



കേരളം KERALA

CM 334475

MEMORANDUM OF UNDERSTANDING

This MoU is an agreement between the following parties

Party No. 1: Sree Sankara College, Kalady, Ernakulam Dist

Party No. 2: Zoological Society of Kerala

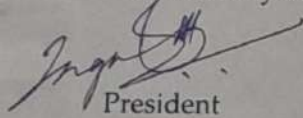
Subject

- This MoU is for Educational purpose
- It is for the Add on Course in Organic Composting offered by Department of Zoology, Sree Sankara College, Kalady

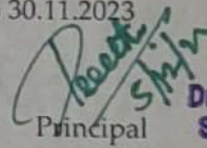
Purpose

The purpose of the MoU is to build cooperation between Sree Sankara College, Kalady and Zoological Society of Kerala to organize academic sessions on topic of interest and to invite ZSK faculty members to render expertise related to the course and providing certificates to the candidates after the completion of the course.

The Validity of this MoU is one year starting from 01.12.2022 to 30.11.2023


President

Zoological Society of Kerala


Principal

Sree Sankara College
Kalady

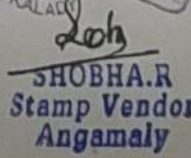
Dr. PREETHI NAIR
Drawing and Disbursing Officer
Sree Sankara College, Kalady

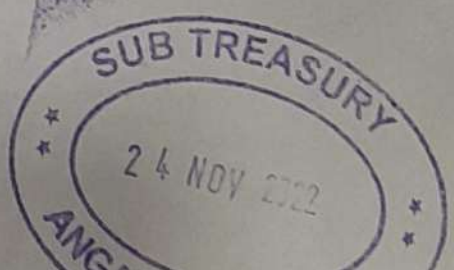


NO 30645 / R100
28.11.2022

Principal

Sree Sankara College, Kalady


SHOBHA.R
Stamp Vendor
Angamaly




ADD – ON COURSE IN ORGANIC COMPOSTING – REPORT


Course Coordinator: Dr. Mini K D

Add on course in organic composting is offered by the Dept. of Zoology in collaboration with Zoological Society of Kerala and Paravoor Municipality. 33 students registered for the course.

Brochure & Syllabus of the Course




SREE SANKARA COLLEGE KALADY
Reaccredited by NAAC with B++ Grade
Affiliated to Mahatma Gandhi University Kottayam



Organic Compost
Paper
Food Waste
Food Waste

ADD ON COURSE IN ORGANIC COMPOSTING
Offered by Dept. of Zoology
& Zoological Society of Kerala
ADD ON CODE- SSCADP18



The course provides general awareness in

- Vermicomposting
- Biogas generation
- Waste Management

Course Fee – 700/-
Duration – 30 Hrs.

For more details, please contact:
Dr. Mini K D
Course Coordinator
Contact No. 9605055445
E mail ID: minianup1994@gmail.com

ADD ON COURSE IN ORGANIC COMPOSTING

ADD ON CODE- SSCADP18
Dept. of Zoology & Zoological Society of Kerala
(Syllabus)

UNIT 1	4 HRS.
<ul style="list-style-type: none">• Introduction, Ecological classification of earth worms. Species of earth worms used for vermiculture, Reproduction & life cycle, Role of earth worm in solid waste management, in agriculture, in medicine etc.	

UNIT 2	4 HRS.
<ul style="list-style-type: none">• Key to identify the species of earthworms.• Biology of <i>Eisenia fetida</i>.• Taxonomy Anatomy, physiology and reproduction of Lumbricidae.• Biology of <i>Eudrilus eugeniae</i>.• Taxonomy Anatomy, physiology and reproduction of Eudrilidae.	

UNIT 3	4 HRS.
<ul style="list-style-type: none">• Vermicomposting• Preparation of vermicompost, Maintenance & monitoring, Preparation of vermicompost• Nutritional Composition of Vermicompost for plants, comparison with other fertilizers• Vermicompost collection, composition & use• Enemies of Earthworms, Sickness and worm's enemies.• Frequent problems. How to prevent and fix them.• Complementary activities of auto evaluation.	

