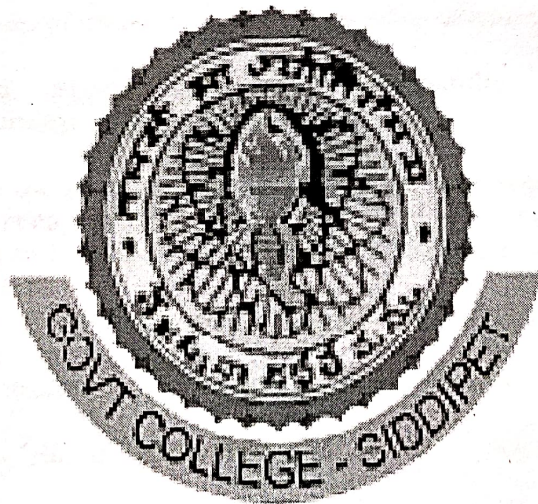


A Certificate Course in 'SERICULTURE'

BY

**DEPARTMENT OF ZOOLOGY
GOVT. DEGREE COLLEGE, SIDDIPET (AUTONOMOUS)
TELANGANA - 502103**



Govt. Degree College, Siddipet (Autonomous)
Department of Zoology

CERTIFICATE COURSE:

Title of the Certificate Course	: A certificate course in <u>Sericulture</u>
No. of Credits	: 02
Duration	: 8 weeks
Offered by	: Department of Zoology
Course Fees	: 1000/-
No. of Hours/Week	: Four theory (1 hour) and one practical (3 hours) / week
Year of implementation	: 2020-21
Students' intake	: 40
Exam pattern	: Max. Marks = 50 for Theory exam and = 25 for Practical exam
Total Marks: 75	

Sericulture plays a major role in rural employment, poverty alleviation and earning foreign exchange. A lot of entrepreneurial opportunities are available in various fields of sericulture. It is practiced in various states viz., Karnataka, Andhra Pradesh, Jammu & Kashmir, West Bengal and states like Madhya Pradesh and Maharashtra have also started practicing Sericulture. The non-mulberry (also called Vanya silk) sericulture is practiced in Assam, Jharkhand, Orissa and Madhya Pradesh. More than 6 million people are involved in sericulture activities. It is necessary to upgrade the skills of the sericulturists to use the full potentialities of sericulture to produce qualitatively superior cocoons and to earn profitable income.

Objectives of the Course: The course aims at the following objectives -

1. To study the biology and varieties of mulberry silkworms and the basic techniques of silk production and formation of cocoons
2. To know the Mulberry cultivation technology and basic inputs of water, irrigation, fertilizers and pest management
3. To know the rearing of silkworm larvae and using disinfection methods for getting healthy cocoons
4. To develop an expert manpower to handle the own sericulture units/entrepreneurship

Course outcome:

1. Student learns the potentialities of sericulture as a source of rural employment and as an export earning enterprise.
2. Student learns to identify the organizations involved in sericulture training and skill up-gradation.
3. Student will realize that the sericulture practice can generate huge employment throughout the year.
4. To enable the student to get support for the entrepreneur development activities in sericulture.
5. Student learns the development of mulberry garden and silkworm rearing techniques.
6. Student also learns to identify mulberry diseases and pests, their causes, symptoms and their preventive and control methods.
7. Student learns the management skills of sericulture industry.
8. Student learns the different types of silk and other by-products.
9. Student also learns to identify the job opportunities in sericulture sector.
10. Enable the student to determine the profitability of sericulture sector.

GOVT. DEGREE COLLEGE (A), SIDDIPET
DEPARTMENT OF ZOOLOGY
CERTIFICATE COURSE IN ZOOLOGY
TITLE: SERICULTURE

Max. Marks: Theory – 25, Practical – 25

No. of Credits: 2

Unit I:

- 1.1 Introduction, Definition, scope, types of silks, importance of silk industry.
- 1.2 Life cycle of silk worm, distribution, silk and its trade, constraints of sericulture industry in India. Economics of sericulture.
- 1.3 Potential of sericulture in employment generation, schemes to promote sericulture, integration among various organizations for sericulture development.
- 1.4 Quality in cocoon production, marketing.
- 1.5 Women in sericulture, other stake holders

Unit II:

- 2.1 Human resource development in sericulture, Role of central silk board and state sericulture departments, Universities, NGOs.
- 2.2 Training in sericulture, areas of training, skill development activities.
- 2.3 Entrepreneurship Development Program (EDP) in sericulture, business opportunities
- 2.4 Varieties of Mulberry, Mulberry Plantation Techniques, seed cuttings, plantation, maintenance of nursery, weeding, sprouting, fertilization, disease control, uprooting and transplantation.
- 2.5 Commercial Chawki rearing, characters of chawki silkworms, requirements of chawki rearing centre (CRC)

