

1.2.2 Number of Add on / Certificate programs offered during the session 2023-2024

- 1. Certificate Course in Vermiculture**
- 2. Certificate Course in Mushroom Culture**
- 3. Certificate Course in Biodiversity
Conservation and Management**
- 4. Certificate Course in Waste Management**

1.2.2 Number of Add on /Certificate programs offered during the session 2023-24

Name of Add on /Certificate programs offered	Course Code (if any)	Year of offering	No. of times offered during the same year	Duration of course	Number of students enrolled in the year	Number of Students completing the course in the year
1. Vermiculture	Nil	2023-2024	1	03 Months	07	07
2. Mushroom culture	Nil	2023-2024	1	03 Months	11	11
3. Biodiversity Conservation and Management	Nil	2023-2024	1	03 Months	25	25
4. Waste Management	Nil	2023-2024	1	03 Months	25	25



Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist-Chandrapur

1. Certificate Course in Waste Management

Broacher, Syllabus, Admitted Students and Program

Nilkanthrao Shinde Science and Arts College,
Bhadrawati Dist – Chandrapur



ADMISSION OPEN FOR
CERTIFICATE COURSE IN
WASTE MANAGEMENT

(IN ASSOCIATION WITH RAG-I UPCYCLING, CHANDRAPUR)

SESSION 2023-2024

DURATION : 03 MONTHS

ELIGIBILITY: XII PASS

DR. G. R. BEDARE

DR. L. S. LADKE

PROF. S. H. SHRIRAME

PRINCIPAL

CO-ORDINATOR

MOBILE NO. : 9921975747

Ladke
Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist-Chandrapur

MEMORANDUM OF UNDERSTANDING (MoU)

BETWEEN

**Nilkanthrao Shinde Science & Arts College,
Bhadrawati Distt: Chandrapur**

&

RAG-I Upcycling, Chandrapur

FOR

**SKILL DEVELOPMENT, TRAINING OF STUDENTS AND FACULTY
AND JOINT COLLABORATION THROUGH INDUSTRY RELEVANT
PROJECTS AND CONSULTANCY SERVICES**



Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Distt-Chandrapur

MEMORANDUM OF UNDERSTANDING

This Memorandum of understanding (hereinafter called as the 'MoU') is entered into on this the 05th day of July, Two thousand and Twenty Two (2022), by and between by its **Principal, Nilkanthrao Shinde Science & Arts College, Bhadrawati** hereinafter referred as 'First Party', the institution which expression, unless excluded by or repugnant to the subject or context shall include its successors-in-office, administrators and assigns).

AND

RAG -I UPCYCLING, Chandrapur (hereinafter referred to as "Second Party", company which expression, unless excluded by or repugnant to the subject or context shall include its successors - in-office, administrators and assigns).

(First Party and Second Party are hereinafter jointly referred to as 'parties' and individually as 'party')

WHEREAS:

- A) First Party is a Principal, **Nilkanthrao Shinde Science & Arts College, Bhadrawati**: is a leading educational institution in science and arts of the region and its various departments is entrusted with the responsibility of imparting education of students and upgrade their skill sets by using the facilities of its infrastructure facilities. The institute is also contributing to the rapidly growing technological knowledge and professional excellence. First Party & Second party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.


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AND

Second Party **RAG -I UPCYCLING, Chandrapur** is a company of recycling of waste material and supplies different products from waste material in India. The objective of the company is upcycling of waste material.

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MOU, THE PARTIES HERE TO AGREE AS FOLLOWS:

CLAUSE I CO-OPERATION

- 1.1 Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution. The parties shall keep each other informed of potential opportunities and shall share all relevant educational information that may be relevant to secure additional opportunities for one another.
- 1.2 First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities of the faculty specially department of Physics and Chemistry. First Party providing significant inputs to them in developing suitable teaching / skill enhancement systems, keeping in mind the needs of the industry, the Second Party.

CLAUSE 2 SCOPE OF THE MoU

- 2.1 The budding technicians from the institutions could play a key role in technological up-gradation, innovation and competitiveness of an industry. Both parties believe that close co-operation between the two would be of major benefit


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to the student community to enhance their skills and knowledge, without any prejudice to prevailing rules and regulations and without any disregard to any mechanism evolved and approved by the competent authorities of both parties. The areas of cooperation can be extended through mutual consent.