UNIT 4	8 HRS
<ul style="list-style-type: none">• Biogas• History of Biogas production• Characteristics of Biogas• Biogas production & anaerobic digestion• Potentials of Biogas• Benefits of Biogas• TRAINING SESSIONS	

UNIT 5	5 HRS
<ul style="list-style-type: none">• Setting of Vermicomposting Unit	

UNIT 6	5 HRS
<ul style="list-style-type: none">• Biogas Production Plant• Maintenance of Biogas plant	

ADD ON COURSE LIST OF STUDENTS

I YEAR ZOOLOGY

1. ASNITHA M N
2. RITHA ANWAR
3. JANAKY S KURUP
4. GREESHMA RAVI
5. KAVYA T A
6. SREELAKSHMI JAYAKUMAR
7. DEVIKA B
8. MEENAKSHI M
9. ANANYA U P
10. ANAMIKA T
11. ANEETA P S
12. NIKHILA K
13. NAJMA C
14. ASHISH SREEKUMAR
15. ARUNJITH A
16. HARIDAS P G
17. ADWAIDHU N B
18. BESTTIN BYJU
19. AMAL CHANDRAN
20. VINAYAK REJI
21. PREETH JOHNY
22. ALVIN PAUL
23. GOKUL KRISHNA
24. ANITA THOMAS

I YEAR BOTANY

25. RAJALAKSHMI SHAJI
26. AMALA K G
27. ABHINAND VELAYUDHAN

II YEAR BOTANY


28. SHIVATHEERTHA C P
29. FATHIMA SHAHANAS P S
30. RITHIKA RAJU
31. ANANDHU SAJI
32. RIYA AUGUSTINE
33. NEHALA ANWAR K

List of Teachers involved


1. **Dr. Mini K D Course Coordinator and Resource person**
2. **Dr. Minimol K C Resource Person.**

The course was formally inaugurated by Sri. Sivakumar A K, Senior Education officer WWF India, Kerala state on 3rd November. Principal Dr. Preethi Nair, Programme Coordinator Smt. Gopika G, Faculties of Zoology department, other teachers, students were present. Theory classes, practical sessions, field visits, evaluation tests, projects, report presentations and project presentations were completed in the stipulated period.

Inauguration Brochure

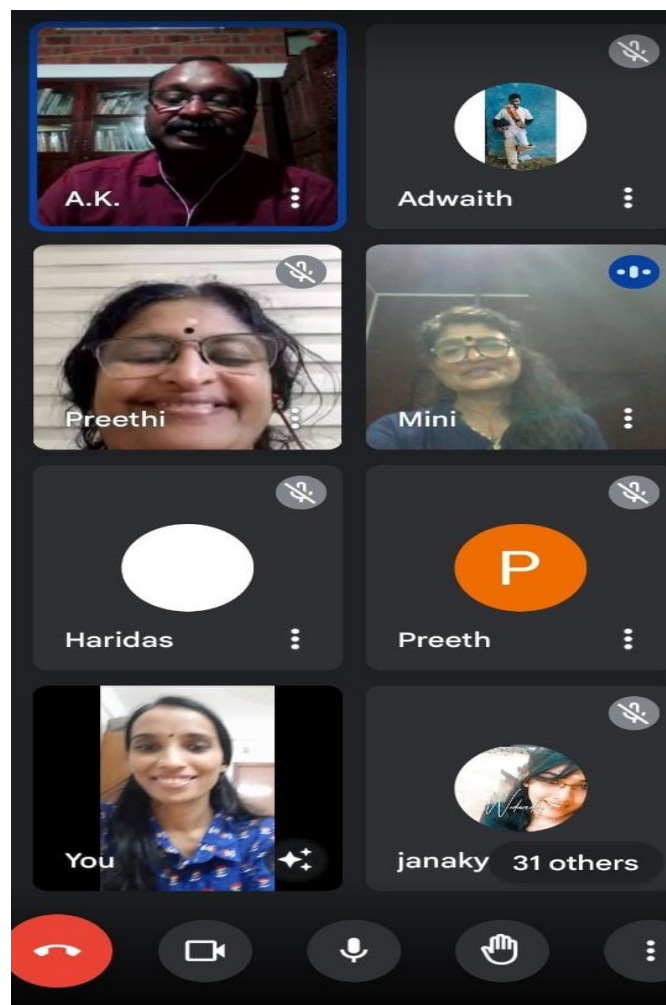


Dept. of Zoology
Sree Sankara College Kalady
Inauguration of
Add-on Course in Organic
Composting
on 8/11/2022 at 7 pm (Online)
Inauguration
By
Sri. A K Sivakumar,
Senior Education Officer,
WWF-India, Kerala State Office.
Dr. Mini K D, Course Coordinator



