Dinabandhu Andrews College
P.O. Garia, Kolkata 700 084

Certificate Course No.		
Title of the Certificate Course	:	**FUNDAMENTALS OF MULBERRY AND NON-MULBERRY SERICULTURE**
Name of the Academic Department offering the Course	:	**DEPARTMENT OF SERICULTURE**
Duration of the Course	:	**1 MONTH (30 CLASSES)**
Theme of the Course	:	**The main objective of framing this new syllabus is to give the students a thorough understanding of the subject giving adequate weightages to both the core content and techniques used in Sericulture.**
Course Outcome	:	**Train the students in identifying the diseases and pests of the mulberry plant. - It also involves giving students a thorough knowledge about the cultivation of mulberry, maintenance of the farm, seed technology, silkworm rearing and silk reeling.**
Whether the course is comparable with any part of the CU Curricula	:	**No**
Course Co-Ordinator	:	**DR. SWAPNA BANERJEE (ASSOCIATE PROFESSOR)**
Name of the faculty members	:	**1.KRISHNENDU DAS (SACT II)** **2. MADHUJOYA DASGUPTA (SACT II)** **3. MRITTIKA SENGUPTA (SACT II)**

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COURSE TITLE: FUNDAMENTALS OF MULBERRY AND NON-MULBERRY SERICULTURE

COURSE DURATION: 1 month **(30 CLASSES)**

TARGET GROUP: College Students

This course is designed for individuals with little to no prior experience with sericigenous insects, aiming to equip them with fundamental sericultural skills for personal and professional use.

COURSE: Basic Training on Sericulture Fundamentals

CANDIDATE COURSE FEES: Free

TEACHING METHOD: Offline and online (blended mode)

LEVEL OF KNOWLEDGE: Beginner

ABOUT THE COURSE :

Description:

The syllabus for Sericulture at undergraduate Major (1 month course - 30 classes) has been framed in accordance with the model syllabus given by the Department of Sericulture. The main objective of framing this new syllabus is to give the students a thorough understanding of the subject giving adequate weightages to both the core content and techniques used in Sericulture. Keeping in mind and in tune with the changing nature of the subject, adequate emphasis has been given on new techniques and understanding of the subject. The syllabus has also been framed in such a way that the basic skills of subject are taught to the students, and everyone might not need to go for higher studies and the scope of securing a job after graduation will increase. There is wide deviation in the infrastructure, be it physical or in human resource, in the form of teachers' expertise and ability and aspiration of the students. Hence, Project Work has also been introduced as one of the alternatives for continuous evaluation and for the merit of the dissertation.

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Objective:

To empower participants with foundational sericulture skills, enabling them to navigate modern sericultural skills.

Learning Outcome:

By the end of the course, participants should be able to:

1. Gather knowledge about silkworm rearing, mulberry cultivation, reeling process etc.

2. Use common sericultural practical applications for basic tasks.

3. Understand and apply fundamental concepts of non – mulberry sericulture and non-mulberry sericulture.

Medium of Interaction: English

Eligibility: No specific educational background is required. This course is open to any student with a desire to learn basic biological skills.

Technical Requirements:

Participants must carry pen / copies / sheets of papers during course hours.

NAME OF THE TEACHERS FOR THIS COURSE : (30 classes)

- KRISHNENDU DAS (10 classes)
- MADHUJOYA DASGUPTA (10 classes)
- MRITTIKA SENGUPTA (10 classes)

COURSE PLANNING:

TOPIC A : MULBERRY SERICULTURE **(10 classes)**

SUB TOPIC 1. Introduction to Sericulture: Origin and history of sericulture. Silk route and map of India and World; Temperate and tropical climate for sericulture practice.

SUB TOPIC 2 Environmental impact of sericulture: Eco-friendly activity of sericulture; Employment generation in sericulture and role of women in sericulture.

SUB TOPIC 3 Silkworm taxonomy & life-cycle.

SUB TOPIC 4 Silkworm morphology: Morphology of the egg, larva, pupa, adult.

SUB TOPIC 5 Silkworm Anatomy: Digestive system: Larva, Circulatory system: Larva, pupa, adult, Nervous system: Larva, adult, Silk gland: Larva, Reproductive system: Adult.

SUB TOPIC 6 Races & classification of silkworm: Classification based on the number of Larval Moult, Moultinism and Voltinism. Indigenous pure race& cross breed of India. Races with sex limited Characters

SUB TOPIC 7 Biology of Mulberry: Botanical description of mulberry. Economic importance of mulberry Plant; Salient features of family Moraceae.

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SUB TOPIC 8; Phyto-geography and systematic of the genus Morus L. and its species; Morphology of mulberry plant; Different cultivars of mulberry; Floral biology of mulberry: Structure of male and female flowers, catkins

SUB TOPIC 9 Anatomy of mulberry: Stem, root, leaf lamina

SUB TOPIC 10 Mulberry crop protection: Planting system, pruning and training, propagation, irrigation, fertilizer application, manuring, composting, vermicomposting weeding method.

TOPIC B : MULBURRY AND SILKWORM DISEASE / PEST (10 classes)

SUB TOPIC 1 Diseases of mulberry Leaf: Leaf spot, Powdery mildew, Leaf Rust, Leaf blight .