2.2 **Curriculum Design:** Second party will give valuable inputs to the First party in the latest technologies used in their institutions and accordingly customize the curriculum so that the students fit into the industrial scenario meaningfully.

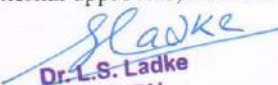
2.3 **Guest Lectures:** Second Party to extend the necessary support to deliver guest lecturers to the students of the First Party on the emerging technology trends in Design, Tooling, Material Testing and Quality Assurance.

2.4 **Faculty Development Programs:** Second Party to train the Faculties of First Party and vice versa as per the requirements. The mode of training will be in the form of conducting seminar, Workshops and Guest lectures. The second party would also be providing exposure to the faculty members of the first party.

2.5 **Skill Enhancement / Placement Assistance of Students:**

Second Party will actively engage in delivery of the training need of students of the First Party in order to bridge the skill gap and make them industry ready. The second party will also provide the necessary support and assistance into internships and placements of students of the first party. The second party will provide the skill training to the students of first party in the collection of waste material.

2.6 Both Parties to obtain all internal approvals, consents, permissions, of


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whatsoever nature required for offering the programmes on the terms specified herein.

2.7 There is no financial commitment on the part of the **Nilkanthrao Shinde Science & Arts College, Bhadrawati** the First party or the second party **RAG - I UPCYCLING, Chandrapur** to take up any programme mentioned in the MoU.

CLAUSE 3 VALIDITY

3.1 This Agreement will be valid for a period of five years (05) until it is expressly terminated by either Party on mutually agreed terms, during which period **RAG -I UPCYCLING, Chandrapur** the Second Party, as the case may be, will take effective steps for implementation of this MOU. Any act on the part of **Ragi Upcycling, Chandrapur** the Second Party after termination of this Agreement by way of communication, correspondence etc., shall not be construed as an extension of this MoU.

3.2 Both Parties may terminate this MoU upon 30 calendar days' notice in writing. In the event of Termination, both parties have to discharge their obligations.

3.3 The skill training of the students will be organized **RAG -I UPCYCLING, Chandrapur** in various areas as required the First party for the better employment of the students.

3.4 Students can undertake their project work at **RAG -I UPCYCLING, Chandrapur** in the upcycling of waste material.


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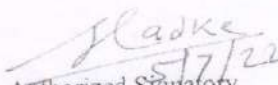
CLAUSE 4 RELATIONSHIP BETWEEN THE PARTIES

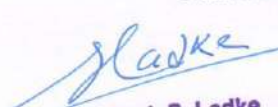
4.1 It is expressly agreed that **Principal, Nilkanthrao Shinde Science & Arts College, Bhadrawati** and **RAG -I UPCYCLING, Chandrapur** are acting under this MoU as independent contractors, and the relationship established under this MoU shall not be construed as a partnership. Neither Party is authorized to use the other party's name in any way, to make any representations or create any obligation or liability, expressed or implied, on behalf of the other Party, without the prior written consent of the other Party. Neither Party shall have, nor represent itself as having, any authority under the terms of this MoU to make agreements of any kind in the name of or binding upon the other party, to pledge the other party's credit or to extend credit on behalf of the other Party.

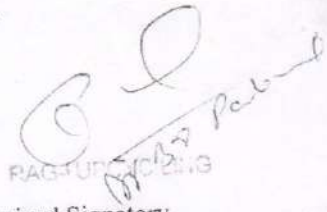
Any divergence or difference derived from the interpretation or application of the MoU shall be resolved by arbitration between the parties as per the Arbitration Act, 1996. The place of the arbitration shall be at District Head Quarters of the First Party. This undertaking is to be construed in accordance with Indian Law with exclusive jurisdiction in the Chandrapur District court.

AGREED:

For MoU Between **Principal, Nilkanthrao Shinde Science & Arts College, Bhadrawati** and **RAG -I UPCYCLING, Chandrapur**.