Unit III:

- 3.1 Silkworm rearing, Rearing plan, Rearing methods, rearing operations, mounting, harvesting and transportation.
- 3.2 Waste recycling: Composting, Preparation of vermicompost, disinfection.
- 3.3 Silk worm seed production, technicalities-disinfection of grainage and implements, optimum condition maintenance, deflossing of cocoons, preservation and protection of seed cocoons.
- 3.4 Sex separation, synchronization of moths, emergence of moths; pairing, de-pairing and oviposition, surface sterilization.
- 3.5 Moth examination, Acid treatment of bivoltine eggs, loose eggs preparation, storage of eggs.

Unit IV:

- 4.1 By-products of Mulberry cultivation: usefulness of mulberry leaves, shoots and roots.
By-products of silkworm rearing: litter as compost, litter as animal feed, litter for biogas plant, litter usage in pharmaceutical industry, dead larvae as suturing material.
- 4.2 By-products of grainage operation: Use of pupae, cut-open cocoons, pierced cocoons, discarded or defective cocoons; waste moths.
By-products of reeling: Reeling waste, thread waste.
- 4.3 Special use of Silk, spun silk, silk worm as medicine- larvae, Silkworm feces, pupae, male moths, reeled cocoons.
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- 4.5 Weaving process, wet processing: Degumming, bleaching, dyeing and printing.

Govt. Degree College, Siddipet (Autonomous)
Telangana state
Department of Zoology

Importance of the course:

The sericulture industry provides livelihood opportunity for millions owing to 'high employment oriented, low capital intensive and remunerative nature' of its production. The very nature of this industry with its rural based activities and enormous employment generation potential has attracted the attention of the planners and policy makers to recognize the industry among one of the most appropriate avenues for socio-economic development of a largely agrarian economy like India. India has the unique distinction of being the only country producing all the four known commercial silks, namely, Mulberry, Tassar, Eri and Muga.

Every year around 500 students of Department of Zoology, Fisheries, Botany, Microbiology and Biotechnology complete graduation and post-graduation and leave the college for their future career. With their traditional degree, if they get add-on course as Certificate course in Sericulture, the students will improve their job and entrepreneur prospects.

Considering the present scenario, Department of Zoology proposed to start a certificate course in Sericulture and obtained BOS approval also. This course is being introduced as a certificate course for B.Sc., students. As this course covers all aspects of Sericulture, after successful completion of this course, a student can start his own sericulture unit, growing mulberry plantation, rearing of silkworms, preparation of silkworm seed, reeling of cocoons etc. Presently, a farmer who practices sericulture with one acre mulberry plantation and by rising silk cocoons is getting an income of Rs. 3,00,000/- per year with a net profit of Rs. 1,80,000/-. With this good potential, this course would be able to deliver trained workforce. With the changing climatic conditions, if in the event of onset of draught conditions, mulberry plantation can tolerate and able to yield the leaves required for silkworm rearing. Moreover, the climate of most of the areas of Telangana is congenial for silkworm rearing. Besides medicinal values, mulberry plantation and cocoons yield many by-products. The course is designed for the students who will be exposed to comprehensive training both in theory and practice, covering all aspects of sericulture.

Eligibility for admission into the certificate course in Sericulture:

All the students who are pursuing their B.Sc., with Life sciences optional will be eligible for this course. In case applicants' number is more, a suitable method will be followed for selection of students

Commencement of the course: From academic year 2020-21 onwards.

Medium of instruction: English

Support of the Govt. of Telangana:

Govt. of Telangana is also motivating farmers to take up the mulberry cultivation for silkworm rearing and cocoon production for their benefit. This can be revealed by observing the data given in the table as under:

Status of Sericulture Before and after formation of Telangana State:

ACHIEVEMENTS BEFORE AND AFTER TELANGANA STATE			
Sl. No.	Particulars	Before formation of Telangana State 2014	After formation of Telangana State (Upto 2020-21)
1	Area under Mulberry (in Ac)	3,176	12,654
2	Cocoon Production (in MTs)	699.58	1992.90
3	Avg. yield per 100 DFLs (in Kgs)	60	73
4	No.of Kissan Nurseries (in Nos)	0	10
5	Raw Silk Production against cocoons consumed within the state (in MTs)	105	306.6
6	No.of Chawkie Rearing Centres	5	10
7	No.of Multi-end Reeling Units	2	10
8	No.of Automatic Reeling Machine	1	3 (proposed to establish (3) more)
9	Employment Generation (no.of persons)	15,880	59,625
10	Tassar Cocoon Production (In lakh No.s)	44.484 (during 2017-18)	78.665