SUB TOPIC 2 Diseases of mulberry root: Root rot disease, Root knot disease

SUB TOPIC 3 Concept of IPM and types.

SUB TOPIC 4 Mulberry pest management (Major Pest) (Pest Definition, Pest Outbreak, Pest Forecasting)

SUB TOPIC 5 Major pest : Mealy bug, Bihar hairy caterpillar, Jassid, Leaf roller, Scale insect and Thrips: their preventive and control measures.

SUB TOPIC 6 Minor Pest: Termites and mites their preventive and control measures.

SUB TOPIC 7 Silkworm Diseases: Protozoan disease, causal agent, structure of pebrine spore, symptom and control measures.

SUB TOPIC 8 Silkworm Diseases: Fungal disease, types, symptoms and control measures.

SUB TOPIC 9 Silkworm Diseases: Bacterial disease and Viral disease, Sotto disease, septicemia, gattine.

SUB TOPIC 10 Silkworm Pests: Uzi fly, Ants, Dermestid Beetles.

TOPIC : NON - MULBERRY SERICULTURE (10 classes)

SUB TOPIC 1 Scope of Non-mulberry sericulture and mulberry vs. non-mulberry sericulture.

SUB TOPIC 2 Non-mulberry silkworms (Tasar, Muga, Eri silk) and their distribution in India and other countries.

SUB TOPIC 3 Taxonomy of food plants of non-mulberry silkworms: Salient feature of the families of non- mulberry silkworm .

SUB TOPIC 4 Cultivation of primary food plants of Tasar, Muga and Eri silkworms: *Terminalia arjuna, Machilus bombycina, Ricinus communis*

SUB TOPIC 5 Life cycle of Tasar, Eri and Muga silkworm.

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SUB TOPIC 6 Rearing of non-mulberry silkworms : Tasar , Muga, Eri.

SUB TOPIC 7 Reeling process of non-mulberry silk : Tasar , Muga, Eri.

SUB TOPIC 8 Brief account of implant disease and pest of primary non-mulberry food plants and their management.

SUB TOPIC 9 Concept of IPM.

SUB TOPIC 10 Disease of non-mulberry silkworms. Protozoan, bacterial viral and fungal diseases, symptoms, causative agent preventive and control measures.

Certification:

Certificate awarded based on over all performance through departmental class test for every TOPIC of course by the college.

Class number and hours distribution :

NAME OF TEACHERS	NO.OF CLASSES	HOURS DISTRIBUTION
KRISHNENDU DAS	10 CLASSES	1HOUR/CLASS
MADHUJOYA DASGUPTA	10 CLASSES	1HOUR/CLASS
MRITTIKA SENGUPTA	10 CLASSES	1HOUR/CLASS

LEARNING RESOURCES

SL. NO.	TITLE OF THE BOOK	AUTHOR(S)	PUBLISHER
1.	An introduction to sericulture	G. Ganga and J. Sulochana Chetty	Oxford and IBH Publishing CO. Pvt. Ltd.
2.	A comprehensive guide to sericulture	Frank Jackson	Oxford and IBH Publishing CO. Pvt. Ltd.
3.	Handbook of Entomology	T.V. Prasad	New Vishal Publications, 3rd edition
4.	Silkworm Breeding Made Easy	Sham S. Misri and A. K. Misri	IBH Publishing CO. Pvt. Ltd.

EVALUATION POLICY FOR THE ADD-ON COURSE

The basic philosophy behind the Evaluation policy for this 30 Hours Add-on course is to objectively judge the participants (students) whether the concepts were understandable to them or not and whether they could apply these concepts to solve numerical and conceptual problems.

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The Evaluation would be done through 2 components –

- C1 Course-end Assessments (Written Test) [Total Marks: 40]
- C2 Practical /LAB [Total Marks: 10]

Total Marks of the Evaluation process would be – 50 Marks

TABLE F OR QUALIFICATION

TOTAL SCORE (OUT OF 50)	GRADE
45 – 50	O – OUTSTANDING
40 – 44	E – EXCELLENT
35 – 39	A – VERY GOOD
30 – 34	B – GOOD
25 - 29	C - FAIR
BELOW 25	F - FAILED

GENERAL RULES AND REGULATIONS

1. Students must attend and appear for all the Module-End Assessments. If any student fails to submit any of the Module-End Assignments or fails to attend any of the Module End Assessment examinations , the particular Student would NOT BE ELIGIBLE FOR CERTIFICATE.

2. Students must attend and appear for the Course-End Assessment Examination. If any student fails to submit the Course-End Assessment or fails to attend the Course-End Assessment Examination , the particular Student would NOT BE ELIGIBLE FOR CERTIFICATE.

3. Students must attend and appear for the Course-End Viva. If any student fails to fails to attend the Course-End Viva, the particular Student would NOT BE ELIGIBLE FOR CERTIFICATE.

4. Total Marks of Course Evaluation will be 50 Marks.

5. Minimum 50% Marks has to be scored to receive any Certificate. There will be only ONE Attempt allowed for each of the Module-End Assessments and the Course-End Assessment.

6. There will be NO PROVISION for Backlog Clearance.

7. General Rules and Regulations of the College must be followed without any exception.

8. Minimum 75% attendance is required to receive the certificate of the course.

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