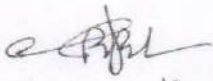

Authorized Signatory
Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist-Chandrapur


Authorized Signatory
PROPRIETOR
Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist-Chandrapur


RAG-I UPCYCLING

Name of Institution	Name of Institution
Address:- Principal, Nilkanthrao Shinde Science & Arts College, Bhadrawati dist-chandrapur 442902	Address:- RAG -I UPCYCLING, C/O Paliwal Hospital, Mahakali Ward, Chandrapur 442402
Contact details	Contact details
E-mail:- principalnscollege@gmail.com	E-mail:- bdpaliwal2@gmail.com
Web:-www.nscollege.ac.in	--


Witness 1


CDR. Gajendra R. Bhalerao


Witness 2

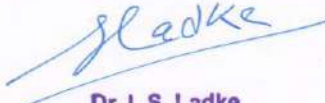

Abhilash Parihar

Witness 3


Prof. Sachin H. Shrivastava

Witness 4


Swati Ushkamalla



Dr. L.S. Ladke
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Bhadrawati, Dist-Chandrapur

Certificate Course in Waste Management

Syllabus

UNIT ONE:

Solid Waste Management -

Introduction, Public health importance of solid waste management, Classification of solid waste, Functional elements of solid waste management, Main sources of solid waste generation, Waste handling and separation, storage and processing at the sources,

UNIT TWO:

Liquid Waste Management -

Introduction, Public health importance of waste water/sewage, Classification of liquid waste/sewage, Waste water/sewage composition, Points to be consider before selecting one particular sewage disposal techniques, Liquid waste disposal methods at the rural communities/household level, Sewage/wastewater treatment

UNIT THREE:

Waste collection -

Methods of waste collection, collection techniques, Recycling and reuse, waste container compatibility, waste storage requirements, transportation of solid wastes, Ploughing in fields,

UNIT FOUR:

Contaminated Waste Management -

Introduction, Purpose of contaminated waste management, Collection and disposal of contaminated waste, Disposal of solid contaminated wastes, Disposal of liquid contaminated wastes, How to dispose contaminated sharps,

Treatment and disposal techniques for solid wastes—composting, vermin-composting, autoclaving, microwaving, incineration, non-incineration thermal techniques, use of refuse derived fuels,

Composting Aerobic and anaerobic methods – process description, process microbiology, design consideration, Mechanical composting, Vermicomposting,

Sanitary landfilling: Definition, advantages and disadvantages, site selection, methods, reaction occurring in landfill- Gas and Leachate movement, Control of gas and leachate movement, Design of sanitary landfill.



Dr. L.S. Ladke

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Course Outline

- 1) Introduction to solid waste management
- 2) Sources and types of solid wastes;
- 3) Physical and chemical properties of solid wastes;
- 4) Solid wastes generation;
- 5) On-site handling, storage and processing and collection of solid wastes;
- 6) Transfer stations and transport;
- 7) Ultimate disposal methods;
- 8) Resources and energy recovery;
- 9) Soil pollution;
- 10) Industrial solid waste collection and disposal;
- 11) Hazardous waste management

Learning outcomes

After completion of the course students should be able to-do sampling and characterization of solid waste; analysis of hazardous waste constituents; understand health and environmental issues related to solid waste management; apply steps in solid waste management-waste reduction at source, collection techniques, materials and resource recovery/recycling, transport, optimization of solid waste transport, treatment and disposal techniques; economics of the onsite vs. offsite waste management. After the completion of certificate, candidate will be able to start his own business in waste management system.




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NILKANTHRAO SHINDE SCIENCE AND ARTS COLLEGE, BHADRAWATI DIST-CHANDRAPUR
CERTIFICATE COURSE IN WASTE MANAGEMENT
SESSION 2023-24

students list

SR NO	NAME
1	Anamika Choudhari
2	Ragini Nikhade
3	Vishwarupa Karlekar
4	Priyanshu Aglave
5	Prathmesh Wadhai
6	Payal Sawsakade
7	rupali sawsakade
8	Roshani Chatare
9	Pranay dadmal
10	Mayur Deshmukh
11	Smita Meshram
12	Tejas Avsarmol
13	Janvi Thenge
14	Sneha Nannaware
15	Tejaswini Ambilkar
16	Shrutika Choukhe
17	Suraj Jiwtode
18	Pranlli moon
19	Mayuri M. Balpane
20	Nikita Bipte
21	Shradhha S. Wagh
22	Palak chunarkar
23	Pooja Biswas
24	Gayatri Shinde
25	Anandi Deshmukh



