

Shri Krishan Chander Government Degree College Poonch

AUTONOMOUS (Affiliated to University of Jammu)



Department of Sericulture

SYLLABUS AND COURSES OF STUDY IN SERICULTURE

(For the Examination to be held in December 2026, 2027 & 2028)

SERICULTURE COURSE

UG

SEMESTER - I

UNDER

NEP-2020

SEMESTER-I

Sl. No.	Course Type	Course Code	Course Title	Credits	Internal Marks	External Marks	Total
1.	Major	UMJSETH-101	Introduction to Sericulture & Soil Sciences	04	20	80	100
2.	Major Practical	UMJSEPR-111	Introduction to Sericulture & Soil Sciences	02	25	25	50
3.	Minor	UMISETH-121	Basics of Sericulture & Soil Sciences	04	20	80	100
4.	Minor Practical	UMISEPR-131	Basics of Sericulture & Soil Sciences	02	25	25	50
5.	MDC	UMDSETH-141	General Sericulture – I	03	15	60	75
6.	SEC	USESEPR-151	Mulberry Production Technology	03 (1+2)	35 (10+25)	40 (15+25)	75 (25+50)

SHRI KRISHAN CHANDER GOVERNMENT DEGREE COLLEGE POONCH
AUTONOMOUS (Affiliated to University of Jammu)
Department of Sericulture
Four Year Undergraduate Programme (FYUGP) SERICULTURE
Detailed Syllabus for the Examination to be held in Year Dec. 2026, 2027 & 2028
(MAJOR COURSE)
UG SEMESTER-I

COURSE CODE	:	UMJSETH-101
COURSE TITLE	:	INTRODUCTION TO SERICULTURE & SOIL SCIENCES
COURSE CREDITS	:	04
CREDIT HOURS	:	60
INTERNAL ASSESSMENT	:	20 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	80 MARKS (3 hours)
TOTAL MARKS	:	100

Course Objectives:

- To understand the origin, history, scope and present status of the sericulture industry in India and the world, with special reference to Jammu & Kashmir.
- To learn the structure and functions of major sericulture organizations.
- To acquire basic knowledge of mulberry and non-mulberry sericulture.
- To understand soil properties, fertility, nutrient management, and soil analysis for mulberry cultivation.
- To develop knowledge of soil classification, reclamation, and sustainable nutrient management practices.

Course Outcomes: After completing the course, students will be able to:

- Explain the history, scope, and importance of sericulture.
- Describe sericulture organizations and distinguish silkworm species, host plants, cocoons, and silk types.
- Analyze soil properties, fertility, and nutrient requirements for mulberry cultivation.
- Apply soil sampling, testing, classification and reclamation techniques.
- Recommend suitable nutrient management practices for sustainable mulberry production.

SYLLABUS

UNIT I

(15 Hours)

- 1.1 Introduction to Sericulture: Scope, Origin and History of sericulture industry in the World and in India. Silk Route.
- 1.2 Present status, Cocoon and silk production in traditional and non-traditional silk producing states, mulberry areas, sericulture villages, no. of families involved with sericulture industry.
- 1.3 Characteristics and Prospects of sericulture industry.
- 1.4 Role of women in sericulture - women participation in mulberry garden and rearing management.

UNIT II (15 Hours)

- 2.1 Organizational set up of Central Silk Board, Jammu and Kashmir Sericulture Development Department.
- 2.2 Role of Central Silk Board in research and development of sericulture in different states of India.
- 2.3 Mulberry Sericulture- Introduction to mulberry silkworm and its food plant.
- 2.4 Non-Mulberry Sericulture- Introduction to different species of non-mulberry silkworm and its food plants.

UNIT III (15 Hours)

- 3.1 Soil properties: Physical and Chemical, Carbon-Nitrogen ratio and its significance.
- 3.2 Essential elements required for mulberry growth- their role in plant growth and development including its deficiency and toxicity.
- 3.3 Importance of soil with regards to mulberry cultivation.
- 3.4 Soil sampling, soil analysis, Soil pH; Acidic and alkaline soils: their problems and reclamation.

UNIT IV (15 Hours)

- 4.1 Classification of different types of soil, Major soils of India related to mulberry cultivation.
- 4.2 Problematic soils and reclamation: Acidic and Alkaline soils. Reclamation methods of problematic soils.
- 4.3 Soil fertility management: Factors affecting soil fertility.
- 4.4 Recommended dosage and schedule of NPK application for mulberry cultivation.

Recommended Readings:

1. Johnson, M. and Kesary, M. (2020). Sericulture. (Ed. 1). Saras Publication.
2. Sarkar, S. (2022). A Textbook on Sericulture. (Ed. 1). Publisher Techno World.
3. Sarwar, S., Hussain, I. and Ahmad, A. Introduction to Sericulture Industry (Latest Edition). Bisma Books.
4. Chawala, N. K., (2017). Comprehensive Sericulture: Silkworm Rearing and Silk Rearing. Indian Books and Periodicals.
5. Madan Mohan Rao, M. (2019). An Introduction to Sericulture. (Ed. 2). B S Publications.
6. Ramamoorthy, R., Umapathy, G., Ambethgar, V. and Selvanarayanan, V. (2019). Glossary of Sericulture. (Ed. 1). Aknik Publications.
7. Bhaskar, R. N. and Anusha, H. G. (2002) Objective Question Bank on Sericulture, Agri Biovet Press.
8. Savithri, G., Sujathamma, P. and Neeraja, P. (2016). Sericulture: An Overview. Industry, Publisher Bio-GreenBooks.
9. Elumalai, D., Mohan Raj, P., Ramamoorthy, R., Mohan, C. and Poovizhiraja, B. (2021). Introduction to Non-mulberry Silkworm. (Ed.1). Om Publications/ Jaya Publication New Delhi.

10. Biswas, T. D. and Mukherjee, S. K. (2004). Textbook of Soil Science. (Ed. 12). Tata Mc. Hill Company Ltd., NewDelhi.
11. Das, Dilip Kumar (2020). Introductory Soil Science. (Ed. 4). Kalyani Publishers.

TESTING AND EVALUATION:

Examination Pattern shall be as under:

1. **20 marks shall be earmarked for Internal Assessment** (05 Marks for Attendance and 15 Marks for Internal Assessment Test).
2. **Scheme for award of marks for attendance:**
 - a. Attendance of 75-80% = 01 Marks
 - b. Attendance of 81-85% = 02 Marks
 - c. Attendance of 86-90% = 03 Marks
 - d. Attendance of 91-95% = 04 Marks
 - e. Attendance of 96-100% = 05 Marks
3. **Pattern of Internal Assessment Test of 15 Marks:**
 - a. The test shall comprise of two sections:
 - i. **Section-A (Short Answer Type Questions)**
 1. Attempt any five questions of 02 marks each out of eight questions. **(5×2=10 Marks).**
 - ii. **Section – B (Long Answer Type Questions)**
 1. Attempt any one question of 05 marks out of two questions. **(1×5=5 Marks).**
4. **Pattern of External End-Semester Examination of 80 marks:**
 - a. The paper shall comprise of three sections:
 - i. **Section-A (Very short answer types questions)**
 1. 06 questions of 01 mark each. **(6×1=06 Marks).**
 2. 05 questions of 02 mark each. **(5×2=10 Marks).**
 - ii. **Section-B (Short answer type questions)**
 1. Total 08 questions (02 Questions from each unit) of 04 marks each.
 2. Attempt any one Question from each Unit. **(4×4=16 Marks).**
 - iii. **Section-C (Long Answer Type Questions)**
 1. Total 08 questions (02 questions from each unit) of 12 marks each.
 2. Attempt any one question from each unit. **(4×12=48 Marks).**

Signatures:

- | | | | | |
|--|--|--|---|---|
| 1.  | 2.  | 3.  | 4.  | 5.  |
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(MAJOR PRACTICAL COURSE)
UG SEMESTER-I

COURSE CODE	:	UMJSEPR-111
COURSE TITLE	:	INTRODUCTION TO SERICULTURE & SOIL SCIENCES
COURSE CREDITS	:	02
CREDIT HOURS	:	60
INTERNAL ASSESSMENT	:	25 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	25 MARKS (1.5 hours)
TOTAL MARKS	:	50

Course Objectives:

The course aims to:

- Understand the geographical distribution and history of sericulture.
- Learn the structure and functions of major sericulture organizations.
- Identify different cocoons, silks, and silkworm hybrids.
- Develop practical skills in soil sampling, analysis and nutrient management.
- Gain field experience in mulberry cultivation and soil management.

