



PERIYAR UNIVERSITY

PERIYAR PALKALAI NAGAR

SALEM – 636011

**DEGREE OF MASTER OF PHILOSOPHY
CHOICE BASED CREDIT SYSTEM**

SYLLABUS FOR M.PHIL. SERICULTURE

(SEMESTER PATTERN)

**(For Candidates admitted in the Colleges affiliated to
Periyar University from 2017-2018 onwards)**

REGULATIONS

OBJECTIVES

To provide course of study to postgraduates in Sericulture with a view to strengthen their foundations for undertaking M.Phil work in theoretical and Applied Sericulture.

ELIGIBILITY FOR ADMISSIONS

Good academic record with first or second class Masters Degree in Sericulture of Periyar University or in examination recognized there equivalent to.

DURATION

The duration of the M.Phil course will be one year.

COURSE STRUCTURE

Course Structure for M.Phil., (Sericulture) Under CBCS

(For the candidates admitted from the year 2017-2018 onwards)

COURSE OF STUDY AND SCHEME OF EXAMINATION

S.No.	Course	Subject Title	Exam Hrs	Credits	University Examination		
					Internal (25%)	External (75%)	Total
I SEMESTER							
1.	Paper I	Research Methodology	3	4	25	75	100
2.	Paper II	Recent Advances in Sericulture	3	4	25	75	100
3.	Paper III	Optional subject (Guide Paper)	3	4	25	75	100
II SEMESTER							
4.	Paper IV	*Dissertation Evaluation		8	50	100	150
		Viva - voce		4			50
		TOTAL		24			500

***For 200 Marks**

EXAMINATIONS:

Question Paper Pattern for M.Phil Sericulture Course.

Time: 3Hrs

Max.75

Part A – (5 x 5 = 25 Marks)

Answer ALL question choosing either 'a' or 'b'

Part B – (5 x 10 = 50 Marks)

Answer ALL questions choosing either 'a' or 'b'

University conducts the examination for Paper – I and Paper – II at the end of First Semester.

- ♦ Supervisor will provide syllabus and two sets of Question Paper for Paper – III to the University. The controller of examinations will conduct the examination for Paper – III at the end of First Semester.
- ♦ Passing minimum in each Paper is 50%

Theory Papers:

Total marks for each Paper is 100. 25 marks for Internal and 75 marks for University Examination. The Internal Assessments may be in the form of Combination of Periodical tests and Assignments for Theory Papers. The Components are:

1.	Attendance	=	05 Marks
2.	Assignment/Seminar	=	10 Marks
3.	Test	=	10 Marks
	Total	=	25 Marks

Dissertation:

The Marks for the Dissertation is 200 and the Components are:

Evaluation:

- | | | | |
|----|---|---|-----------|
| 1. | Evaluation of Project report by External Examiner | : | 100 Marks |
| 2. | Evaluation of Project report by Internal Examiner | : | 50 Marks |
| ❖ | Viva – Voce conducted by Supervisor and External Examiner in the Department | : | 50 Marks |
| | Total | : | 200 Marks |
- ❖ Dissertation should be valued by the Supervisor and the External Examiner.
 - ❖ Viva – voce should be conducted by the Supervisor and the External Examiner

M.PHIL. SERICULTURE
PART – I
PAPER I : RESEARCH METHODOLOGY

UNIT I Instrumentation

Light Microscopy – Phase contrast microscopy – Electron Microscopy (SEM & TEM)
Spectrophotometer – Gas – Liquid Chromatography – High performance Liquid
Chromatography, Clinical and Ultra centrifugation, pH meter.

UNIT II Biochemical aspects

Agarose Gel Electrophoresis – PolyAcilamide Gel electrophoresis (PAGE) – DNA
extraction Methods – Phenol and CTAB methods – protein and amino acid separation
and estimation – estimation of carbohydrate, starch, chlorophyll by
spectrophotometer, determination of soil pH, EC, Sodium absorption ratio.

UNIT III Sericulture

Mulberry plantations – spacing, nursery, Fertilizer requirements – identification of
diseases of mulberry – design of rearing houses for silk worm- Chawki rearing –
brushing – disease free laying – grainage – raw silk% - acid treatment for diapausing
eggs – cocoon assessment and sorting – reeling of cocoon on Charka – dyeing of silk
fiber – silk testing.