Online Inauguration Glimpses





Details of classes & other activities carried out during the course

No of classes	Date	Topic	Name of the teacher
	November 8	Add on Course	Sri. A. K Sivakumar Senior Education Officer WWF India, Kerala State
1	Nov 28	Introduction to the add on course	Dr. Mini K D
2	Jan 22	Organic composting-An introduction	Dr. Mini K D
3	Jan 25	Earthworm morphology	Dr. Minimol K.C
4	Jan 26	Earthworm classification	Dr. Minimol K.C
5	Jan 28	Earthworm reproduction	Dr. Minimol K.C
6	March 18	Vermicomposting	Dr. Mini K.D
7	March 21	Introduction to earthworm	Dr. S Prasanth Narayan
8	March 24	Communication skills	Kairali K.K
9	March 25	Communication skills (part 2)	Kairali K.K
10	March 30	Soil story- An Earthworms eye view	Prof. Sultan Ahmed Ismail
11	March 31	I T techniques	Dr. Shailesh S
12	April 1	Biogas	Dr. Mini K.D
13	April 1	Demonstration of setting Vermicomposting Unit	Dr. Mini K D
14		Distribution of earth worms	Dr. Mini K D
15	May 2	Vermicompost harvesting	
16		Ppt. on steps involved in Vermicomposting	Dr. Mini K D

	Date	Place
Field visit	March 27	North Paravur Municipality vermicompost plant
Activity	Date	Supervisor
Report presentation	April 7	Dr. Mini K D

CV of Resource Persons

SRI SIVAKUMAR A K

Name	A.K.Sivakumar
Designation& Institution	Senior Education Officer WWF-India, Kerala State Office, Thiruvananthapuram
Contact	0471-2302265 (Office), +91 94473 86978 (Mobile) asivakumar@wwfindia.net (eMail)
Educational Qualification	MSc. Zoology BEd. Natural Science
Additional Qualifications	<ol style="list-style-type: none"> 1. Certificate Course on Conservation Biology by ATREE, Bangalore 2. Training of Trainers on Education for Sustainable Development by BVIEER, Pune, India 3. Attended many in-service training programs on Environment Education & Education for Sustainable Development
Specializations	<ol style="list-style-type: none"> 1. Environment Education 2. Education for Sustainable Development 3. Bird Watching/ Documentation 4. Preparation of Outreach materials
Current Responsibilities	<ol style="list-style-type: none"> 1. Impart WWF-India's Environment Education programs across the State for last 22 years in capacity of Senior Education Officer. 2. Coordinator for Asian Water-bird Census (AWC) for last 7 years in Thiruvananthapuram, Kollam and Pathanamthitta Districts 3. Coordinator for Bird Atlas Preparation in Thiruvananthapuram District 4. Coordinator for Heronry Count in Thiruvananthapuram District 5. Reviewer for eBird-India of Thiruvananthapuram District 6. Coordinator for Thiruvananthapuram Bird Race for last 15 years
Additional Achievements	<ol style="list-style-type: none"> 1. Conducted many Eco Trails for students of all levels and general public 2. Led many Nature Education Camps for students of all levels and general public

	<ol style="list-style-type: none"> 3. Coordinator for many action based Volunteer Engagement Programs 4. Implementation Officer for National Green Corps (NGC) in Kerala State during the academic year 2005-06 5. Led many Teachers Training Workshops on different themes 6. Mastered many Quiz Competitions on the theme, 'Biodiversity and Environment' for Kerala State Biodiversity Board, Kerala State Council for Science, Technology & Environment and Dept. of Museums & Zoos, Govt. of Kerala 7. Team leader in the Bird Surveys in most of the Protected Area network of the State. 8. Led many Environment Conservation Awareness Campaigns on different themes across the State for last 16 years 9. Led many awareness and action programs on Nature Conservation and Environment Protection. 10. Attended many Seminars/Workshops/Brain storming Sessions in the said field organized by Govt. Departments, Educational Institutions and NGOs.
Publications	<ol style="list-style-type: none"> 1. Field Guide on Wild Mammals of Kerala 2. Minnumeenum Meenukkittiyum – a handbook on Wetlands of Kerala (Malayalam) 3. Bird Diversity of Shendurney Wildlife Sanctuary 4. General articles in Aranyam, the publication of Kerala State Forests & Wildlife Department.