Course Outcomes:

After completion of this practical course, students will be able to:

- Explain sericulture distribution, the silk route, and major sericulture organizations.
- Identify cocoons, silks and silkworm hybrids.
- Perform soil sampling, analysis, and interpret soil fertility.
- Classify soils and recommend suitable nutrient management practices.
- Apply practical knowledge through field observations in mulberry gardens.

SYLLABUS

PRACTICUM

(60 Hours)

1. Sericulture Maps: World Maps and India (Traditional and Non-Traditional States).
2. Silk Route.
3. Organizational set up of Central Silk Board.
4. Organizational set up of Jammu and Kashmir Sericulture Development Department.
5. Types of Cocoons and Silks produced by mulberry and non-mulberry silkworms.
6. Characteristic features of different hybrids of silkworms with special reference to Jammu and Kashmir.
7. Study of soil profile:
 - i. Soil sampling

- ii. Preparation of soil sample for analysis
 - iii. Soil analysis for pH
 - iv. Determination of organic carbon
 - v. Determination of available nitrogen
8. Identification and classification of different types of soil: Sandy soil, Clay soil, Loamy soil, Red soil and Black soil.
 9. Study of Acidic and Alkaline soils.
 10. Preparation of fertilizer application schedule.
 11. Identification of nutrient deficiency symptoms in mulberry.
 12. Field visit to mulberry garden.

Books Recommended:

1. Johnson, M. and Kesary, M. (2020). Sericulture. (Ed. 1). Saras Publication.
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DISTRIBUTION OF MARKS:

A.	Internal Assessment (Daily evaluation of practical records/viva-voice/attendance etc.)	Attendance = 05 marks
		Day to day performance = 05 marks
		Practical Test = 10 marks
		Viva-voice = 05 marks
B.	External examination (100% syllabus)	Examination: 20 marks (Two practicals of 10 marks each)
		Viva-voice = 05 marks

Scheme for award of marks for attendance:

- a. Attendance of 75-80% = 01 Marks
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(MINOR COURSE)
UG SEMESTER-I

COURSE CODE	:	UMISETH-121
COURSE TITLE	:	BASICS OF SERICULTURE & SOIL SCIENCES
COURSE CREDITS	:	04
CREDIT HOURS	:	60
INTERNAL ASSESSMENT	:	20 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	80 MARKS (3 hours)
TOTAL MARKS	:	100

Course Objectives:

- To understand the origin, history, scope and present status of the sericulture industry in India and the world, with special reference to Jammu & Kashmir.
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- Apply soil sampling, testing, classification and reclamation techniques.
- Recommend suitable nutrient management practices for sustainable mulberry production.

UNIT I **(15 Hours)**

- 1.1 Introduction to Sericulture: Scope, Origin and History of sericulture industry in the World and in India. Silk Route.
- 1.2 Present status, Cocoon and silk production in traditional and non-traditional silk producing states, mulberry areas, sericulture villages, no. of families involved with sericulture industry.
- 1.3 Characteristics and Prospects of sericulture industry.
- 1.4 Role of women in sericulture - women participation in mulberry garden and rearing management.

UNIT II **(15 Hours)**

- 2.1 Organizational set up of Central Silk Board, Jammu and Kashmir Sericulture

Development Department.

2.2 Role of Central Silk Board in research and development of sericulture in different states of India.

2.3 Mulberry Sericulture- Introduction to mulberry silkworm and its food plant.

2.4 Non-Mulberry Sericulture- Introduction to different species of non-mulberry silkworm and its food plants.

UNIT III

(15 Hours)

3.1 Soil properties: Physical and Chemical, Carbon-Nitrogen ratio and its significance.

3.2 Essential elements required for mulberry growth- their role in plant growth and development including its deficiency and toxicity.

3.3 Importance of soil with regards to mulberry cultivation.

3.4 Soil sampling, soil analysis, Soil pH; Acidic and alkaline soils: their problems and reclamation.

UNIT IV

(15 Hours)

4.1 Classification of different types of soil, Major soils of India related to mulberry cultivation.

4.2 Problematic soils and reclamation: Acidic and Alkaline soils. Reclamation methods of problematic soils.

4.3 Soil fertility management: Factors affecting soil fertility.

4.4 Recommended dosage and schedule of NPK application for mulberry cultivation.

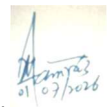
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(MINOR PRACTICAL COURSE)
UG SEMESTER-I

COURSE CODE	:	UMISEPR-131
COURSE TITLE	:	INTRODUCTION TO SERICULTURE & SOIL SCIENCES
COURSE CREDITS	:	02
CREDIT HOURS	:	60
INTERNAL ASSESSMENT	:	25 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	25 MARKS (1.5 hours)
TOTAL MARKS	:	50

Course Objectives:

The course aims to:

- Understand the geographical distribution and history of sericulture.
- Learn the structure and functions of major sericulture organizations.
- Identify different cocoons, silks, and silkworm hybrids.
- Develop practical skills in soil sampling, analysis and nutrient management.
- Gain field experience in mulberry cultivation and soil management.

Course Outcomes:

After completion of this practical course, students will be able to:

- Explain sericulture distribution, the silk route, and major sericulture organizations.
- Identify cocoons, silks and silkworm hybrids.
- Perform soil sampling, analysis, and interpret soil fertility.
- Classify soils and recommend suitable nutrient management practices.
- Apply practical knowledge through field observations in mulberry gardens.

PRACTICUM

(60 Hours)

1. Sericulture Maps: World Maps and India (Traditional and Non-Traditional States).
2. Silk Route.
3. Organizational set up of Central Silk Board.
4. Organizational set up of Jammu and Kashmir Sericulture Development Department.
5. Types of Cocoons and Silks produced by mulberry and non-mulberry silkworms.
6. Characteristic features of different hybrids of silkworms with special reference to Jammu and Kashmir.
7. Study of soil profile:

- i. Soil sampling
 - ii. Preparation of soil sample for analysis
 - iii. Soil analysis for pH
 - iv. Determination of organic carbon
 - v. Determination of available nitrogen
8. Identification and classification of different types of soil: Sandy soil, Clay soil, Loamy soil, Red soil and Black soil.
 9. Study of Acidic and Alkaline soils.
 10. Preparation of fertilizer application schedule.
 11. Identification of nutrient deficiency symptoms in mulberry.
 12. Field visit to mulberry garden.