UNIT V Statistics and Computer Application

Measures of central tendency – 't' test, F test, Chi square test, ANOVA one way and
two way, correlation coefficient, Regression. Software for computer analysis – Excel
and SPSS.

UNIT V Research Methodology

Identification – selection and scope of research problems –research methodology –
review of literature, planning and execution of research – thesis writing – preparation
and presentation of research for journals and conference

REFERENCE BOOKS:

1. Sreerama Reddy, G. 1998. Silkworm Breeding, Oxford and IBH publishing Co. Pvt. Ltd., New Delhi.
2. Otsuki et.al. 1987. Silkworm Egg Production (Translated from Japanese language), Oxford and IBH publishing Co. Pvt. Ltd., New Delhi.
3. Yasuji Hamamura 2001 Silkworm Rearing on Artificial Diet (Translated from Japanese language), Oxford and IBH publishing Co. Pvt Ltd, New Delhi.
4. Mahadevappa, D. Halliyal, V.G., Sankar, D.G and I Bhandiwad R. 2000. Mulberry Silk Reeling Technology, Oxford and IBH publishing Co. Pvt. Ltd., New Delhi.
5. Tazima 1978. The Silkworm an Important Laboratory Tool, Kodansha publication, Tokyo, Japan.
6. Das, M.N and N.C Giri, 1986. Design and Analysis of Experiments Wiley Eastern Ltd – New Delhi.
7. Michael.J. Young and Michael Halvorson 2002. Discovering Microsoft Office XP Standard and Professional, Version.
8. Comprehensive Statistical Software. SPSS South Asia, No. 20, 11th A Main, Millers Road, Vasanth Nagar, Bangalore – 560 052.

M.PHIL. SERICULTURE
PART – I
PAPER II : RECENT ADVANCES IN SERICULTURE

UNIT I Mulberry Cultivation

Mulberry Varieties – Methods of Irrigation – Application methods and schedule. Nutrient Management and Weed control. Pruning and Harvesting – Crop improvement – Mechanism in Moriculture – Pest and Disease, deficiencies and symptoms in Mulberry. Integrated pest and diseases management in Mulberry.

UNIT II Silk Rearing

Life cycle of Silkworm – Types of Silkworm. Rearing houses – egg handling- nutritional requirement of silkworm – young age rearing artificial diet rearing – moulting care. Methods of mounting/spinning environment – Disinfection and hygiene – synthesis of silk. Preparation of Silkworm eggs – artificial hatching and its significance – preservation of bivoltine eggs – voltinism – hibernation.

UNIT III Pests and Diseases of Silkworm

Integrated method for control of pest and disease in silkworm – Viral, Bacterial, Fungal and microsporidian diseases – Prevention techniques.

UNIT IV Silk Reeling

Silk fiber formation – Properties of cocoon filament – Pre reeling process – Cocoon boiling. Reeling technology – re-reeling technology – raw silk industry – byproducts of Silk industries.

UNIT V Non – Mulberry Sericulture

Scope of Non-mulberry Sericulture - Non-mulberry silk varieties and fauna, tasar, muga, eri – Silk Production and Marketing – Tropical tasar / muga – Morphology, anatomy grainage.

REFERENCE BOOKS:

1. Hrcrama Reddy, G. 1998. Silkworm Breeding, Oxford & IBH Publishing Co. Pvt. Ltd, New Delhi.
2. Otsuki et.al. 1987. Silkworm Egg Production (Translated from Japanese Language), Oxford wild IBH Publishing Co. Pvt. Ltd., New Delhi.
3. Yasuji Hamamura, 2001 Silkworm Rearing on Artificial Diet (Translated from Japanese Language), Oxford wild IBH Publishing Co. Pvt. Ltd., New Delhi.
4. Mahadevappa, D. Halliyal, V.G., Sankar, D.G and Bhandiwad, R. 2000. Mulberry Silk Reeling Technology, Oxford wild IBH Publishing Co. Pvt. Ltd., New Delhi.
5. Dandin, S.B et.al. 2003. Advances in Tropical Sericulture, National Academy of Sericulture Sciences India, Central Silk Board, Bangalore, India.