(G. R. Bedare)
Co-ordinator



Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist.-Chandrapur

NILKANTHRAO SHINDE SCIENCE AND ARTS COLLEGE, BHADRAWATI DIST-CHANDRAPUR
CERTIFICATE COURSE IN WASTE MANAGEMENT
SESSION 2023-24

marks list

SR NO	NAME	THEORY	FIELD VISIT	PROJECT	TOTAL MARKS
1	Anamika Choudhari	43	23	24	90
2	Ragini Nikhade	40	23	23	86
3	Vishwarupa Karlekar	44	22	24	90
4	Priyanshu Aglave	40	22	23	85
5	Prathmesh Wadhai	41	22	24	87
6	Payal Sawsakade	40	22	24	86
7	rupali sawsakade	40	22	22	84
8	Roshani Chatare	41	22	21	84
9	Pranay dadmal	42	22	22	86
10	Mayur Deshmukh	39	22	23	84
11	Smita Meshram	41	22	22	85
12	Tejas Avsarmol	44	22	21	87
13	Janvi Thenge	39	22	23	84
14	Sneha Nannaware	42	22	24	88
15	Tejaswini Ambilkar	42	22	22	86
16	Shrutika Choukhe	41	22	23	86
17	Suraj Jiwtode	38	22	21	81
18	Pranji moon	41	22	21	84
19	Mayuri M. Balpane	38	22	23	83
20	Nikita Bipte	39	22	22	83
21	Shradhha S. Wagh	32	22	21	75
22	Palak chunarkar	43	22	23	88
23	Pooja Biswas	43	22	21	86
24	Gayatri Shinde	41	22	24	87
25	Anandi Deshmukh	40	22	23	85


Dr. G.R. Bealake
Co-ordinator


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist-Chandrapur

**2. Certificate Course in Biodiversity
Conservation and Management**
**Broacher, Syllabus, Admitted Students and
Program**

**Nilkanthrao Shinde Science and Arts College,
Bhadrawati, District- Chandrapur**



Admission open
for
**CERTIFICATE COURSE IN
BIODIVERSITY CONSERVATION AND
MANAGEMENT**

(In Association with Eco-Pro, Chandrapur)

Session 2023-2024

Duration – 03 Month

Eligibility – XIIth Pass

Dr. Narendra V. Harney
Dr. Nathu S. Wadhve
Co-Ordinator of course


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist.-Chandrapur

Dr. L.S. Ladke
Principal



ECO-PRO

(Ecological Protection Organisation)

Reg. Mah/379/2006(Chd.)

Founder President

National Youth Awardee

Main Office : 'Parikshram', 2nd floor, Bawis Chowk, Pathanpura Road, Chandrapur-442 402
Mob. : 9370320746, Website : www.ecopro.org.in, E-mail : ecoprochd@gmail.com

Ref.No. : ECO-PRO/MSU/2022/02

Date : 27/9/2022

Memorandum of Understanding(MoU) For Academic and Social Co-operation Between

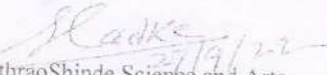
NilkanthraoShinde Science and Arts College, Bhadrawati, Dist. Chandrapur
And
Eco-Pro, Chandrapur


NilkanthraoShinde Science and Arts College, Bhadrawati, Dist. Chandrapur and Eco-Pro, Chandrapur wish to initiate collaboration in the field of Environment Protection and Social activities leading to academic and social interaction.

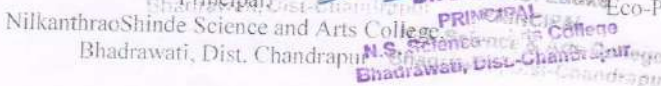
Both the parties have reached the following understanding.

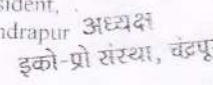
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2. Biodiversity conservation and management.
3. Study tour, exchange and temporary assignment of personal from one party to other.
4. Joint organization of workshops, seminars, training on Social issues.
6. Wildlife conservation and awareness, Awareness and protection of archeological heritage.
8. Awareness about importance of health issues and blood donation
9. To inculcate good habits in youth to develops themselves for the cause of nations.
10. To visit the Eco-Pro office

This Memorandum of Understanding (MoU) is signed between Dr. L.S. Ladke, Principal, NilkanthraoShinde Science and Arts College, Bhadrawati, Dist. Chandrapur and Shri Badu S. Dhotre, Founder President, Eco-Pro, Chandrapur on dated for the period of five years.