Books Recommended:

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DISTRIBUTION OF MARKS:

A.	Internal Assessment (Daily evaluation of practical records/viva-voice/attendance etc.)	Attendance = 05 marks
		Day to day performance = 05 marks
		Practical Test = 10 marks
		Viva-voice = 05 marks
B.	External examination (100% syllabus)	Examination: 20 marks (Two practicals of 10 marks each)
		Viva-voice = 05 marks

Scheme for award of marks for attendance:

- a. Attendance of 75-80% = 01 Marks
- b. Attendance of 81-85% = 02 Marks
- c. Attendance of 86-90% = 03 Marks
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Signatures:1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 

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(MULTIDISCIPLINARY COURSE)
UG SEMESTER-I

COURSE CODE	:	UMDSETH-141
COURSE TITLE	:	GENERAL SERICULTURE – I
COURSE CREDITS	:	03
CREDIT HOURS	:	45
INTERNAL ASSESSMENT	:	15 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	60 MARKS (2.5 hours)
TOTAL MARKS	:	75

Course Objectives:

- Understand the fundamentals and importance of sericulture.
- Learn mulberry cultivation and silkworm rearing.
- Gain knowledge of cocoon processing and sericulture by-products.
- Explore entrepreneurship and government support in sericulture.
- Develop a basic understanding of sustainable sericulture practices.

Course Outcomes: After completing the course, students will be able to:

- Explain the basics of sericulture.
- Describe mulberry cultivation and silkworm rearing.
- Identify cocoon types and sericulture by-products.
- Recognize entrepreneurship opportunities and government schemes.
- Apply basic knowledge of sericulture in practice.

UNIT-I

(11 Hours)

- 1.1 Introduction to Sericulture: Definition, Types of silk.
- 1.2 Scope and importance of sericulture.
- 1.3 Characteristics of sericulture industry.
- 1.4 Importance of sericulture in rural economy and women empowerment.

UNIT-II

(12 Hours)

- 2.1 Taxonomy and economic importance of mulberry.
- 2.2 Species and varieties of mulberry.
- 2.3 Climatic and soil requirements for mulberry cultivation.
- 2.4 Propagation methods of mulberry.

UNIT-III**(12 Hours)**

- 3.1 Disinfection in sericulture: Methods and Types.
- 3.2 Life cycle of mulberry silkworm. Morphology of egg, larva, pupa and moth.
- 3.3 Rearing appliances and rearing house.
- 3.4 Silkworm rearing: young age and late age silkworm rearing.

UNIT-IV**(10 Hours)**

- 4.1 Cocoon processing and different types of cocoons.
- 4.2 By-products of sericulture and its utilization.
- 4.3 Entrepreneurship opportunities in sericulture and silk industry.
- 4.4 Government schemes and role of Central Silk Board.

RECOMMENDED READINGS:

1. Ganga, G. and Chetty, S. (2008) An Introduction to Sericulture. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Ganga, G., (2003) Comprehensive Sericulture- Vol.-2 Silkworm Rearing and Silk Reeling, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
3. Singh, Tribhuwan and Sarachandra, Beera (2004) Principles and Techniques of Silkworm Seed Production. Discovery Publishing House, New Delhi.
4. Rajan, R. K., and Himantharaj, M. T. (2005) Silkworm Rearing Technology. Central Silk Board, Bangalore.
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12. , D. Halliyal, V.G. *et. al.*, (2000) Mulberry Silk Reeling Technology. Oxford and IBH publishing Co. Pvt.Ltd, New Delhi.
13. Sonwalker, T.N. (2001) Hand Book of Silk Technology. New Age International (P) limited, New Delhi and Mumbai.
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1. **15 marks shall be earmarked for Internal Assessment** (05 Marks for Attendance and 10 Marks for Internal Assessment Test).
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 - a. Attendance of 75-80% = 01 Marks
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 - c. Attendance of 86-90% = 03 Marks
 - d. Attendance of 91-95% = 04 Marks
 - e. Attendance of 96-100% = 05 Marks
3. **Pattern of Internal Assessment Test of 10 Marks:**
 - a. The test shall comprise of two sections:
 - i. **Section-A (Short Answer Type Questions)**
 1. Attempt any four questions of 1.5 marks each out of six questions. (4×1.5=6 Marks).
 - ii. **Section – B (Long Answer Type Questions)**
 2. Attempt any one question of 04 marks out of two questions. (1×4=4 Marks).
4. **Pattern of External End-Semester Examination of 60 marks:**
 - a. The paper shall comprise of two sections:
 - i. **Section-A (Short answer types questions)**
 1. 04 questions having one question from each Unit of 03 marks. (4×3=12 Marks).
 - ii. **Section-B (Long answer type questions)**
 1. Total 08 questions having 02 Questions from each unit of 12 marks.
 2. Attempt any one Question from each Unit. (4×12=48 Marks).

Signatures:

- | | | | | |
|--|--|--|---|---|
| 1.  | 2.  | 3.  | 4.  | 5.  |
| 6.  | 7.  | 8.  | 9.  | 10.  |

SHRI KRISHAN CHANDER GOVERNMENT DEGREE COLLEGE POONCH
AUTONOMOUS (Affiliated to University of Jammu)
Department of Sericulture
 Four Year Undergraduate Programme (FYUGP) SERICULTURE
Detailed Syllabus for the Examination to be held in Year Dec. 2026, 2027 & 2028
(SKILL ENHANCEMENT COURSE)
UG SEMESTER-I

COURSE CODE	:	USESEPR-151
COURSE TITLE	:	MULBERRY PRODUCTION TECHNOLOGY
COURSE CREDITS	:	03 (01 Theory + 02 Practicals)
CREDIT HOURS	:	75 (15 Theory + 60 Practicals)
INTERNAL ASSESSMENT	:	35 MARKS (10+25) (1.5 hours)
EXTERNAL EXAMINATION	:	40 MARKS (15+25) (2.5 hours)
TOTAL MARKS	:	75

Course Objectives: The course aims to:

- Understand the biology and cultivation of mulberry.
- Develop practical skills in mulberry garden establishment and management.
- Learn mulberry propagation and production techniques.
- Gain knowledge of fertilizers, weeds and harvesting practices.
- Acquire field exposure to mulberry cultivation and farm management.

Course Outcomes: After completing the course, students will be able to:

- Explain the biology and importance of mulberry.
- Apply techniques for mulberry garden establishment and maintenance.
- Demonstrate mulberry propagation and production practices.
- Identify fertilizers, weeds and use suitable harvesting methods.
- Perform basic field operations in mulberry cultivation.

UNIT-I: Biology of Mulberry

(15 Hours.)

- 1.1 Taxonomy of mulberry, different varieties of mulberry with special reference to J & K.
- 1.2 Economic importance of mulberry.
- 1.3 Essential elements required for mulberry growth and their types. Importance of soils with reference to mulberry cultivation.
- 1.4 Propagation of mulberry- sexual and asexual methods.

Unit-II: Practical Mulberry Garden Establishment

(30 Hours.)

- 2.1 Practical on site selection and land preparation of mulberry garden.

- 2.2 Practical on calculation of fertilizer dosage and application methods.
- 2.3 Demonstration of fertilizer application schedule in mulberry garden.
- 2.4 Demonstration of different pruning methods in mulberry plants.
- 2.5 Identification and use of pruning tools.
- 2.6 Identification of common weeds found in mulberry garden.
- 2.7 Practical on manual weeding and intercultural operations.
- 2.8 Study of importance of weed control in mulberry cultivation.
- 2.9 Demonstration of leaf and shoot harvesting methods.
- 2.10 Practical on preservation and storage of harvested mulberry leaves.

