - 3

- 1) Nutrients: brief account of essential macro and micro nutrients - organic manures, green manures & fertilizers: sources - types - time & method of application - foliar nutrition - technique & significance. Impact of foliar nutrients on leaf yield & chemical composition of leaf - biofertilizers types & importance - application methods & limitations - concepts of integrated nutrient management 4 hrs
- 2) Irrigation: Methods of irrigation, water requirement for rubbery under different seasons - sources of irrigation - impact of over irrigation & under irrigation - fertigation - concept & significance 3 hrs

3. Package of practices for irrigated & rainfed mulberry garden: planting systems – 5 hrs
manorial & fertilizer schedule – recommended dosage, Irrigation – types –
frequency, mulching practices – methods & significance – intercultivation & weeding,
pruning – methods & significance – pruning methods in India with special reference to
Karnataka – leaf harvesting methods – advantages & disadvantages – leaf transportation
– storage of mulberry leaves – importance.

References:

1. Synthesized Science of Sericulture, By Yokoyama, Published by Central Silk Board – 1954.
2. Sericologia By Tanaka Y.Pub., C.S.B. – 1964.
3. Culture and Sericulture by Prof. S.R.Charshly.
4. Sericulture for Rural Development Edited by H.G.Hanumappa.
5. Handbook on silkworm Rearing, Fuji Publications, 1972.
6. The Development of Indian Silk, Sanjay Sinha, 1990.
7. Introduction to Silkworm Rearing, The Japan Silk Association, Inc. Tokyo, Japan.
8. Silk by H.T.Gaddum and Company Ltd., Macchs field, Chestrin.
9. Sericulture Manual – I (Mulberry Cultivation) – 1972.
10. Text book of Tropical Sericulture – 1975, Pub. By Japan Overseas Corporation Volunteers, Sibuya-ku, Tokyo, Japan.
11. Jaisawal P.L 1980. Hand book of agriculture, Indian Council of Agriculture Research, New Delhi.
12. Krame (Paul.J) 1969: Plant and Soil Water Relationships; Modern Synthesis, New York, McGraw Hill.
13. Krishna Moorthy H N 1975; Gibberellins and Plant growth; Wiley Eastern, New Delhi
14. The Nature and Properties of Soils (9th edition) N C Brady (Mac Millan Pub. Co. Inc., New York.)
15. Studies on Soils of India; S V Govinda Rajan and H G Gopala Rao (1970), Vikas Publ. House Pvt. Ltd., New Delhi / Bombay.
16. Boraiah G 1986; Mulberry cultivation; Lectures on Sericulture
17. Dandin et al. 1988; Bibliography on mulberry (1900-1984) CSR & TI, (Central Silk Board) Mysore.
18. A Shankar and H R Shiva Kumar 2000; Drip and fertigation to the mulberry Geethanjali Printers.
19. S.Shankar 1997; Principles of Agronomy. The Bangalore Printing and Publishing Company.
20. FAO manual 1987; Soil and Water conservation in semi – arid areas. Oxford IBH
21. S. Krishnaswami 1993; A practical guide to mulberry silk cocoon production in tropics.
22. Hisao Aruga 1994; Principles of Sericulture; Oxford IBH.
23. M C Devaiah et al., 1998; Advances in mulberry sericulture; CVG, Publications.

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2. Trialogue of practices for irrigated & rainfed mulberry gardens: planting systems -
 material & fertilizer schedule - recommended dosage, irrigation - types -
 frequency, mulching practices - methods & significance - intercultivation & weeding
 pruning - methods & significance - pruning methods in India with special reference to
 Karnataka - leaf harvesting methods - advantages & disadvantages - leaf transportation
 - storage of mulberry leaves - importance.

References:

1. Synthesized Science of Sericulture, By Y. Koyama, Published by Central Silk Board - 1984
2. Sericulture By Tanaka Y. Prof., C.S.B. - 1984
3. Culture and Sericulture by Prof. S.R. Chhabra
4. Sericulture for Rural Development Edited by H.G. Hanumanappa
5. Handbook on Silk Worm Rearing, Puff Publications, 1972
6. The Development of Indian Silk, Sanjay Singh, 1990
7. Introduction to Silk Worm Rearing, The Japan Silk Association, Inc. Tokyo, Japan.
8. Silk by H.T. Gadhun and Company Ltd., Masoch field, Coimbatore.
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10. Text book of Tropical Sericulture - 1975, Pub. by Japan Overseas Cooperation Volunteers, Shiga-ku, Tokyo, Japan.
11. Journal P.I. 1989. Hand book of sericulture, Indian Council of Agricultural Research, New Delhi.
12. Krains (Paul) 1989: Plant and Soil Water Relationship; Modern Synthesis, New York McGraw Hill.
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15. Studies on Soils of India: S.V. Govinda Rajan and H.G. Gupta Rao (1976), Vikas Publ. House Pvt. Ltd, New Delhi, Bombay.
16. Borish O 1986; Mulberry cultivation; Lectures on Sericulture.
17. Dandin et al. 1988; Bibliography on mulberry (1900-1984) CSR & TI (Central Silk Board) Mysore.
18. A. Shankar and H.R. Shive Kumar 2006; Drip and fertigation in the mulberry Gechnical, Prisma.
19. S. Shankar 1997; Principles of Agronomy, The Bangalore Printing and Publishing Company.
20. FAO manual 1987; Soil and Water conservation in semi - arid zone, Oxford BH.
21. S. Krishnaswami 1993; A practical guide to mulberry silk cocoon production in tropics.
22. Haseo Arita 1994; Principles of Sericulture, Oxford BH.
23. M. C. Desai et al., 1988; Advances in mulberry sericulture; CVO, Publications.

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 G.M.
 P. P. J. J. J.
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SECOND SEMESTER

PAPER – II : SILKWORM BIOLOGY & REARING TECHNOLOGY

OBJECTIVES:

52 Hours

- 1) To understand the classification and biology of silkworm *Bombyx mori*.
- 2) To acquaint with ecology and ethology of silkworm rearing.
- 3) To familiarize with improved technologies in silkworm rearing & its impact on cocoon productivity.

UNIT – 1

- 1) General account and outline classification of animal kingdom; general characters and outline classification of class Insecta 3 hrs
- 2) Detailed classification of sericigenous insects: characteristic features of order Lepidoptera, families *Bombycidae* & *Saturnidae* – economic importance of insects 4 hrs
- 3) Classification of silkworms: based on origin & geographic distribution – based on voltinism & moultnism – based on cocoon colour – popular mulberry silkworm Varieties of India. 4 hrs
- 4) Biology of silkworm *Bombyx mori*: Life cycle of *Bombyx mori* 2 hrs

UNIT – 2

- 1) Morphology of egg, larva, pupa & moth. Metamorphosis : organ-inter-relationship in metamorphosis. 4 hrs
- 2) Anatomy & physiology: anatomy & physiology of digestive, circulatory, Excretory, respiratory, nervous & reproductive system of silkworm B.mori, Structure & function of silk glands – brief account on secretion of silk. 9 hrs

UNIT – 3

12 hrs

- 1) Mulberry silkworm rearing: rearing house: location, plan, orientation types. Model rearing house; ground plan, salient features & advantages. Rearing appliances & equipments – uses 4 hrs
- 2) Disinfection: concept, definition & objectives – methods – fumigation, spraying. Disinfection: classification, formulation dosage calculation – effective disinfection – process & significance 6 hrs
- 3) Selection of race / breed of silkworm & Procurement, transportation procedure 2 hrs

SECOND SEMESTER

SAFER - II : SILKWORM BIOLOGY & REARING TECHNOLOGY

22 Hours

OBJECTIVES:

- 1) To understand the classification and biology of silkworm Bombyx mori.
- 2) To acquaint with ecology and etiology of silkworm rearing.
- 3) To familiarize with improved technologies in silkworm rearing & its impact on cocoon productivity.

UNIT - 1

- 1) General account and outline classification of animal kingdom, general characters and outline classification of class Insecta 3 hrs
- 2) Detailed classification of arthropods, factors: characteristic features of order Lepidoptera, families Bombycidae & Saturniidae - economic importance of insects 4 hrs
- 3) Classification of silkworms, based on origin & geographic distribution - breed on white & mulberry - based on cocoon colour - popular mulberry silkworm varieties of India 4 hrs
- 4) Biology of silkworm Bombyx mori, Life cycle of Bombyx mori 3 hrs

UNIT - 2

- 1) Morphology of egg, larva, pupa & moth, Metamorphosis: organ-intel-relationship in metamorphosis 4 hrs
- 2) Anatomy & physiology, anatomy & physiology of digestive, circulatory, Excretory, respiratory, nervous & reproductive system of silkworm Bombyx mori, Saturnia & function of silk glands - brief account on secretion of silk. 9 hrs