For NilkanthraoShinde Science and Arts College, Bhadrawati, Dist. Chandrapur
Dr. L.S. Ladke,
Principal


For Eco-Pro, Chandrapur
Shri Badu S. Dhotre,
Founder President,
Eco-Pro, Chandrapur


N.S. Science and Arts College
Bhadrawati, Dist. Chandrapur


अध्यक्ष
इको-प्रो संस्था, चंद्रपूर

“पर्यावरण संवर्धनाकरिता सर्वेसंमतम्”

NSSC/269/2022

Date: 27/09/2022

Memorandum of Understanding(MoU)
For Academic and Social Co-operation
Between

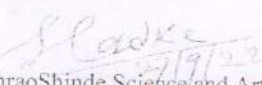
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Eco-Pro, Chandrapur

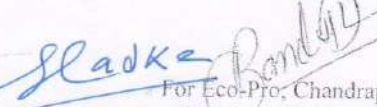
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Both the parties have reached the following understanding.

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For NilkanthraoShinde Science and Arts
College, Bhadrawati, Dist. Chandrapur
Principal,
NilkanthraoShinde Science and Arts College,
Bhadrawati, Dist. Chandrapur


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist. Chandrapur

For Eco-Pro, Chandrapur
Shri Badu S. Dhotre,
Founder President,
Eco-Pro, Chandrapur
अध्यक्ष
इको-प्रो संस्था, चंद्रपूर

BHADRAAWATI SHIKSHAN SANSTHA, BHADRAWATI
NILKANTHRAO SHINDE SCIENCE & ARTS COLLEGE,
BHADRAWATI DISTT: CHANDRAPUR

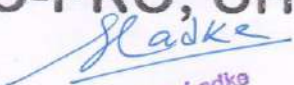
MEMORANDUM OF UNDERSTANDING (MOU)

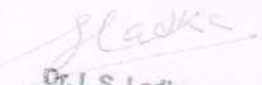
BETWEEN

NILKANTHRAO SHINDE SCIENCE &
ARTS COLLEGE, BHADRAWATI
DISTT: CHANDRAPUR

&

ECO-PRO, CHANDRAPUR


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Dist-Chandrapur


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist-Chandrapur

Memorandum of Understanding (MoU)

For Academic and Social Co-operation

Between

Nilkanthrao Shinde Science and Arts College, Bhadrawati, Dist. Chandrapur

And


Eco-Pro, Chandrapur

Nilkanthrao Shinde Science and Arts College, Bhadrawati, Dist. Chandrapur and Eco-Pro, Chandrapur wish to initiate collaboration in the field of Environment Protection and Social activities leading to academic and social interaction.


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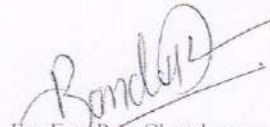
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This Memorandum of Understanding (MoU) is signed between Dr. L.S. Ladke, Principal, Nilkanthrao Shinde Science and Arts College, Bhadrawati, Dist. Chandrapur and Shri Badu S. Dhotre, Founder President, Eco Pro, Chandrapur on dated for the period of five years.




For Nilkanthrao Shinde Science and Arts
College, Bhadrawati, Dist. Chandrapur
Dr. L.S. Ladke,
Principal,

Nilkanthrao Shinde Science and Arts College
Bhadrawati, Dist. Chandrapur

PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist. Chandrapur



For Eco-Pro, Chandrapur
Shri Badu S. Dhotre,
Founder President,
Eco-Pro, Chandrapur


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist. Chandrapur

MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

NILKANTHRAO SHINDE SCIENCE & ARTS
COLLEGE, BHADRAWATI
DISTT: CHANDRAPUR

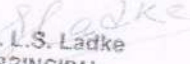
&

ECO PRO, CHANDRAPUR

FOR

SKILL DEVELOPMENT, TRAINING OF STUDENTS AND FACULTY
WITH JOINT COLLABORATION FOR AWARENESS ABOUT
ENVIRONMENTAL CONSERVATION.


