KAKATIYA UNIVERSITY
Faculty of Science
B. Sc (Sericulture)
Semester – IV
D SC – Seri - IV
Post cocoon Technology

Theory	4 hours/week	4 credits	Theory {Internal Marks-20}
			Theory {external marks-80}
	3 hours/week	1 credit	Practical - External marks-25

Objectives

1. To introduce the cocoon and its significance in reeling.
2. To acquaint with silk reeling technologies and its importance.
3. To understand the process from cocoon to yarn.

UNIT – I

Textile fibers – Brief introduction to natural & synthetic fibers and their uses: cocoon characteristic, structure of fiber; physical and commercial characteristic of cocoons, importance and problems of reeling in industry.

Cocoon sorting – objectives & procedure: defective cocoons, marketing of cocoons – functions & procedure.

UNIT – II

Cocoon handling, Selection, preservation of cocoons,

Cocoon stifling:- objectives, factors and methods – sun drying, steam stifling, hot air drying, Yamato hot air driers – advantages and disadvantages, cocoon sorting, preservation of cocoons.

Cocoon cooking:- objectives, factors and methods – open pan, three pan, pressurized, floating and sunken system- merits and demerits.

Brushing:- objectives – method – advantage and limitations.

UNIT – III

Silk Reeling:- Evolution of silk reeling, reeling units – charaka, cottage basin, multiend, semi automatic and automatic reeling devices – components and their functions.

Re reeling and packing: objectives, grant reeling, hank preparation, lacing, skeinning, booking, baling and bundling.

Raw silk properties – physical, chemical and microscopic - factors influencing the properties/ silk quality of raw silk, silk exchange – structure and functions.

UNIT –IV

Raw silk testing and grading:- objectives of testing/grading,
Raw silk testing: Visual, winding, evenness, cleanness, neatness, tenacity and elongation, cohesion and condition weight:- raw silk grading – international standards and bureau of International standards (BIS).
Doubling, twisting, weaving, degumming, bleaching and silk dyeing – objectives and methods.

REFERENCE BOOKS:-

1. Bibhuti Nath Jha (2012) Silk industry in India, Satyam Publishing house, New Delhi.
2. Dhote, A.K (1989): Sericulture instructional cum practical manual, Volume V, Silk reeling, testing and spinning, NCERT, New Delhi.
3. Huang guo Rui (1998) Silk Reeling, - Oxford & IBM Publishing Co. Pvt Ltd, New Delhi.
4. Krishnaswami, S. Madhava Rao, N.R, Suryanarayana, S.K and Sundaramurthy, TS (1972) Manual – 3 Silk reeling. FAO Agricultural Service Bulletin 15/3 Food & Agriculture Organization of the United Nations, Rome
5. Mahadevappa, D., Halliyal, U.G., Shankar., A.G and Ravindra Bhandiwad 2000. Mulberry silk reeling technology, Oxford & IBM publishing Co. Pvt Ltd, New Delhi.
6. Somasekhar, T.H and Kawakami, K Eds (2002) manual on Bivoltine silk reeling technology, 2002, JICN PP BST Project CSRTI Mysore.

Post cocoon Technology

Practicals D SC - Seri – IV 3 hours/week 1 credit 25 marks

(Core paper)

1. Identification of textile fibers by microscopic, physical, chemical and confirmatory tests.
2. Physical and commercial characters of cocoons in MV and BV races / Breeds.
3. Properties like tenacity, elongation, toughness, elastic recovery and moisture absorption.
4. Sorting of cocoons:- Identification and calculation of good and defective cocoons by number and percentage.
5. Cocoon stifling and cooking
6. Determination of filament length / reel ability/raw % recovery / renditta and denier.
7. Determination of alkalinity and hardness of reeling water by titration method.
8. Identification of reeling machines and their components.
9. Estimation of degumming loss in multivoltine and bivoltine cocoons and raw silk.
10. Estimation of bleaching loss in multivoltine silk.
11. Dyeing of multivoltine and bivoltine silk using acid, basic and compound dyes.

12. Printing of silk fabrics: objective and methods – hand and screen printing.
13. Study of different types of silk waste
14. Visit to nearest silk reeling centers.
15. Longitudinal & cross section view of silk textile fibers & its impact on physio-mechanical characters.

KAKATIYA UNIVERSITY
Faculty of Science
B. Sc (Sericulture)
Semester – IV
Chawki Rearing Technology
(SEC – III)

Theory	2hours/week	2credits	50marks

Objectives

1. To introduce the concept of mulberry garden for maintenance of chawki worms.
2. To understand about general aspects of chawki rearing techniques and economics.

UNIT – I

Chawki Rearing Technology:- Chawki rearing – Introduction, role and its importance, chawki mulberry garden establishment, maintenance and management, disinfection and hygienic conditions – objectives and methods, eggs suitable for chawki rearing; Handling - precautions during transportation, incubation and black boxing of eggs, brushing of chawki worms, characteristics of chawki worms,
chawki rearing house – environment for chawki worms.

UNIT – II

Chawki rearing method:- feeding and spacing for chawki worms, bed cleaning – methods & frequency, care during moulting, chawki certification transportation of chawki worms, artificial diet for chawki worms, economics of chawki rearing, chawki rearing centers in Telangana – the methodologies followed, cost: profit ratio,
Visit to CRC's and their success stories of chawki rearers.

REFERENCE BOOKS:-

1. Ganga G (2003) comprehensive sericulture, Volume – 2 Silkworm rearing Oxford & IBM publishing Co. Pvt Ltd.
2. Wang San – Ming (1989) silkworm egg production Vol – III FAO agricultural services bulletin translated by Li Ping. Y, Pan Runshi and Ou-bin-sen.
3. Internet.

KAKATIYA UNIVERSITY
Faculty of Science
B. Sc (Sericulture)
Semester – IV
Bio craft Technology
(SEC – IV)

Theory	2 hours/week	2 credits	50marks

Objectives

1. To introduce to by products, its importance of its value addition in sericulture.
2. Utility of silk wastes for preparation of bio crafts.
3. To gain knowledge about skills and art of making bio crafts.

UNIT – I

Introduction to byproducts and its importance, sources of bye products from different activities; process of making bio crafts; selection of cocoons, sorting, cleaning, dyeing with natural and synthetic dyes, different tools required for cocoon crafts making, designing, developing of cocoon crafts.

UNIT – II

Hands on learning:- the skill and art of making single flowers, different forms of bouquets, garlands, placards, silk balls and cocoon caps, Ikebans of cocoon craft flowers, flower arrangements in different materials (enamel, wood, plastic, glass, bamboo, porcelain and mud pots), photo frames, wall hangings and plates, making of key chains in form of doll, car hangings and greeting cards.

Interior decoration using cocoon crafts for different occasions, stage decoration of marriages and functions.

Integration of agricultural / horticultural material in cocoon craft as entrepreneurial skills of cocoon craft

Utility of silk waste for preparation of silk bangles, necklaces, anklets, rachis, earrings, finger rings etc.,

Utility of silk borders / cloth / waste silk in making of purses, handbags, vanity bags, files, table clothes and curtains etc.

REFERENCES:-

1. Internet & using creative mind