UNIT - 3

- 1) Mulberry silkworm rearing, rearing house: location, plan, orientation types Model rearing house, ground plan, salient features & advantages. Rearing appliances & equipments - uses 4 hrs
- 2) Distinction: concept, definition & objectives - methods - fumigation, spraying Distinction: classification, formulation dosage calculation - effective distinction - process & significance 6 hrs
- 3) Selection of race, breed of silkworm & Procurement, transportation procedure 3 hrs

UNIT – 4

- 1) Chawki Rearing: concept, objectives & principles 5 hrs
- Incubation methods – black boxing – significance – role of environmental conditions for incubation
 - Preparation for brushing, brushing methods – advantages – disadvantages
 - Methods of chawki rearing – optimum environmental conditions for chawki rearing
 - Methods & frequency of feeding, bed cleaning & spacing – significance
 - Co-operative chawki rearing – importance
 - Commercial chawki centres' and their management
- 1) Late age silkworm rearing: 6 hrs
- Objectives & principles
 - Methods of rearing adult silkworm
 - Quality of feed, methods of feeding, frequency of feeding
 - Bed cleaning & spacing – methods & significance
 - Bed disinfectant: types & application methods – significance
 - Care at moulting.
- 1) Spinning and mounting: 2 hrs
- Spinning behaviours of silkworm
 - Environmental factors influencing spinning
 - Types of mountages – reasons for defective cocoon formation
- 1) Cocoon harvesting: 1 hr
- Harvesting – sorting & transportation procedure
 - Environment conditions & timing of transportation of cocoon – significance – Quality inspection and grading of cocoons.

UNIT - 4

- 1) Cattle Rearing: concept, objectives & principles
- Incubation methods - black boxing - significance - role of environmental conditions for incubation
- Preparation for breeding, breeding methods - advantages - disadvantages
- Methods of cow rearing - optimum environmental conditions for cow rearing
- Methods & frequency of feeding, bed cleaning & spacing - significance
- Co-operative cow rearing - importance
- Commercial cow rearing, and their management

- 1) Sheep rearing: objectives & principles
- Methods of rearing adult sheep
- Quality of feed, methods of feeding, frequency of feeding
- Bed cleaning & spacing - methods & significance
- Bed disinfestation: types & application methods - significance
- Care & marketing

- 1) Spinning and mounting: spinning behaviour of sheep
- Environmental factors influencing spinning
- Types of mountings - reasons for defective cocoon formation

- 1) Cocoon harvesting: harvesting - sorting & transportation procedure
- Environment conditions & timing of transportation of cocoon - significance - Quality inspection and grading of cocoons

References:

- 1) Manual on Sericulture; Food and Agriculture Organisation, Rome 1976
- 2) Appropriate Sericultural Techniques Ed. By M S Jolly, Director, CSR & TI, Mysore.
- 3) Handbook of Practical Sericulture, S R Ullal and M N Narasimhanna, CSB, Bangalore 1987
- 4) Text Book of Tropical Sericulture, Pub. Japan Overseas Corporation Volunteers, 1975.
- 5) Handbook on Silkwom Rearing, Agriculture & Technical Manual-1, Fuzi Pub. Co. Ltd., Japan 1972.
- 6) Silkworm rearing : Wupang – Chun and Chen Da – Chung; Pub. By FAO, Rome 1988.
- 7) New Technology of Silkworm Rearing: S.Krishnaswamy, Reprinted by CSB, Bangalore 1986
- 8) Improved method of rearing young age silkworm: S Krishnaswamy, Reprinted by CSB, Bangalore 1986
- 9) The Principles of Insect Physiology: V B Wigglesworth. Pub. By English Language Book Soc., Chapman & Hall 1972.
- 10) Principles of Insect Morphology: R E Snodgrass, Tata Mc Graw Hill Pub. Co. Ltd., Bombay, 1935
- 11) Insect Biology in the future, VBW 80, Ed by Michael Locke, David S Smith, Academic Press, 1980.
- 12) Silkworm Biology and Rearing, A K Dhole, Project Co-ordinator, NCERT, New Delhi, 1990.
- 13) An Introduction to Sericulture, Ganga G and J Sulochana Shetty – Oxford & IBH Pub. 1991
- 14) China Sericulture 1972, FAO, Rome.
- 15) Silkworm Rearing and Diseases of Silkworm, 1956 Ptd. By Director of Ptg., Stn. & Pub. Govt. Press, Bangalore.
- 16) Handbook of Sericulture-1; Yonemua M and Rama Rao N 1925; Mysore Govt. Ptg. Press.