Certificate course in Sericulture:

Department of Zoology has proposed a certificate course in Sericulture and obtained approval in BOS meeting held for the academic year 2019-20. The department has intended to start the course in the same year. Though mulberry plantation was taken up, the course couldn't be started due to Covid-19 pandemic lockdown. Saplings for mulberry plantation were sponsored by Sri Madhusudhan Reddy, a renowned sericulture farmer of Maddur village of Cheryal mandal. We were able to commence the course only when the lockdown was repealed in August 2020.

With the short notice, the department has commenced the certificate course in Sericulture with about 20 students, and the course was held from 25-09-2020 to 24-11-2020 (about 8 weeks). Initially silkworm seed was sponsored by Sericulture department, Siddipet District, Govt. of Telangana. With the advice of Sri Indrasena Reddy garu, Assistant Director of Sericulture Department, and his assistants, we have started rearing of silkworms. The sericulture farmers in surrounding villages have helped us by supplying trays and other material besides mulberry leaves. We, the faculty of department of Zoology, along with students have started silkworm rearing with barely one tray and as silkworms have grown in size, we had to increase the number of trays to 16.

Schedule of silkworm rearing is as under:

1. 19-11-2020 ---Received silkworm seed (eggs) from Sericulture department
2. 21-11-2020 ---- Hatching of silkworm eggs and commencement of feeding the silkworm larvae with mulberry leaves
3. 06-12-2020 ---- No. of silkworm trays increased to 3
4. 13-12-2020---- No. of silkworm trays increased to 6
5. 17-12-2020---- No. of silkworm trays increased to 12
6. 22-12-2020---- No. of silkworm trays increased to 16
7. 23-12-2020---- Cocoon formation (Development from larva stage to Pupa stage) started
8. 31-12-2020----Harvest of cocoons

After completion of the course, all the students who had joined the course were presented with certificates.

Head,
Dept. of Zoology,
Govt. Degree College, Siddipet (A)

~~Certificate course~~

CBCS undergraduate program in Zoology

~~Skill orientation~~

~~Sericulture~~

CERTIFICATE COURSES:

Title of the Certificate Course	: Sericulture
No. of Credits	: 02
Duration	: Two months
Department offering the course	: Zoology
Course Fees	: 1000/-
No. of Hours/Week	: One theory and one practical / week
Year of implementation	: 2020-21
Students intake (15 min)	: 40(Initially)
Exam pattern	: Max. Marks = 25 for Theory and 25 for Practicals


Total Marks: 50

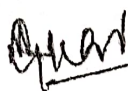
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Objectives of the Course:

Course outcome:

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2. Student learns to identify the organizations involved in sericulture training and skill upgradation.
3. Student will learn sericulture practice can generate huge employment throughout the year.
4. To enable the student to get support for the entrepreneur development activities in sericulture.
5. Student learns the development of mulberry garden and silkworm rearing techniques.
6. Student also learns to identify mulberry diseases and pests, their causes, symptoms and their preventive and control methods.
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CHAIR MEN
Board of Studies in Zoology,
Osmania University, Hyd-07.


Chairman Board of Studies
Department of Zoology
Government Degree College (Autonomous)
Siddipet, Noidak (Dist)
Tel: 502103

GOVT. DEGREE COLLEGE (A), SIDDIPET
DEPARTMENT OF ZOOLOGY
CERTIFICATE COURSE IN ZOOLOGY - 2
TITLE: SERICULTURE

Instructions: 1 Hr. Theory & 1 Hr. Practical

Max. Marks: Theory - 25 Practical - 25

No. of Credits: 2

50

Unit I:

- 1.1 Introduction, Definition, scope, types of silks, importance of silk industry.
- 1.2 Life cycle of silk worm, distribution, silk and its trade, constraints of sericulture industry in India. Economics of sericulture.
- 1.3 Potential of sericulture in employment generation, schemes to promote sericulture, integration among various organizations for sericulture development.
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- 2.1 Human resource development in sericulture, Role of central silk board and state sericulture departments, Universities, NGOs.
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- 2.4 Varieties of Mulberry, Mulberry Plantation Techniques, seed cuttings, plantation, maintenance of nursery, weeding, sprouting, fertilization, disease control, uprooting and transplantation.
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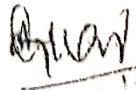
Unit III:

- 3.1 Silkworm rearing, Rearing plan, Rearing methods, rearing operations, mounting, harvesting and transportation.
- 3.2 Waste recycling: Composting, Preparation of vermicompost, disinfection.
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- 3.5 By-products of Mulberry cultivation: usefulness of mulberry leaves, shoots and roots.
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- 3.7 By-products of grainage operation: Use of pupae, cut-open cocoons, pierced cocoons, discarded or defective cocoons; waste moths.
- 3.8 By-products of reeling: Reeling waste, thread waste.