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist.-Chandrapur


Dr. L.S. Ladke
PRINCIPAL
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(First Party and Second Party are hereinafter jointly referred to as 'parties' and individually as 'party')

WHEREAS:

- A) First Party is a **Principal, Nilkanthrao Shinde Science & Arts College, Bhadrawati**: is a leading educational institution of the region and its various departments of Science, Arts and Ph.D. is entrusted with the responsibility of imparting education of students and upgrade their technical skill sets by using the facilities of its infrastructure facilities. First Party & Second party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.


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AND

Second Party **Eco Pro, Chandrapur** is a NGO which work in the field of Environment and Forest. The objective of this NGO is to protect the Environment and Forest.

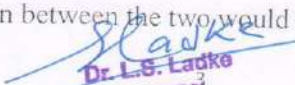
NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MoU, THE PARTIES HERE TO AGREE AS FOLLOWS:

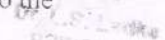
CLAUSE I CO-OPERATION

- 1.1 Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution. The parties shall keep each other informed of potential opportunities and shall share all relevant educational information that may be relevant to secure additional opportunities for one another.
- 1.2 First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities of the faculty specially department of Botany and Zoology. First Party providing significant inputs to them in developing suitable teaching / skill enhancement systems, keeping in mind the needs of the society, the Second Party.

CLAUSE 2 SCOPE OF THE MoU

- 2.1 The faculties from the institutions could play a key role in technological up-gradation, innovation and competitiveness. Both parties believe that close co-operation between the two would be of major benefit to the


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student community to enhance their skills and knowledge, without any prejudice to prevailing rules and regulations and without any disregard to any mechanism evolved and approved by the competent authorities of both parties. The areas of cooperation can be extended through mutual consent.

- 2.2 **Curriculum Design:** Second party will give valuable inputs to the First party in the technologies used in their NGO and accordingly form of knowledge and awareness in the curriculum so that the students will act for conservation of environment.
- 2.3 **Guest Lectures:** Second Party to extend the necessary support to deliver guest lecturers to the students of the First Party on the emerging trends in environmental issues.
- 2.4 **Faculty Development Programs:** Resource Person of Second Party will give training to the Faculties of First Party and vice versa as per the requirements. The mode of training will be in the form of conducting seminar, Workshops, field visits and Guest lectures. The second party would also be providing exposure to the faculty members of the first party.
- 2.5 **Skill Enhancement/Placement Assistance of Students:**
Second Party will actively engage in delivery of the training, field work need of students of the First Party in order to awareness of students. The second party will provide the skill training to the students of first party on environmental issues.
- 2.6 Both Parties to obtain all internal approvals, consents, permissions, of


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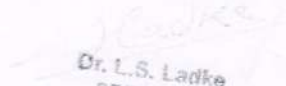
Whatsoever nature required for offering the programmes on the terms specified herein.

- 2.7 There is no financial commitment on the part of the **Nilkanthrao Shinde Science & Arts College, Bhadrawati**, the First party or the second party **Eco Pro, Chandrapur** to take up any programme mentioned in the MoU.

CLAUSE 3 VALIDITY

- 3.1 This Agreement will be valid for a period of five years (05) until it is expressly terminated by either Party on mutually agreed terms, during which period Eco Pro, Chandrapur the Second Party, as the case may be, will take effective steps for implementation of this MOU. Any act on the part of Eco Pro, Chandrapur the Second Party after termination of this Agreement by way of communication, correspondence etc., shall not be construed as an extension of this MoU.
- 3.2 Both Parties may terminate this MoU upon 30 calendar days' notice in writing. In the event of Termination, both parties have to discharge their obligations.
- 3.3 The training of the students will be organized by First Party in various areas as required to the students and second party will provide the Resource Persons.
- 3.4 Students can undertake their project work at Eco Pro, Chandrapur on Environmental Conservation.


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CLAUSE 4 RELATIONSHIP BETWEEN THE PARTIES

4.1 It is expressly agreed that Principal, Nilkanthrao Shinde Science & Arts College, Bhadrawati and Eco Pro, Chandrapur are acting under this MoU as independent contractors, and the relationship established under this MoU shall not be construed as a partnership. Neither Party is authorized to use the other party's name in any way, to make any representations or create any obligation or liability, expressed or implied, on behalf of the other Party, without the prior written consent of the other Party. Neither Party shall have, nor represent itself as having, any authority under the terms of this MoU to make agreements of any kind in the name of or binding upon the other party, to pledge the other party's credit or to extend credit on behalf of the other Party.