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G. S. S.

P. B. Manis

U. S. S.

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References

- 1) Manual on Sericulture, Food and Agriculture Organisation, Rome 1976
- 2) Applied Sericulture Techniques Ed. By M S Jolly, Director, CSR & T Mysore
- 3) Handbook of Tropical Sericulture, S R Jolly and M N Nageswaraiah, CSR, Bangalore 1987
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- 15) Silkworm Rearing and Diseases of Silkworm, 1956 Ed. by Director of P. N. Jeyaraj & Pub.
Govt. Press, Bangalore
- 16) Handbook of Sericulture-1, Yousuf M and Rama Rao N 1955, Mysore Govt. Ptg. Press.

Approved
by
G. S. Nageswaraiah
Director
Government
of Karnataka

FIRST SEMESTER

PRACTICAL – I : GENERAL SERICULTURE & MORICULTURE

16 PRACTICALS

- | | |
|--|----|
| 1) Sericulture maps : | 01 |
| a) World map & silk route | |
| b) India mulberry & non-mulberry belts. | |
| 1) Preparation of Pie charts : different types of silk production in India | 01 |
| 2) Land area measurement – conversions & calculations | 01 |
| 3) Soil analysis: for pH & electrical conductivity | 01 |
| 4) Determination of water holding capacity of soils | 01 |
| 5) Farm Implements | 01 |
| 6) Technical description of mulberry | 01 |
| 7) Anatomy of root, stem & leaf of mulberry | 03 |
| 8) Mulberry propagation: nursery propagation – grafting & layering | 02 |
| 9) Mulberry cultivation: all aspects in detail (field work) | 03 |
| 10) Common weeds of mulberry garden. | 01 |

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Guest

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25/1/2012
C. R. Ramis

FIRST SEMESTER

PRACTICAL - I: GENERAL SERICULTURE & MORICULTURE

16 PRACTICALS

- 01 1) Seric stone maps :
a) World map & silk zone
b) India, mulberry & non-mulberry belts
- 01 2) Preparation of bar charts : different types of silk production in India
- 01 3) Land area measurement - conversions & calculations
- 01 4) Soil analysis for pH & electrical conductivity
- 01 5) Determination of water holding capacity of soil
- 01 6) Farm implements
- 01 7) Technical description of mulberry
- 03 8) Anatomy of root stem & leaf of mulberry
- 05 9) Mulberry propagation nursery propagation - grafting & layering
- 03 10) Mulberry cultivation: all aspects in detail (field work)
- 01 11) Common weeds of mulberry garden

Handwritten notes:
Mulberry
Silk
Cultivation
Propagation
Grafting & layering
Soil analysis
Water holding capacity
Land area measurement
Bar charts
Sericulture & Moriculture

SECOND SEMESTER

PRACTICAL – II : SILKWORM BIOLOGY & REARING TECHNOLOGY

16 PRACTICALS

- 1) Life cycle of B.mori, morphology of egg, larva, pupa & adult
02
- 2) Dissection of digestive system, nervous system & silk gland of silkworm larva
03
- 3) Dissection of male & female reproductive system of silk moth
02
- 4) Model rearing house – ground plan & chawki rearing / late age rearing
01
- 5) Rearing appliances 02
- 6) Disinfection – formulation, disinfectants – types – formulation – calculation –
01
Method: of application
- 7) Silkworm races – morphological study of BV & MV cocoons
01
- 8) ***Silkworm rearing – brushing – methods 02
Chawki – rearing – late age rearing, feeding, bed cleaning, spacing moulting
- 9) Mounting & spinning – types of mountages 01
- 10) Cocoon harvesting and quality assessment 01