Unit-III: Practical Mulberry Production Technology

(30 Hours.)

- 3.1 Morphology of important mulberry cultivators.
- 3.2 Propagation methods:
 - a. Preparation of nursery beds.
 - b. Collection of fruits and separation of viable seeds, seed sowing, seed bed maintenance and raising of seedlings.
- 3.3 Selection of material for cutting preparation.
- 3.4 Farm implements and Machinery.
- 3.5 Identification of common weeds of mulberry.
- 3.6 Identification of different types of fertilizers, Preparation of compost.
- 3.7 Visits to Govt. Mulberry farm and interaction with Officer Incharge.

RECOMMENDED READINGS

1. Ganga, G. and Chetty, S. (2008) An Introduction to Sericulture. Oxford and IBH Publishing Co.Pvt. Ltd., New Delhi.
2. Ganga, G., (2003) Comprehensive Sericulture- Vol.-1 Moriculture, Oxford and IBH PublishingCo. Pvt. Ltd., New Delhi.
3. Ganga, G., (2003) Comprehensive Sericulture- Vol.-2 Silkworm Rearing and Silk Reeling, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
4. Kamili, A.S. and Masoodi, A.M. (2004). Principles of Temperate Sericulture. KalyaniPublishers, New Delhi-110002.
5. Jaswal, K., Trivedi, P.S., Pandey, B.N. and Khatri, R.K. (2009) Moriculture. APH PublishingCorporation, New Delhi.
6. Patnaik,R.K. (2008) Mulberry for Animal Production. Biotech Books, Delhi.
7. Rajanna, L., Das, P.K., Ravindran, S., Bhogेशha, K., Mishra, R.K., Singhvi, N.R., Katiyar, R.S.and Jayasan, H. (Ed.2005) Mulberry Cultivation and Physiology. Central Silk Board, Bangalore.
8. Govindaiah, Gupta, V.P., Sharma, D.D., Rajadurai, S. and Naik, Nishitta (2005) Mulberry CropProtection. Central Silk Board, Bangalore.
9. Aruga, H. Principles of Sericulture. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi,Bombay and Calcutta.
10. Khan, M.A., Dhar, A., Zeya, S.B and Trag, A.R. (2004) Pests and Diseases of Mulberry and their Management. Published by Bishan Singh

and Mahendra Pal Singh, New ConnaughtPalace, Dehradun.
11. Mulberry Crop Protection (CSB).

TESTING AND EVALUATION:

Examination Pattern shall be as under:

1. **35 marks shall be earmarked for Internal Assessment** (10 marks from theory and 25 marks from practical part)

Distribution of Internal Practical Marks	
Internal Practical Assessment (Daily evaluation of practical records/viva-voice/attendance etc.)	Attendance = 05 marks
	Day to day performance = 05 marks
	Practical Test = 10 marks
	Viva-voice = 05 marks
Total	25 Marks

2. **Scheme for award of marks for attendance:**

- a. Attendance of 75-80% = 01 Marks
- b. Attendance of 81-85% = 02 Marks
- c. Attendance of 86-90% = 03 Marks
- d. Attendance of 91-95% = 04 Marks
- e. Attendance of 96-100% = 05 Marks

3. **Pattern of Internal Assessment Test of 20 Marks:**

- a. The test shall comprise of two sections:
 - i. **Section-A (Short Answer Type Questions)**
 1. Attempt any two questions of 5 marks each out of three questions from Unit-1. (2×5=10 Marks).
 - ii. **Section – B (Long Answer Type Questions)**
 1. Attempt any one question of 10 marks out of two questions from Unit-2. (1×10=10 Marks).

4. **Pattern of External End-Semester Examination of 40 marks:** (15 marks from theory and 25 marks from practical part)

Distribution of External Practical Marks	
External Practical Examination (100% syllabus)	Examination: 20 marks (Two practicals of 10 marks each)
	Viva-voice = 05 marks
Total	25 Marks

- a. The paper shall comprise of two sections (35 marks):
 - i. **Section-A (Short answer types questions)**
 1. Attempt any 3 questions of 05 marks out of 05 questions. (3×5=15 Marks).

ii. **Section-B (Long answer type questions)**

1. Two practicals of 10 mark each. ($2 \times 10 = 20$ Marks).

Signatures:

1. 

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3. 

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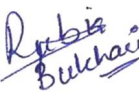
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Shri Krishan Chander Government Degree College Poonch

AUTONOMOUS (Affiliated to University of Jammu)



Department of Sericulture

SYLLABUS AND COURSES OF STUDY IN SERICULTURE

(For the Examination to be held in May 2027, 2028 & 2029)

SERICULTURE COURSE

UG

SEMESTER - II

UNDER

NEP-2020

SEMESTER-II

Sl. No.	Course Type	Course Code	Course Title	Credits	Internal Marks	External Marks	Total
1.	Major	UMJSETH-201	Silkworm Rearing Technology	04	20	80	100
2.	Major Practical	UMJSEPR-211	Silkworm Rearing Technology	02	25	25	50
3.	Minor	UMISETH-221	Silkworm Biology & Practical Aspects of Silkworm Rearing	04	20	80	100
4.	Minor Practical	UMISEPR-231	Silkworm Biology & Practical Aspects of Silkworm Rearing	02	25	25	50
5.	MDC	UMDSETH-241	General Sericulture – II	03	15	60	75
6.	SEC	USESEPR-251	Practices of Silkworm Rearing	03 (1+2)	35 (10+25)	40 (15+25)	75 (25+50)

SHRI KRISHAN CHANDER GOVERNMENT DEGREE COLLEGE POONCH
AUTONOMOUS (Affiliated to University of Jammu)
Department of Sericulture
 Four Year Undergraduate Programme (FYUGP) SERICULTURE
Detailed Syllabus for the Examination to be held in Year May 2027, 2028 & 2029
(MAJOR COURSE)
UG SEMESTER-II

COURSE CODE	:	UMJSETH-201
COURSE TITLE	:	SILKWORM REARING TECHNOLOGY
COURSE CREDITS	:	04
CREDIT HOURS	:	60
INTERNAL ASSESSMENT	:	20 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	80 MARKS (3 hours)
TOTAL MARKS	:	100

Course Objectives:

- Understand the biology and life cycle of the silkworm.
- Learn scientific methods of silkworm rearing and management.
- Acquire knowledge of incubation, chawki, and late-age rearing practices.
- Understand cocoon production, harvesting, and post-harvest handling.

Course Outcomes: After completing the course, students will be able to:

- Explain the biology, anatomy, and physiology of *Bombyx mori*.
- Apply scientific silkworm rearing and disease prevention practices.
- Perform incubation, brushing, chawki and late-age rearing operations.
- Carry out mounting, cocoon harvesting, sorting, storage and transportation effectively.

UNIT I:

(15 Hours)

- 1.1 Systematic position of silkworm and salient features of order Lepidoptera.
- 1.2 Life cycle of *Bombyx mori*; Morphology of egg, larvae, pupae and adult.
- 1.3 Moulting – signs of moulting and care during pre-moulting, moulting and post-moulting stage - hormonal control.
- 1.4 Morphology and physiology of mouth parts, digestive, excretory and reproductive system of silkworm larvae. Structure and function of silk gland.

UNIT II:

(15 Hours)

- 2.1 Silkworm rearing house - Requirement for ideal rearing house- orientation, selection of site and size of rearing house representing CSB model.
- 2.2 Rearing appliances – young age (chawki) and late age rearing appliances.
- 2.3 Disinfection - objectives and methods. Disinfectants – types and their concentrations.