Any divergence or difference derived from the interpretation or application of the MoU shall be resolved by arbitration between the parties as per the Arbitration Act, 1996. The place of the arbitration shall be at District Head Quarters of the First Party. This undertaking is to be construed in accordance with Indian Law with exclusive jurisdiction in the Chandrapur District court.


AGREED:

For MoU between Principal, Nilkanthrao Shinde Science & Arts College, Bhadrawati and Eco Pro, Chandrapur.

Authorized Signatory

Authorized Signatory


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist. Chandrapur


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist. Chandrapur

Name of Institution	Name of Institution
Address:- Principal, Nilkanthrao Shinde Science & Arts College, Bhadrawati, Dist-Chandrapur 442902	Address:-Eco Pro, Chandrapur
Contact details	Contact details
Mobile No.	Mobile No.
E-mail:- principalnscollege@gmail.com	E-mail:-
Web:-www.nscollege.ac.in	Web:-

Witness 1

Witness 2

Witness 3

Witness 4

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 Bhadrawati, Dist-Chandrapur

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 Bhadrawati, Dist-Chandrapur

Nilkanthrao Shinde Science and Arts College, Bhadrawati,
District- Chandrapur

Session 2022-2023

Certificate Course
in
Biodiversity Conservation and Management

Nilkanthrao Shinde Science and Arts College, Bhadrawati, District- Chandrapur has launched the 3 months Certificate course in Biodiversity Conservation and Management for enabling the Graduate Degree Holders of any disciplines in acquiring expert knowledge in the fields of biodiversity, its types, importance, threatened to the biodiversity and different measures to protect biodiversity and its management.

Duration:

- 3 months. The certificate course starts with starting the session of every year.

Eligibility:


- Any discipline of running graduates and postgraduates.


Participation:

- Students /Research Scholars /Faculty Members and any interested persons are eligible to participate.

Awards:

- Certificate course in Biodiversity Conservation and Management will be awarded to all the successfully candidates by Nilkanthrao Shinde Science and Arts College, Bhadrawati, District- Chandrapur


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Evaluation:

- Evaluation will be on the basis of theory, practical examination and field based submission of assignments.

Certificate Course Fees:

- Nil

Number of seats:

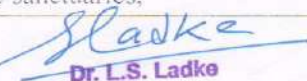
- 25

Syllabus – Scheme of marking

Sr. No.	Title	Weightages
1	Theory - Biodiversity Conservation and Management	60 Marks
2	Practical – Including submission	40 Marks

Syllabus - Theory

Unit	Title
I	Biodiversity - Concept and definition 1. Biodiversity: Basic concepts, importance and conservation needs, levels, uses, types of biodiversity, 2. Some biodiversity indicators. 3. Economic importance of biodiversity and wild life.
II	Causes of Biodiversity 1. Factors for decline of biological diversity. 2. Approaches for conservation of biological diversity. 3. Protection of wild flora, fauna and natural habitats. 4. Concept of threatened species. 5. Threatened and endangered animals and plants of India.
III	Values of Biodiversity 1. In-situ conservation, 2. Ex-situ conservation. 3. Wild life sanctuaries,


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	4. National Parks and Biosphere Reserve. 5. Gene and germ-plasm banks.
IV	Threats to Biodiversity 1. Threats of biodiversity 2. International and national efforts to conserve biodiversity. 3. Biodiversity conventions and socio-cultural aspects of biodiversity. 4. Biotechnological needs for biodiversity conservation. 5. Traditional knowledge and biodiversity conservation. 6. IUCN Threatened Categories 7. Conservation Policies and Law


Syllabus – Practical

Sr. No.	Title
1	Identification of economically important animals and plants
2	Field work for familiarizing the local fauna and flora
3	Study tour of biodiversity rich zones of nearby forest
4	Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
5	Visit to a local area to document environmental assets river/forest/grassland/hill/mountain
6	Viva –Voce.