Note: ***Silkworm rearing – compulsory rearing & submission of report

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SECOND SEMESTER

PRACTICAL - II : SILKWORM BIOLOGY & REARING TECHNOLOGY

16 PRACTICALS

- 1) Life cycle of silkworm, morphology of egg, larva, pupa & adult
02
 - 2) Dissection of digestive system, nervous system & silk gland of silkworm larva
02
 - 3) Dissection of male & female reproductive system of silk moth
02
 - 4) Model rearing frame - ground plan & chart's rearing / jar, egg rearing
01
 - 5) Rearing appliances
02
 - 6) Dissection - formation, dissections - types - formulation - calculation -
01
Method of application
 - 7) Silk worm races - morphological study of BV & MV cocoon
01
 - 8) ***Silkworm rearing - crushing - methods
02
Chart - rearing - late age rearing, feeding, bed cleaning, spacing, moulting
 - 9) Moulting & spinning - types of moulting
01
 - 10) Cocoon harvesting and quality assessment
01
- Note: ***Silkworm rearing - compulsory rearing & submission of report

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Checked: _____
Date: _____
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BENGALURU CENTRAL UNIVERSITY
Curriculum in Sericulture for B.Sc (UG) 2019-20

Theory

Semester	Paper	Title of the Paper	Total number of hours	Hours / week	Marks	Internal Assessment*	Total Marks
I	I	General Sericulture and Moriculture	52	04	70	30	100
II	II	Silkworm Biology and Rearing Technology	52	04	70	30	100
III	III	Mulberry and Silkworm Crop protection	52	04	70	30	100
IV	IV	Silkworm Seed Technology and VanyaSericulture	52	04	70	30	100
V	V	Cytogenetics and Breeding of Mulberry	40	03	70	30	100
V	VI	Cytogenetics and Breeding of Silkworm	40	03	70	30	100
VI	VII	Silk Technology	40	03	70	30	100
VI	VIII	Sericulture Extension, Economics and Enterprenurship	40	03	70	30	100

PRACTICAL

Semester	Paper	Title of the Paper	Total number of hours	Hours / week	Marks	Internal Assessment*	Total Marks
I	I	General Sericulture and Moriculture	45	03	35	15	50
II	II	Silkworm Biology and Rearing Technology	45	03	35	15	50
III	III	Mulberry and Silkworm Crop protection	45	03	35	15	50
IV	IV	Silkworm Seed Technology and VanyaSericulture	45	03	35	15	50
V	V	Cytogenetics and Breeding of Mulberry	45	03	35	15	50
V	VI	Cytogenetics and Breeding of Silkworm	45	03	35	15	50
VI	VII	Silk Technology	45	03	35	15	50
VI	VIII	Sericulture Extension, Economics and Enterprenurship	45	03	35	15	50

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C. R. Ramini

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BENGALURU CENTRAL UNIVERSITY
Curriculum in Semesters for B.Sc (H.C) 2019-20

Theory

Semester	Paper	Title of the Paper	Total number of hours	Hours/week	Marks	Internal Assessment Marks	Total Marks
I	I	General Sericulture and Microbiology	52	04	70	30	100
II	II	Silkworm Biology and Rearing Technology	52	04	70	30	100
III	III	Mulberry and Silkworm Crop Protection	52	04	70	30	100
IV	IV	Silkworm Seed Technology and Parasitology	52	04	70	30	100
V	V	Cyogenetics and Breeding of Mulberry	40	03	70	30	100
V	VI	Cyogenetics and Breeding of Silkworm	40	03	70	30	100
VI	VII	Silk Technology	40	03	70	30	100
VI	VIII	Sericulture Extension, Economics and Entrepreneurship	40	03	70	30	100

PRACTICAL

Semester	Paper	Title of the Paper	Total number of hours	Hours/week	Marks	Internal Assessment Marks	Total Marks
I	I	General Sericulture and Microbiology	42	03	32	12	50
II	II	Silkworm Biology and Rearing Technology	42	03	32	12	50
III	III	Mulberry and Silkworm Crop Protection	42	03	32	12	50
IV	IV	Silkworm Seed Technology and Parasitology	42	03	32	12	50
V	V	Cyogenetics and Breeding of Mulberry	42	03	32	12	50
V	VI	Cyogenetics and Breeding of Silkworm	42	03	32	12	50
VI	VII	Silk Technology	42	03	32	12	50
VI	VIII	Sericulture Extension, Economics and Entrepreneurship	42	03	32	12	50

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BENGALURU CENTRAL UNIVERSITY
Curriculum in Sericulture for B.Sc (UG) 2019-20