2.4 Estimation of leaf quality and leaf yield for silkworm rearing.

UNIT III: (15 Hours)

- 3.1 Incubation - methods of incubation; Black boxing – its significance and environmental conditions required for incubation and its influence on egg development.
- 3.2 Brushing - preparation for brushing, brushing methods - selection of leaf for brushing, advantages and disadvantages of different types of brushing methods.
- 3.3 Early age rearing (chawki rearing) - environmental conditions required for chawki rearing. Chawki rearing methods. Leaf requirement for early age worms, frequency of feeding spacing, bed cleaning and disinfection schedules.
- 3.4 Late age rearing - environmental conditions required for late age rearing. Different rearing methods- shelf, shoot and floor rearing - Advantages and disadvantages. Leaf requirement for late age worms, frequency of feeding, spacing, bed cleaning and disinfection schedules.

UNIT IV (15 Hours)

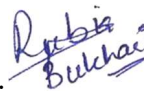
- 4.1 Mounting: Preparation for mounting - methods of mounting, mounting density.
- 4.2 Types of mountages-advantages and disadvantages of different mountages.
- 4.3 Spinning: Spinning behavior of silkworms, environmental conditions required for spinning.
- 4.4 Cocoon harvesting, cocoon sorting, storage/preservation, packaging and transportation of cocoons.

Recommended Readings:

1. Ganga, G., (2003) Comprehensive Sericulture- Vol.-1 Moriculture, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Ganga, G., (2003) Comprehensive Sericulture- Vol.-2 Silkworm Rearing and Silk Reeling, Oxford and IBHPublishing Co. Pvt. Ltd., New Delhi.
3. Singh, Tribhuwan and Sarachandra, Beera (2004) Principles and Techniques of Silkworm Seed Production. Discovery Publishing House, New Delhi.
4. Rajan, R. K., and Himantharaj, M. T. (2005) Silkworm Rearing Technology. Central Silk Board, Bangalore.
5. Johnson, M. and Kesary, M. (2020). Sericulture. (Ed. 1). Saras Publication.
6. Sarkar, S. (2022). A Textbook on Sericulture. (Ed. 1). Publisher Techno World.
7. Sarwar, S., Hussain, I. and Ahmad, A. Introduction to Sericulture Industry (Latest Edition). Bisma Books .
8. Chawala, N. K., (2017). Comprehensive Sericulture: Silkworm Rearing and Silk Rearing. Indian Books and Periodicals.
9. Madan Mohan Rao, M. (2019). An Introduction to Sericulture. (Ed. 2). B S Publications.
10. Ramamoorthy, R., Umaphathy, G., Ambethgar, V. and Selvanarayanan, V. (2019). Glossary of Sericulture. (Ed.1). Aknik Publications.
11. Bhaskar, R. N. and Anusha, H. G. (2002) Objective Question Bank on Sericulture, Agri Biovet Press.

TESTING AND EVALUATION:**Examination Pattern shall be as under:**

1. **20 marks shall be earmarked for Internal Assessment** (05 Marks for Attendance and 15 Marks for Internal Assessment Test).
2. **Scheme for award of marks for attendance:**
 - a. Attendance of 75-80% = 01 Marks
 - b. Attendance of 81-85% = 02 Marks
 - c. Attendance of 86-90% = 03 Marks
 - d. Attendance of 91-95% = 04 Marks
 - e. Attendance of 96-100% = 05 Marks
3. **Pattern of Internal Assessment Test of 15 Marks:**
 - a. The test shall comprise of two sections:
 - i. **Section-A (Short Answer Type Questions)**
 1. Attempt any five questions of 02 marks each out of eight questions. **(5×2=10 Marks).**
 - ii. **Section – B (Long Answer Type Questions)**
 1. Attempt any one question of 05 marks out of two questions. **(1×5=5 Marks).**
4. **Pattern of External End-Semester Examination of 80 marks:**
 - a. The paper shall comprise of three sections:
 - i. **Section-A (Very short answer types questions)**
 1. 06 questions of 01 mark each. **(6×1=06 Marks).**
 2. 05 questions of 02 marks each. **(5×2=10 Marks).**
 - ii. **Section-B (Short answer type questions)**
 1. Total 08 questions (02 Questions from each unit) of 04 marks each.
 2. Attempt any one Question from each Unit. **(4×4=16 Marks).**
 - iii. **Section-C (Long Answer Type Questions)**
 1. Total 08 questions (02 questions from each unit) of 12 marks each.
 2. Attempt any one question from each unit. **(4×12=48 Marks).**

Signatures:1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 

SHRI KRISHAN CHANDER GOVERNMENT DEGREE COLLEGE POONCH
AUTONOMOUS (Affiliated to University of Jammu)
Department of Sericulture
Four Year Undergraduate Programme (FYUGP) SERICULTURE
Detailed Syllabus for the Examination to be held in Year May 2027, 2028 & 2029
(MAJOR PRACTICAL COURSE)
UG SEMESTER-II

COURSE CODE	:	UMJSEPR-211
COURSE TITLE	:	SILKWORM REARING TECHNOLOGY
COURSE CREDITS	:	02
CREDIT HOURS	:	60
INTERNAL ASSESSMENT	:	25 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	25 MARKS (1.5 hours)
TOTAL MARKS	:	50

Course Objectives:

- Understand the morphology and anatomy of the silkworm at different life stages.
- Develop practical skills in silkworm rearing, disinfection, and use of rearing appliances.
- Learn the identification and use of different mountages and cocoon types.
- Acquire hands-on experience in cocoon sorting, storage, preservation, packaging and transportation.

Course Outcomes: Upon successful completion of the practical course, students will be able to:

- Identify the life stages, anatomy, and silk gland of the silkworm.
- Perform silkworm rearing using appropriate rearing houses, appliances and disinfection practices.
- Demonstrate the use of different mountages and recognize various cocoon types.
- Carry out cocoon sorting, storage, preservation, packaging and transportation following standard practices.

PRACTICUM

(60 Hours)

1. Morphology of Egg, Larvae, Pupae and Moth/Adult.
2. Morphology and anatomy of silkworm larvae:
 - a. Mouth Parts
 - b. Digestive system
 - c. Excretory System
 - d. Reproductive system of silk moth/adult.
3. Silk Gland
4. Model rearing house-types of rearing houses.
5. Rearing Appliances.
6. Disinfection-Methods of disinfection.
7. Disinfectants - types of disinfectants and preparation of disinfectants.

8. Rearing of silkworms.
9. Types of mountages.
10. Different types of cocoons.
11. Cocoon sorting, storage, preservation, packaging and transportation of cocoons.

Recommended Readings:

1. Ganga, G., (2003) Comprehensive Sericulture- Vol.-1 Moriculture, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Ganga, G., (2003) Comprehensive Sericulture- Vol.-2 Silkworm Rearing and Silk Reeling, Oxford and IBHPublishing Co. Pvt. Ltd., New Delhi.
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8. Chawala, N. K., (2017). Comprehensive Sericulture: Silkworm Rearing and Silk Rearing. Indian Books and Periodicals.
9. Madan Mohan Rao, M. (2019). An Introduction to Sericulture. (Ed. 2). B S Publications.
10. Ramamoorthy, R., Umaphathy, G., Ambethgar, V. and Selvanarayanan, V. (2019). Glossary of Sericulture. (Ed.1). Aknik Publications.
11. Bhaskar, R. N. and Anusha, H. G. (2002) Objective Question Bank on Sericulture, Agri Biovet Press.