DR. PRASANTH NARAYANAN

Dr. Prasanth Narayanan S. works as a Research Associate in Advanced Centre of Environmental Studies and Sustainable Development, an Inter University Centre, at Mahatma Gandhi University, Kottayam, Kerala. He graduated in Zoology from NSS Hindu College, Changanassery and obtained post graduation in Environmental Science and Management from the School of Environmental Sciences, Mahatma Gandhi University in 2004. He completed his PhD in 2014 from the School of Environmental Sciences, Mahatma Gandhi University. As part of the PhD programme, he worked on the status and ecology of the near-threatened bird Oriental Darter *Anhinga melanogaster* at Kuttanad wetlands. From 2011 onwards he is getting trained under Dr. J.M. Julka and Dr. R. Paliwal, (retired Scientists from Zoological Survey of India), on the taxonomy of earthworms. Now he concentrating on the taxonomy and distribution of earthworms of India with special reference to the Western Ghats. As of now he described 6 new species, 1 new record for India and 20 new additions to the Kerala state. Having 60+ publications of international and national journals to his credit. Apart from this he is a member of Kottayam Nature Society and Malabar Natural History Society.

PROF. SULTAN AHMED ISMAIL


Sultan Ahmed Ismail is an Indian soil biologist and ecologist. His work has centred on techniques for recycling biodegradable waste into fertilizer using local varieties of earthworms, and on soil bioremediation.

Ismail received a D.Sc. in Zoology from the University of Madras in 2001 for his research on the role of earthworms in soil ecology and waste management. He is also the Managing Director of the Ecoscience Research Foundation. Government of Tamilnadu appointed him as a member of State Development Policy Council on 2021.

Ismail Sir works with the Department of Science and Technology of the Government of India, in the development of a module on vermicomposting as a sustainable ecological practice for children. He also conducted a project for the Environment and Forests Department of the Government of Tamil Nadu state for implementing vermicomposting in 50 schools in Chennai (Madras), and delivered several lectures to more than 200 schools in India and abroad on environmental awareness, solid waste management and vermicomposting. He is currently working with the Consumer Association of Penang (CAP), in an effort to

promote awareness of organic farming, vermitech and waste management to educational institutions and organic farmers of Malaysia.

His other research interests are on the anti-inflammatory properties of earthworms, the ultrastructure of the penial setae of earthworms, and the electrical bioluminescence of earthworms.



Dept. of Zoology, Sree Sankara College,
Kalady
Add-On Course in Organic Composting

Talk by
Dr. S. Prasanth Narayanan
Research Associate
(Advanced Centre of Environmental Studies and Sustainable Development, MG University,
Kottayam)

Topic: Introduction to Earthworms

Date 21/3/2023 Time : 11 am

Google meet : <https://meet.google.com/gns-vmqq-jkq>

On 21st March 2023, very informative session by Dr. Prasanth Narayanan was given to the students. He clarified the queries raised by the students.

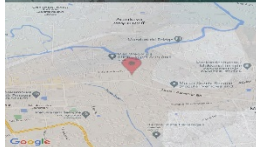
Internal Classes were engaged by the teachers of Zoology department, Dr. Mini K D and Dr. Minimol K C.

Field Visit to the Vermicomposting Unit of Paravoor Municipality

On 27th March 2022, 33 students of Add on Course accompanied by 2 Faculty members Dr. Mini K D and Dr. Minimol K C visited the Vermicomposting unit situated at Vedimara, Paravoor. The different composting methods like windrow as well as vermicompost were well introduced by the experts. Windrow method involves the compost media to degrade the already segregated mass heaps of biowastes. Vermicomposting unit utilises the earthworms like *Eudrilus euginae* & *Eisenia foetida* for the biowaste degradation. Already converted vermicompost was harvested and sorted by sieving mechanism and kept for sale.