Theory

Semester	Paper	Title of the Paper	Total number of hours	Hours / week	Marks	Internal Assessment*	Total Marks
I	I	General Sericulture and Moriculture	52	04	70	30	100
II	II	Silkworm Biology and Rearing Technology	52	04	70	30	100
III	III	Mulberry and Silkworm Crop protection	52	04	70	30	100
IV	IV	Silkworm Seed Technology and VanyaSericulture	52	04	70	30	100
V	V	Cytogenetics and Breeding of Mulberry	40	03	70	30	100
V	VI	Cytogenetics and Breeding of Silkworm	40	03	70	30	100
VI	VII	Silk Technology	40	03	70	30	100
VI	VIII	Sericulture Extension, Economics and Enterprenurship	40	03	70	30	100

PRACTICAL

Semester	Paper	Title of the Paper	Total number of hours	Hours / week	Marks	Internal Assessment*	Total Marks
I	I	General Sericulture and Moriculture	45	03	35	15	50
II	II	Silkworm Biology and Rearing Technology	45	03	35	15	50
III	III	Mulberry and Silkworm Crop protection	45	03	35	15	50
IV	IV	Silkworm Seed Technology and VanyaSericulture	45	03	35	15	50
V	V	Cytogenetics and Breeding of Mulberry	45	03	35	15	50
V	VI	Cytogenetics and Breeding of Silkworm	45	03	35	15	50
VI	VII	Silk Technology	45	03	35	15	50
VI	VIII	Sericulture Extension, Economics and Enterprenurship	45	03	35	15	50

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Semester	Paper	Title of the Paper	Total number of hours	Hours / week	Marks	Internal Assessment* Marks	Total Marks
I	I	General Sericulture and Moulting	52	04	70	30	100
II	II	Silkworm Biology and Rearing Technology	52	04	70	30	100
III	III	Mulberry and Silkworm Crop production	52	04	70	30	100
IV	IV	Silkworm Seed Technology and Variegation	52	04	70	30	100
V	V	Cyogenetics and Breeding of Mulberry	40	03	70	30	100
V	VI	Cyogenetics and Breeding of Silkworm	40	03	70	30	100
VI	VII	Silk Technology	40	03	70	30	100
VI	VIII	Sericulture Extension, Economics and Entrepreneurship	40	03	70	30	100

PRACTICAL

Semester	Paper	Title of the Paper	Total number of hours	Hours / week	Marks	Internal Assessment* Marks	Total Marks
I	I	General Sericulture and Moulting	42	03	32	12	50
II	II	Silkworm Biology and Rearing Technology	42	03	32	12	50
III	III	Mulberry and Silkworm Crop production	42	03	32	12	50
IV	IV	Silkworm Seed Technology and Variegation	42	03	32	12	50
V	V	Cyogenetics and Breeding of Mulberry	42	03	32	12	50
V	VI	Cyogenetics and Breeding of Silkworm	42	03	32	12	50
VI	VII	Silk Technology	42	03	32	12	50
VI	VIII	Sericulture Extension, Economics and Entrepreneurship	42	03	32	12	50

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 Head of Department

SERICULTURE UG credit system							
A) I/II/III/IV semester							
Subjects	Paper	Hours/week	Duration of exam (hrs)	IA	Exam	Total	Credits
Optional papers with 1 practicals of 1 credit each	1 Theory	1x4	3	1x30	1x70	1x100	2
	1 practical	1x3	3	1x15	1x35	1x50	1

A) V/VI semester							
Subjects	Paper	Hours/week	Duration of exam (hrs)	IA	Exam	Total	Credits
Optional papers with 1 practicals of 1 credit each	1 Theory	2x3	2x3	2x30	2x70	2x100	2+2=4
	2 practicals	2x3	2x3	2x15	2x35	2x50	2

Semester	Theory	Practical	Total credits/ semester
I/II/III/IV Semester	2	1	3
V/VI Semester	4	2	6

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SEMESTER V US credit system

A) VIVA/IV semester							
Subjects	Paper	Hours/week	Duration of exam (hrs)	IA	Exam	Total	Credits
Optional papers with 1 practical of 2 credit each	1 Theory	2hr	2	1x30	1x70	1x100	2
	1 practical	1hr	3	1x15	1x85	1x100	1

A) VVI semester							
Subjects	Paper	Hours/week	Duration of exam (hrs)	IA	Exam	Total	Credits
Optional papers with 1 practical of 2 credit each	1 Theory	2hr	2hr	1x30	1x70	1x100	2
	1 practical	1hr	3hr	0x25	1x75	1x100	1

Semester	Theory	Practical	Total credit/ semester
IV/III semester	1	1	2
VVI semester	1	1	2

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