DISTRIBUTION OF MARKS:

A.	Internal Assessment (Daily evaluation of practical records/viva-voice/attendance etc.)	Attendance = 05 marks
		Day to day performance = 05 marks
		Practical Test = 10 marks
		Viva-voice = 05 marks
B.	External examination (100% syllabus)	Examination: 20 marks (Two practicals of 10 marks each)
		Viva-voice = 05 marks

Scheme for award of marks for attendance:

- a. Attendance of 75-80% = 01 Marks
- b. Attendance of 81-85% = 02 Marks
- c. Attendance of 86-90% = 03 Marks
- d. Attendance of 91-95% = 04 Marks
- e. Attendance of 96-100% = 05 Marks

Signatures:1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 

SHRI KRISHAN CHANDER GOVERNMENT DEGREE COLLEGE POONCH
AUTONOMOUS (Affiliated to University of Jammu)
Department of Sericulture
 Four Year Undergraduate Programme (FYUGP) SERICULTURE
Detailed Syllabus for the Examination to be held in Year May 2027, 2028 & 2029
(MINOR COURSE)
UG SEMESTER-II

COURSE CODE	:	UMISETH-221
COURSE TITLE	:	SILKWORM BIOLOGY & PRACTICAL ASPECTS OF SILKWORM REARING
COURSE CREDITS	:	04
CREDIT HOURS	:	60
INTERNAL ASSESSMENT	:	20 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	80 MARKS (3 hours)
TOTAL MARKS	:	100

Course Objectives:

- Understand the biology and life cycle of the silkworm.
- Learn scientific methods of silkworm rearing and management.
- Acquire knowledge of incubation, chawki, and late-age rearing practices.
- Understand cocoon production, harvesting, and post-harvest handling.

Course Outcomes: After completing the course, students will be able to:

- Explain the biology, anatomy, and physiology of *Bombyx mori*.
- Apply scientific silkworm rearing and disease prevention practices.
- Perform incubation, brushing, chawki and late-age rearing operations.
- Carry out mounting, cocoon harvesting, sorting, storage and transportation effectively.

UNIT I:

(15 Hours)

- 1.1 Systematic position of silkworm and salient features of order Lepidoptera.
- 1.2 Life cycle of *Bombyx mori*; Morphology of egg, larvae, pupae and adult.
- 1.3 Moulting – signs of moulting and care during pre-moulting, moulting and post-moulting stage - hormonal control.
- 1.4 Morphology and physiology of mouth parts, digestive, excretory and reproductive system of silkworm larvae. Structure and function of silk gland.

UNIT II:

(15 Hours)

- 2.1 Silkworm rearing house - Requirement for ideal rearing house- orientation, selection of site and size of rearing house representing CSB model.
- 2.2 Rearing appliances – young age (chawki) and late age rearing appliances.
- 2.3 Disinfection - objectives and methods. Disinfectants – types and their concentrations.

2.4 Estimation of leaf quality and leaf yield for silkworm rearing.

UNIT III: (15 Hours)

- 3.1 Incubation - methods of incubation; Black boxing – its significance and environmental conditions required for incubation and its influence on egg development.
- 3.2 Brushing - preparation for brushing, brushing methods - selection of leaf for brushing, advantages and disadvantages of different types of brushing methods.
- 3.3 Early age rearing (chawki rearing) - environmental conditions required for chawki rearing. Chawki rearing methods. Leaf requirement for early age worms, frequency of feeding spacing, bed cleaning and disinfection schedules.
- 3.4 Late age rearing - environmental conditions required for late age rearing. Different rearing methods- shelf, shoot and floor rearing - Advantages and disadvantages. Leaf requirement for late age worms, frequency of feeding, spacing, bed cleaning and disinfection schedules.

UNIT IV (15 Hours)

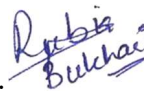
- 4.1 Mounting: Preparation for mounting - methods of mounting, mounting density.
- 4.2 Types of mountages-advantages and disadvantages of different mountages.
- 4.3 Spinning: Spinning behavior of silkworms, environmental conditions required for spinning.
- 4.4 Cocoon harvesting, cocoon sorting, storage/preservation, packaging and transportation of cocoons.

Recommended Readings:

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TESTING AND EVALUATION:**Examination Pattern shall be as under:**

1. **20 marks shall be earmarked for Internal Assessment** (05 Marks for Attendance and 15 Marks for Internal Assessment Test).
2. **Scheme for award of marks for attendance:**
 - a. Attendance of 75-80% = 01 Marks
 - b. Attendance of 81-85% = 02 Marks
 - c. Attendance of 86-90% = 03 Marks
 - d. Attendance of 91-95% = 04 Marks
 - e. Attendance of 96-100% = 05 Marks
3. **Pattern of Internal Assessment Test of 15 Marks:**
 - a. The test shall comprise of two sections:
 - i. **Section-A (Short Answer Type Questions)**
 1. Attempt any five questions of 02 marks each out of eight questions. **(5×2=10 Marks).**
 - ii. **Section – B (Long Answer Type Questions)**
 1. Attempt any one question of 05 marks out of two questions. **(1×5=5 Marks).**
4. **Pattern of External End-Semester Examination of 80 marks:**
 - a. The paper shall comprise of three sections:
 - i. **Section-A (Very short answer types questions)**
 1. 06 questions of 01 mark each. **(6×1=06 Marks).**
 2. 05 questions of 02 marks each. **(5×2=10 Marks).**
 - ii. **Section-B (Short answer type questions)**
 1. Total 08 questions (02 Questions from each unit) of 04 marks each.
 2. Attempt any one Question from each Unit. **(4×4=16 Marks).**
 - iii. **Section-C (Long Answer Type Questions)**
 1. Total 08 questions (02 questions from each unit) of 12 marks each.
 2. Attempt any one question from each unit. **(4×12=48 Marks).**

Signatures:1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 

SHRI KRISHAN CHANDER GOVERNMENT DEGREE COLLEGE POONCH
AUTONOMOUS (Affiliated to University of Jammu)
Department of Sericulture
 Four Year Undergraduate Programme (FYUGP) SERICULTURE
Detailed Syllabus for the Examination to be held in Year May 2027, 2028 & 2029
(MINOR PRACTICAL COURSE)
UG SEMESTER-II

COURSE CODE	:	UMISEPR-231
COURSE TITLE	:	SILKWORM BIOLOGY & PRACTICAL ASPECTS OF SILKWORM REARING
COURSE CREDITS	:	02
CREDIT HOURS	:	60
INTERNAL ASSESSMENT	:	25 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	25 MARKS (1.5 hours)
TOTAL MARKS	:	50

Course Objectives:

- Understand the morphology and anatomy of the silkworm at different life stages.
- Develop practical skills in silkworm rearing, disinfection, and use of rearing appliances.
- Learn the identification and use of different mountages and cocoon types.
- Acquire hands-on experience in cocoon sorting, storage, preservation, packaging and transportation.

Course Outcomes: Upon successful completion of the practical course, students will be able to:

- Identify the life stages, anatomy, and silk gland of the silkworm.
- Perform silkworm rearing using appropriate rearing houses, appliances and disinfection practices.
- Demonstrate the use of different mountages and recognize various cocoon types.
- Carry out cocoon sorting, storage, preservation, packaging and transportation following standard practices.

PRACTICUM

(60Hours)

1. Morphology of Egg, Larvae, Pupae and Moth/Adult.
2. Morphology and anatomy of silkworm larvae:
 - a. Mouth Parts
 - b. Digestive system
 - c. Excretory System
 - d. Reproductive system of silk moth/adult.
3. Silk Gland
4. Model rearing house-types of rearing houses.
5. Rearing Appliances.
6. Disinfection-Methods of disinfection.
7. Disinfectants - types of disinfectants and preparation of disinfectants.