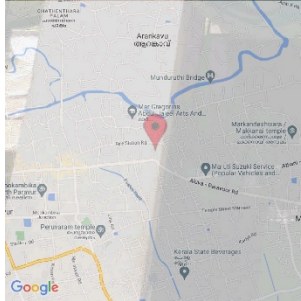
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Mannam
Kerala
India

2023-03-27(Mon) 11:47(am)



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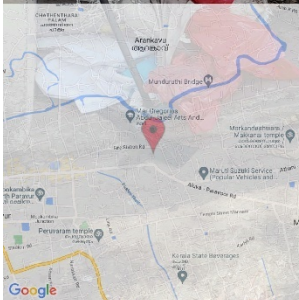
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North Paravur
Kerala
India

2023-03-27(Mon) 11:46(am)

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562R+3R7, Vedimara, Mannam, Kerala 683520, India

Mannam

Kerala

India

2023-03-27(Mon) 11:49(am)



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Talk on Vermicomposting 30/3/2023



ZOOLOGICAL SOCIETY OF KERALA
SCHOOL OF ENVIRONMENTAL SCIENCES, MG UNIVERSITY
IQAC & IIC SREE SANKARA COLLEGE KALADY
JOINTLY ORGANIZE

SOIL STORY AN EARTHWORM'S EYE VIEW



RESOURCE PERSON:

PROF. SULTAN AHMED ISMAIL, Ph.D, D.Sc
TEACHER, SOIL BIOLOGIST & ECOLOGIST, CHENNAI

DATE: 30/3/2023

TIME: 11:30 AM

VENUE:

SEMINAR HALL, SREE SANKARA COLLEGE, KALADY

All are Invited.

CONVENOR: DR. MINI K D

COORDINATOR, ADD ON COURSE IN ORGANIC COMPOSTING

DR. JAGANNADH V.

PRESIDENT, ZOOLOGICAL SOCIETY OF KERALA

DR. C.P. ANITHA DEVI

SECRETARY, ZOOLOGICAL SOCIETY OF KERALA



Talk on 'Soil Story – an Earthworm's Eye View' by Prof. Sultan Ahmed Ismail, Teacher, Soil Biologist, Ecologist was organized by Add on Course in Zoology, IQAC and IIC of Sree Sankara College Kalady. 105 students and 7 faculty members participated. IQAC Coordinator Dr. Manju T inaugurated the programme in which Dr. Mini K D, the coordinator welcomed the gathering. Dr. Sultan Ahmed Ismail lead the session Really a wonderful experience for the participants. IIC Coordinator Dr. Seena marked the vote of thanks

Prayer by Janaki S Kurup



Dr. Mini K D Welcoming the gathering



IQAC Coordinator Dr.Manju T giving inaugural address



IIC Coordinator Dr. Seena delivering the keynote address





Glimpses of the session lead Prof. Sultan Ismail





Interaction with the Public 30/3/2023 (AN)

There was an interaction with the Kudumbasree unit of Kalady, Cleaning Staff of Sree Sankara Group of institutions and the Staff and students of our institution in the afternoon at 2 pm. Prof. Sultan cleared the doubts of the participants in a very simple way.





The programme ended in 8th May 2023.

QUESTION PAPER FINAL EXAM
DEPT. OF ZOOLOGY
SREE SANKARA COLLEGE KALADY
ADD - ON COURSE – ORGANIC COMPOSTING SSCADP 18
FINAL EXAMINATION MARCH 2023

Time: 1 Hour

Max. Marks : 30

Part A

Answer any 5 questions.

Each question carries 1 mark

1. Define vermiculture
2. Name any 2 worms used in vermiculture
3. Write any 2 uses of vermiwash?
4. Write a short note on vermbed
5. Differentiate fertilizer from manure
6. What is Biogas?
7. pH of vermiwash?

(5x1=5)

Answer any 3 questions.

Each question carries 5 marks

8. Explain the environmental significance of vermicomposting.
9. Give an account on the control measures of enemies of earthworms
10. Write a note on the nutritional composition of vermicompost
11. Cite the differences between vermicompost & vermicast
12. Write a note on Biogas production?