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- 4.1 Special use of Silk, spun silk, silk worm as a medicine- larvae. Silkworm feces, pupae, male moths, reeled cocoons.
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CHAIR MEN
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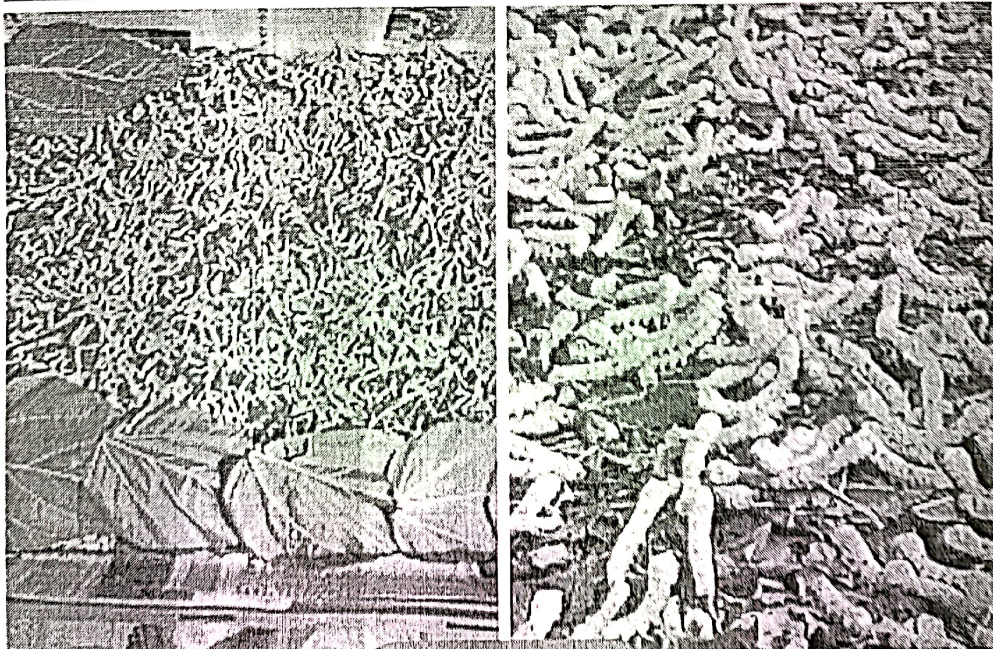
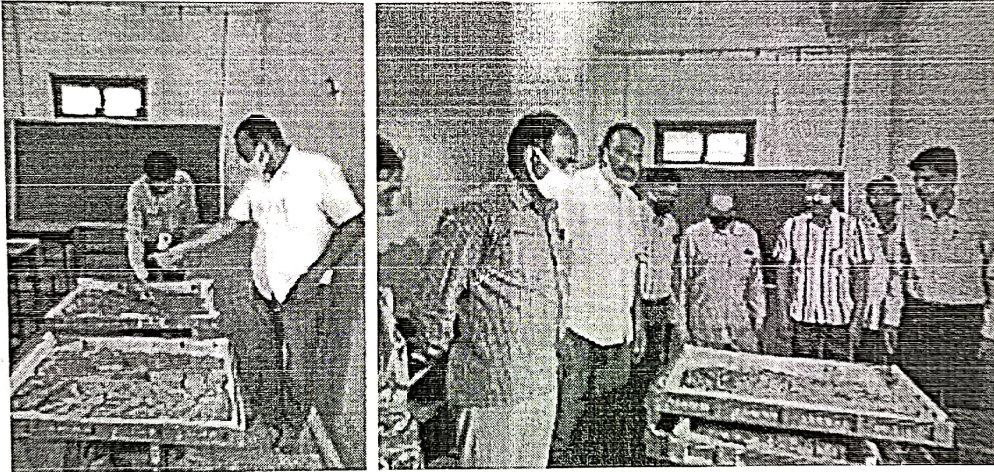