8. Rearing of silkworms.
9. Types of mountages.
10. Different types of cocoons.
11. Cocoon sorting, storage, preservation, packaging and transportation of cocoons.

Recommended Readings:

1. Ganga, G., (2003) Comprehensive Sericulture- Vol.-1 Moriculture, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Ganga, G., (2003) Comprehensive Sericulture- Vol.-2 Silkworm Rearing and Silk Reeling, Oxford and IBHPublishing Co. Pvt. Ltd., New Delhi.
3. Singh, Tribhuwan and Sarachandra, Beera (2004) Principles and Techniques of Silkworm Seed Production. Discovery Publishing House, New Delhi.
4. Rajan, R. K., and Himantharaj, M. T. (2005) Silkworm Rearing Technology. Central Silk Board, Bangalore.
5. Johnson, M. and Kesary, M. (2020). Sericulture. (Ed. 1). Saras Publication.
6. Sarkar, S. (2022). A Textbook on Sericulture. (Ed. 1). Publisher Techno World.
7. Sarwar, S., Hussain, I. and Ahmad, A. Introduction to Sericulture Industry (Latest Edition). Bisma Books .
8. Chawala, N. K., (2017). Comprehensive Sericulture: Silkworm Rearing and Silk Rearing. Indian Books and Periodicals.
9. Madan Mohan Rao, M. (2019). An Introduction to Sericulture. (Ed. 2). B S Publications.
10. Ramamoorthy, R., Umaphathy, G., Ambethgar, V. and Selvanarayanan, V. (2019). Glossary of Sericulture. (Ed.1). Aknik Publications.
11. Bhaskar, R. N. and Anusha, H. G. (2002) Objective Question Bank on Sericulture, Agri Biovet Press.

DISTRIBUTION OF MARKS:

A.	Internal Assessment (Daily evaluation of practical records/viva-voice/attendance etc.)	Attendance = 05 marks
		Day to day performance = 05 marks
		Practical Test = 10 marks
		Viva-voice = 05 marks
B.	External examination (100% syllabus)	Examination: 20 marks (Two practicals of 10 marks each)
		Viva-voice = 05 marks

Scheme for award of marks for attendance:

- a. Attendance of 75-80% = 01 Marks
- b. Attendance of 81-85% = 02 Marks
- c. Attendance of 86-90% = 03 Marks
- d. Attendance of 91-95% = 04 Marks
- e. Attendance of 96-100% = 05 Marks

Signatures:1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 

SHRI KRISHAN CHANDER GOVERNMENT DEGREE COLLEGE POONCH
AUTONOMOUS (Affiliated to University of Jammu)
Department of Sericulture
Four Year Undergraduate Programme (FYUGP) SERICULTURE
Detailed Syllabus for the Examination to be held in Year May 2027, 2028 & 2029
(MULTIDISCIPLINARY COURSE)
UG SEMESTER-II

COURSE CODE	:	UMDSETH-241
COURSE TITLE	:	GENERAL SERICULTURE – II
COURSE CREDITS	:	03
CREDIT HOURS	:	45
INTERNAL ASSESSMENT	:	15 MARKS (1.5 hours)
EXTERNAL EXAMINATION	:	60 MARKS (2.5 hours)
TOTAL MARKS	:	75

Course Objectives:

- Understand the fundamentals and importance of sericulture.
- Learn mulberry cultivation and silkworm rearing.
- Gain knowledge of cocoon processing and sericulture by-products.
- Explore entrepreneurship and government support in sericulture.
- Develop a basic understanding of sustainable sericulture practices.

Course Outcomes: After completing the course, students will be able to:

- Explain the basics of sericulture.
- Describe mulberry cultivation and silkworm rearing.
- Identify cocoon types and sericulture by-products.
- Recognize entrepreneurship opportunities and government schemes.
- Apply basic knowledge of sericulture in practice.

UNIT-I

(11 Hours)

- 1.1 Introduction to Sericulture: Definition, Types of silk.
- 1.2 Scope and importance of sericulture.
- 1.3 Characteristics of sericulture industry.
- 1.4 Importance of sericulture in rural economy and women empowerment.

UNIT-II

(12 Hours)

- 2.1 Taxonomy and economic importance of mulberry.
- 2.2 Species and varieties of mulberry.
- 2.3 Climatic and soil requirements for mulberry cultivation.
- 2.4 Propagation methods of mulberry.

UNIT-III

(12 Hours)

- 3.1 Disinfection in sericulture: Methods and Types.
- 3.2 Life cycle of mulberry silkworm. Morphology of egg, larva, pupa and moth.
- 3.3 Rearing appliances and rearing house.
- 3.4 Silkworm rearing: young age and late age silkworm rearing.

UNIT-IV

(10 Hours)

- 4.1 Cocoon processing and different types of cocoons.
- 4.2 By-products of sericulture and its utilization.
- 4.3 Entrepreneurship opportunities in sericulture and silk industry.
- 4.4 Government schemes and role of Central Silk Board.

RECOMMENDED READINGS:

1. Ganga, G. and Chetty, S. (2008) An Introduction to Sericulture. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Ganga, G., (2003) Comprehensive Sericulture- Vol.-2 Silkworm Rearing and Silk Reeling, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
3. Singh, Tribhuvan and Sarachandra, Beera (2004) Principles and Techniques of Silkworm Seed Production. Discovery Publishing House, New Delhi.
4. Rajan, R. K., and Himantharaj, M. T. (2005) Silkworm Rearing Technology. Central Silk Board, Bangalore.
5. Johnson, M. and Kesary, M. (2020). Sericulture. (Ed. 1). Saras Publication.
6. Sarkar, S. (2022). A Textbook on Sericulture. (Ed. 1). Publisher Techno World.
7. Sarwar, S., Hussain, I. and Ahmad, A. Introduction to Sericulture Industry (Latest Edition). B i s m a B o o k s .
8. Chawala, N. K., (2017). Comprehensive Sericulture: Silkworm Rearing and Silk Rearing. Indian Books and Periodicals.
9. Madan Mohan Rao, M. (2019). An Introduction to Sericulture. (Ed. 2). B S Publications.
10. Ramamoorthy, R., Umapathy, G., Ambethgar, V. and Selvanarayanan, V. (2019). Glossary of Sericulture (Ed. 1) Aknik Publications
11. Bhaskar, R. N. and Anusha, H. G. (2002) Objective Question Bank on Sericulture, Agri Biovet Press.
12. D. Halliyal, V.G. *et. al.*, (2000) Mulberry Silk Reeling Technology. Oxford and IBH publishing Co. Pvt.Ltd, New Delhi.
13. Sonwalker, T.N. (2001) Hand Book of Silk Technology. New Age International (P) limited, New Delhi and Mumbai.
14. Ananthanarayan, S.K. (2008) Silk Reeling. Biotech Books, Delhi.