(3x5=15)

Answer any 1 question.

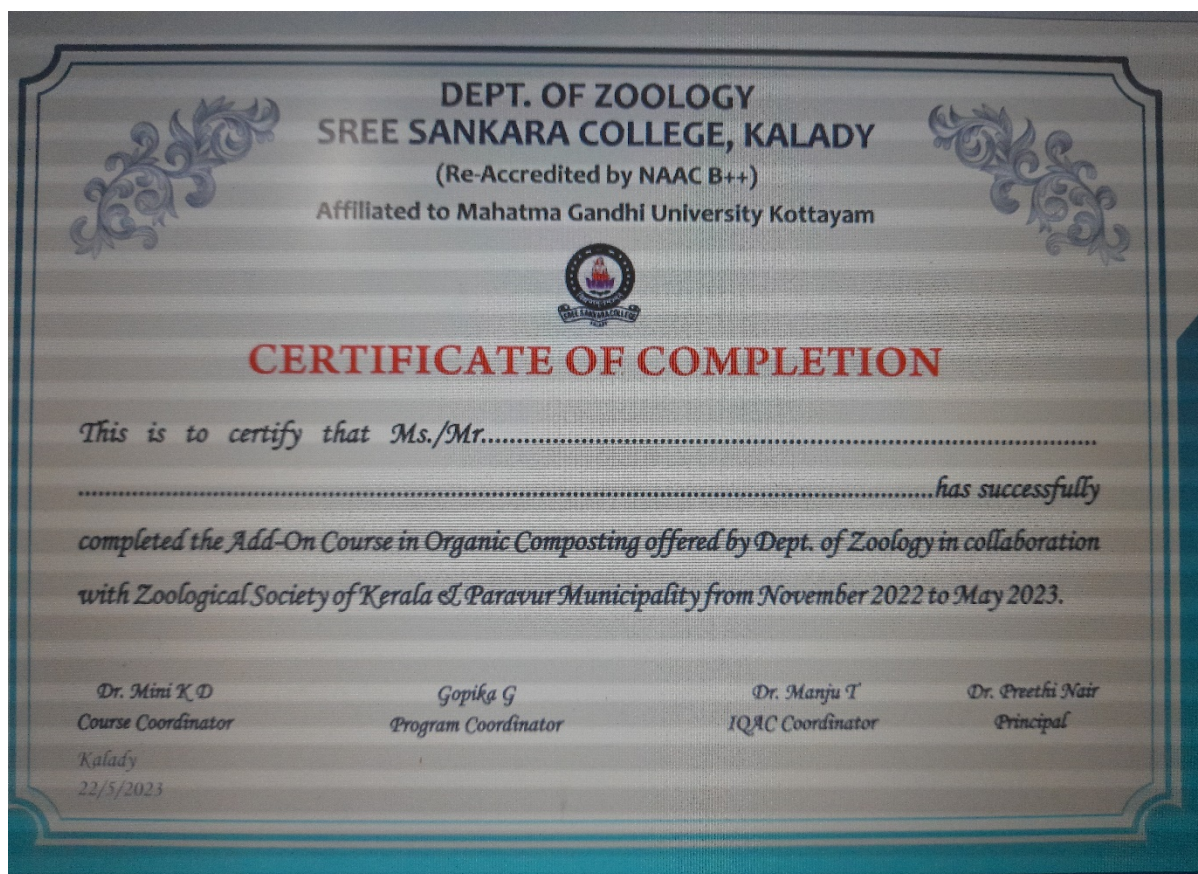
Each question carries 10 marks

15. Write an essay on the steps involved in vermiculture

(1x10=10)