Chairmen Board of Studies
Department of Zoology
Osmania University, Hyderabad
07/10/13

Students Enrollement in Certificate Course " SERI CULTURE"

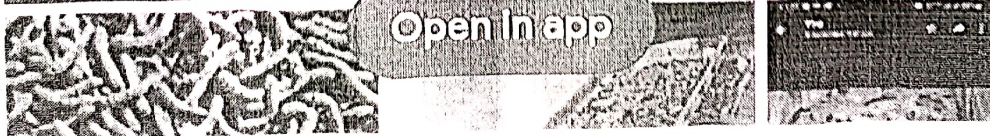
2020-21

S.No.	Name of the Student	Group / Class
1	R SUDHAM	B.SC(FZC)-3 Yr
2	L HARI KRISHNA	B.SC(FZC)-3 Yr
3	MOHAN NAYAK	B.SC(FZC)-3 Yr
4	ARAVIND NAYAK	B.Sc(BZC)-3 Yr
5	SRI LEKHA	B.Sc(BZC)-3 Yr
6	SAMREEN SULTHANA	B.SC(FZC)-2 Yr
7	NEHA	B.SC(FZC)-2 Yr
8	MD SAIFUDDIN	B.SC(FZC)-2 Yr
9	SARA TASKEEN	B.SC(FZC)-2 Yr
10	J SAI PRIYA	B.SC(FZC)-2 Yr
11	B SAI TARUN	B.SC(FZC)-2 Yr
12	G CHANDU	B.SC(FZC)-2 Yr
13	S POOJITHA	B.SC(FZC)-2 Yr
14	M SUCHITHA	B.SC(FZC)-2 Yr
15	G PALLAVI	B.SC(FZC)-2 Yr
16	M SUDHANI	B.SC(FZC)-2 Yr

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Certificate course
on



SERICULTURE

DEPARTMENT OF ZOOLOGY

GOVERNMENT DEGREE COLLEGE (A), SIDDIPET

This is to certify that Mr/Mrs.....

Of.....

has participated in the Certificate Course On **“SERICULTURE”** at Department Of Zoology,

Government Degree College(A), Siddipet From _____ to _____

Sri M. GUNAKAR

Co-Ordinator

Dr. P. AYODHYA REDDY

Convener

Dr. M. MADHUSUDHAN REDDY

Co- Convener

Dr. Ch.Prasad

Principal

A Certificate Course in ‘SERICULTURE’

BY

**DEPARTMENT OF ZOOLOGY
GOVT. DEGREE COLLEGE, SIDDIPET
(AUTONOMOUS)
TELANGANA – 502103**



Govt. Degree College, Siddipet (Autonomous)
Department of Zoology

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Govt. Degree College, Siddipet (Autonomous)
Telangana state
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Certificate course in Sericulture:

Department of Zoology has proposed a certificate course in Sericulture and obtained approval in BOS meeting held for the academic year 2019-20. The department has intended to start the course in the same year. Though mulberry plantation was taken up, the course couldn't be started due to Covid-19 pandemic lockdown. Saplings for mulberry plantation were sponsored by Sri Madhusudhan Reddy, a renowned sericulture farmer of Maddur village of Cheryal mandal. We were able to commence the course only when the lockdown was repealed in August 2020.

With the short notice, the department has commenced the certificate course in Sericulture with about 20 students, and the course was held from 25-09-2020 to 24-11-2020 (about 8 weeks). Initially silkworm seed was sponsored by Sericulture department, Siddipet District, Govt. of Telangana. With the advice of Sri Indrasena Reddy garu, Assistant Director of Sericulture Department, and his assistants, we have started rearing of silkworms. The sericulture farmers in surrounding villages have helped us by supplying trays and other material besides mulberry leaves. We, the faculty of department of Zoology, along with students have started silkworm rearing with barely one tray and as silkworms have grown in size, we had to increase the number of trays to 16.

Schedule of silkworm rearing is as under:

1. 19-11-2020 ---Received silkworm seed (eggs) from Sericulture department
2. 21-11-2020 ---- Hatching of silkworm eggs and commencement of feeding the silkworm larvae with mulberry leaves
3. 06-12-2020 ---- No. of silkworm trays increased to 3
4. 13-12-2020---- No. of silkworm trays increased to 6
5. 17-12-2020---- No. of silkworm trays increased to 12
6. 22-12-2020---- No. of silkworm trays increased to 16
7. 23-12-2020---- Cocoon formation (Development from larva stage to Pupa stage) started
8. 31-12-2020----Harvest of cocoons

After completion of the course, all the students who had joined the course were presented with certificates.

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