TESTING AND EVALUATION:

Examination Pattern shall be as under:

1. **15 marks shall be earmarked for Internal Assessment** (05 Marks for Attendance and 10 Marks for Internal Assessment Test).
2. **Scheme for award of marks for attendance:**
 - a. Attendance of 75-80% = 01 Marks
 - b. Attendance of 81-85% = 02 Marks

- c. Attendance of 86-90% = 03 Marks
- d. Attendance of 91-95% = 04 Marks
- e. Attendance of 96-100% = 05 Marks
- 3. **Pattern of Internal Assessment Test of 10 Marks:**
 - a. The test shall comprise of two sections:
 - i. **Section-A (Short Answer Type Questions)**
 - 1. Attempt any four questions of 1.5 marks each out of six questions. (4×1.5=6 Marks).
 - ii. **Section – B (Long Answer Type Questions)**
 - 1. Attempt any one question of 04 marks out of two questions. (1×4=4 Marks).
- 4. **Pattern of External End-Semester Examination of 60 marks:**
 - a. The paper shall comprise of two sections:
 - i. **Section-A (Short answer types questions)**
 - 1. 04 questions having one question from each Unit of 03 marks. (4×3=12 Marks).
 - ii. **Section-B (Long answer type questions)**
 - 1. Total 08 questions having 02 Questions from each unit of 12 marks.
 - 2. Attempt any one Question from each Unit. (4×12=48 Marks).

Signatures:

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SHRI KRISHAN CHANDER GOVERNMENT DEGREE COLLEGE POONCH
AUTONOMOUS (Affiliated to University of Jammu)
Department of Sericulture
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Detailed Syllabus for the Examination to be held in Year May 2027, 2028 & 2029
(SKILL ENCHANCEMENT COURSE)
UG SEMESTER-II

COURSE CODE	:	USESEPR-251
COURSE TITLE	:	PRACTICES OF SILKWORM REARING
COURSE CREDITS	:	03 (01 Theory + 02 Practicals)
CREDIT HOURS	:	75 (15 Theory + 60 Practicals)
INTERNAL ASSESSMENT	:	35 MARKS (10+25) (1.5 hours)
EXTERNAL EXAMINATION	:	40 MARKS (15+25) (2.5 hours)
TOTAL MARKS	:	75

Course Objectives:

- Understand the fundamentals of scientific silkworm rearing.
- Develop practical skills in silkworm management and disease prevention.
- Learn cocoon production and quality assessment.
- Gain field exposure to sericulture practices.

Course Outcomes: After completing the course, students will be able to:

- Perform scientific silkworm rearing and maintain suitable rearing conditions.
- Apply disinfection and disease management practices.
- Assess cocoon quality and use rearing equipment effectively.
- Demonstrate practical skills in silkworm rearing and cocoon production.

UNIT-I

(15 Hours)

- 1.1 Introduction to Silkworm Rearing; life cycle of silkworm *Bombyx mori* L.
- 1.2 Rearing appliances and their uses.
- 1.3 Disinfection and its methods; common disinfectants.
- 1.4 Chawki and late-age silkworm rearing.
- 1.5 Concept of bed cleaning, frequency of bed cleaning and feeding of worms.
- 1.6 Common diseases of silkworm: Symptoms and preventive measures.

Unit-II

(30 Hours)

- 2.1 Practical on maintaining ideal temperature and humidity in rearing house.
- 2.2 Demonstration of use of thermometers, hygrometers and humidifiers.

- 2.3 Observation and recording of environmental conditions during silkworm rearing.
- 2.4 Practical on brushing of newly hatched larvae.
- 2.5 Demonstration of proper spacing techniques during different larval stages.
- 2.6 Calculation of spacing requirement for chawki and late age worms.
- 2.7 Observation of pre-moulting and moulting symptoms in silkworm.
- 2.8 Practical on management and care of worms during moulting period.
- 2.9 Visit to chawki rearing centre (CRC) or chawki garden for field exposure.
- 2.10 Identification and study of different mountages used in sericulture.
- 2.11 Sorting and grading of cocoons based on quality parameters.

Unit-III

(30 Hours)

- 3.1 Cocoon characters of popular uni, bi, and multivoltine races.
- 3.2 C.S.B Model rearing house and different types of rearing houses.
- 3.3 Rearing appliances
- 3.4 Disinfection-Types of disinfectants, effective concentration of different disinfectants.
- 3.5 Incubation of silkworm eggs- black boxing, percentage of hatching, recording of temperature and humidity.
- 3.6 Estimation of leaf yield, moisture contents and leaf harvesting methods.
- 3.7 Mulberry leaf estimation -Harvesting and preservation techniques -leaf selection for different instars.
- 3.8 Moulting -identification of moulting, larvae, moulting care
- 3.9 Mountages and harvesting, cocoon assessment and preparation of harvest report.
- 3.10 Visit to local progressive sericulturists.
- 3.11 Rearing of silkworms (Compulsory)

RECOMMENDED READINGS

1. Ganga, G. and Chetty, S. (2008) An Introduction to Sericulture. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Ganga, G., (2003) Comprehensive Sericulture- Vol.-1 Moriculture, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
3. Ganga, G., (2003) Comprehensive Sericulture- Vol.-2 Silkworm Rearing and Silk Reeling, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
4. Anathanarayanan, S.K. (2008) Silkworm Rearing. Biotech Books, New Delhi.
5. Patnaik, R.K. (2008) Sericulture Manual. Biotech Books, New Delhi.
6. Dandin, S.B., Jayaswal, J. and Giridhar, K., Handbook of Sericulture Technologies. Central Silk Board, Bangalore.
7. Ullal, S.R., Narasimhanna, M.N. (Ed. 1994) Handbook of Practical Sericulture. Central Silk Board, Bangalore.
8. Rajan, R.K., and Himantharaj, M.T. (Ed. 2005) Silkworm Rearing Technology. Central Silk Board, Bangalore.
9. Aruga, H. Principles of Sericulture. Oxford and IBH Publishing Co.Pvt. Ltd. New Delhi, Bombay and Calcutta.
10. Narasiah, M. Laxmi, R. and Raya, G (1999) Development of Sericulture. Discovery Publishing House, New Delhi.

TESTING AND EVALUATION:**Examination Pattern shall be as under:**

1. **35 marks shall be earmarked for Internal Assessment** (10 marks from theory and 25 marks from practical part)

Distribution of Internal Practical Marks	
Internal Practical Assessment (Daily evaluation of practical records/viva-voice/attendance etc.)	Attendance = 05 marks
	Day to day performance = 05 marks
	Practical Test = 10 marks
	Viva-voice = 05 marks
Total	25 Marks

2. **Scheme for award of marks for attendance:**

- a. Attendance of 75-80% = 01 Marks
- b. Attendance of 81-85% = 02 Marks
- c. Attendance of 86-90% = 03 Marks
- d. Attendance of 91-95% = 04 Marks
- e. Attendance of 96-100% = 05 Marks

3. **Pattern of Internal Assessment Test of 20 Marks:**

- a. The test shall comprise of two sections:
 - i. **Section-A (Short Answer Type Questions)**
 1. Attempt any two questions of 5 marks each out of three questions from Unit-1. **(2×5=10 Marks).**
 - ii. **Section – B (Long Answer Type Questions)**
 2. Attempt any one question of 10 marks out of two questions from Unit-2. **(1×10=10 Marks).**

4. **Pattern of External End-Semester Examination of 40 marks:** (15 marks from theory and 25 marks from practical part)

Distribution of External Practical Marks	
External Practical Examination (100% syllabus)	Examination: 20 marks (Two practicals of 10 marks each)
	Viva-voice = 05 marks
Total	25 Marks

b. The paper shall comprise of two sections (35 marks):

i. **Section-A (Short answer types questions)**

1. Attempt any 3 questions of 05 marks out of 05 questions. **(3×5=15 Marks).**

ii. **Section-B (Long answer type questions)**

1. Two practicals of 10 mark each. **(2×10=20 Marks).**

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