COLLEGE,		KALADY		Class.....	
FOR THE PERIOD FROM.....				TO.....	
Date.....				Group.....	
Roll No.	Field Trip	I Exam	Final Exam	Signature	Remarks
Advaith N B	x	x	x	14	
Alwin Paul	x	x	x	28	
Amal Chandran	x	A	x	22	
Anamika T	x	x	x	28	
Ananya U P	x	x	x	22	
Anela P S	x	x	x	29	
Anila Thomas	x	x	x	28	
Arjun A	x	x	x	19	
Arjun Sreemurthy	x	x	x	20	
Arinthe M N	x	x	x	29	
Arjun Raju	x	x	x	21	
Arinthe M N	x	x	x	26	
Gokul Kishan K M	x	x	x	23	
Gireeshma Ravi	x	x	x	16	
Haridas P G	x	x	x	15	
Janaki S Karap	x	x	x	25	
Kanya T A	x	x	x	16	
Mithun K M	x	x	x	26	
Nagma C	x	x	x	19	
Nikhil K	x	x	x	27	
Prithi Johny	x	x	x	22	
Rishi Anwar	x	x	x	26	
Sreelakshmi Jagannathan	x	x	x	19	
Vinayak Reji	x	x	x	14	
Anandhu Saji	x	x	x	23	
Riya Augustini	x	x	x	30	
Rishika Raju	x	x	x	23	
Sirathurthi C P	x	x	x	24	
Neha Anwar K	x	x	x	26	
Rajalakshmi	x	x	x	27	
Amala	x	x	x	26	
Abhinandh Velayudhan	x	x	x	21	
Shahnaas	x	x	A		

Model Certificate



Programme Outcome

The programme could create awareness among the students on sustainable, self-sufficient ecosystem where soil fertility is enhanced and preserved for future generations. And with a focus on environmentally friendly practices, biodiversity, and resource preservation, organic farming ensures a healthier planet. All of them acquired confidence to start vermicomposting in their houses and produce compost for domestic agricultural purposes.

MoU & Linkages

Signed MoU with Zoological Society of Kerala and Paravoor Municipality.

The President of Zoological Society of Keral Dr. V.Jagannath handing over the MoU to Dr. Mini KD



MoU ZOOLOGICAL SOCIETY OF KERALA

भारतीय गैर न्यायिक

**पचास
रुपये**

रु.50



INDIA

**FIFTY
RUPEES**

Rs.50

INDIA NON JUDICIAL

കേരളം കേരള KERALA **CM 334475**

MEMORANDUM OF UNDERSTANDING

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Party No. 2: Zoological Society of Kerala

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Dr. PREETHI
Drawing and Disbu
Sree Sankara Coll



Principal
Sree Sankara College, Kalady



SHOBHA.R
Stamp Vendor
Angamaly



24 NOV 2022

No 30645/1000
28.11.2022

MoU PARAVOOR MUNICIPALITY



കേരളം കേരള KERALA

CF 991082

MEMORANDUM OF UNDERSTANDING

This MoU is an agreement between the following parties:

Party No.1 Sree Sankara College Kalady

Ernakulam District

Phone: 04842462341

Party No.2 Municipality Paravur

Ernakulam District

Phone: 0484 2449630

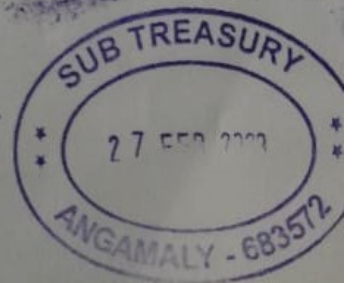
Subject

- This MoU is for educational purpose.
- It is the part of running Add-on course Organic Composting in the Department of Zoology
- Paravur Municipality is an organization which has successfully carrying out Vermiculture & Composting.

No 47738 / 200

03/03/2023
Principal Sree Sankara
College Kalady

SHOBHA.R
Stamp Vendor
Angamaly



Purpose & Scope

The purpose of this MoU is to create a cooperation between Sree Sankara College and Paravur Municipality to collaborate on mutually beneficial programmes like arranging the students' visit to the compost sites and to imbibe the technical skills for vermiculture.

Sree Sankara College

Students will adhere to strict discipline during the site visit & in the awareness classes.

Paravur Municipality

Arrange the needful during the site visit.

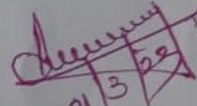
Provide resource person for giving classes to the students.

Terms & Conditions of MoU

This MoU shall be operational upon signing and will have duration of two years.


8/3/23
PRINCIPAL
SREE SANKARA COLLEGE
KALADY - 683 574




21/3/23
MINI ANTONY
Secretary-in-Charge
North Paravur Municipality