Syllabus – Submission work

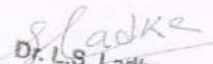
Sr. No.	Title
1	Field work to nearby forest to study the biodiversity
2	Preparation and submission of Field Report

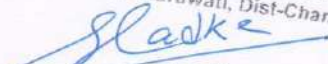

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Books Recommended:

1. Groom, M. J., Meffe, G. R. and C. R. Carroll. 2006. Principles of Conservation Biology. Sinauer Associates, Inc., USA.
2. Krishnamurthy, K. V. 2003. Textbook of Biodiversity. Science Publication.
3. Primack, R. 2006. Essentials of Conservation Biology. Sinauer Associates, Inc., USA.
4. Hambler, C. 2004. Conservation. Cambridge University Press.
5. Van Dyke, F. 2008. Conservation Biology Foundations, Concepts, Applications 2nd Edition, Springer.
6. Lockwood, M., Vorboys, G. and Kothari A. (Ed.). Managing Protected Areas
7. Stuart, C., Spalding, M and Jenkins, M. the world's Protected Areas: Status, Values and prospects in 21st century
8. Turner, M.G., Gardner, R. H. and O'Neill, R. V. Landscape ecology in theory and practice: pattern and process
9. Chapin, F.S. Pamel, A. M. and Vitousek, P Principles of terrestrial Ecosystem ecology
10. Perrow, M. R. and Davy, A. J. Handbook of ecological Restoration Vol I Principles of restoration


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Bhadrawati Shikshan Sanstha, Bhadrawati's

NILKANTHRAO SHINDE SCIENCE & ARTS COLLEGE
Bhadrawati, District Chandrapur - 442902

Accredited Grade "B++" by NAAC Bangalore (4th Cycle) (CGPA. 2.94)
Permanently Affiliated to Gondawana University, Gadchiroli

In Collaboration with
Eco - Pro, Chandrapur

CERTIFICATE COURSE
IN
BIODIVERSITY CONSERVATION AND MANAGEMENT

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

of _____ has successfully completed the **CERTIFICATE COURSE IN BIODIVERSITY**
CONSERVATION AND MANAGEMENT during the Academic Session 20 - 20 .

Ladke

Dr. L. S. Ladke
PRINCIPAL

N. S. Science & Arts College
Bhadrawati, Chandrapur

Dr. N. S. Washnave
Course Co-ordinator
N. S. Science And Arts College,
Bhadrawati

Dr. L. S. Ladke
Principal
N. S. Science And Arts College,
Bhadrawati


Shinde
Dr. Vivek N. Shinde
President
Bhadrawati Shikshan Sanstha,
Bhadrawati

सूचना

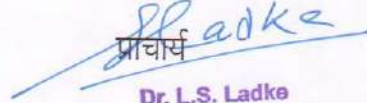
महाविद्यालयातील बी.एससी. भाग एक सेमिस्टर दोन च्या सर्टिफिकेट कोर्स इन बायोडायव्हर्सिटी कंजर्वेशन अँड मॅनेजमेंट मध्ये भाग घेतलेल्या विद्यार्थ्यांना सुचित करण्यात येते की वरील कोर्सची परीक्षा दिनांक 27-03-2024 ला सकाळी ठीक नऊ वाजता खोली क्रमांक 45 मध्ये होणार असून सर्वांनी उपस्थित राहावे.

दिनांक : 20-03-2024

भद्रावती


BSC I


Bsc 1st year


प्राचार्य
Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist.-Chandrapur

Nilkanthrao Shinde Science and Arts College, Bhadrawati, District- Chandrapur

Session 2023-2024

Certificate Course in Biodiversity Conservation and Management

Date- 27-03-2024

Time – 2 Hours

Max. Marks – 60 Marks

Theory Question Paper

Note- 1) All questions are compulsory

2) All questions carry equal marks

Q 1) Describe types, importance and conservation needs of biodiversity.....12 Marks

Q 2) Describe threatened and endangered animal and plants of India.....12 Marks

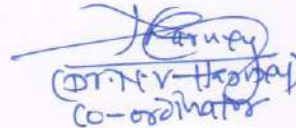
Q 3) Describe National Parks and Biosphere Reserve.....12 Marks

Q 4) Describe conservation policies and law of biodiversity conservation.....12 Marks

Q 5) Write an essay on Biodiversity Conservation and Management.....12 Marks



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(Dr. N.V. Hoshay)
Co-ordinator

Nilkanthrao Shinde Science and Arts College, Bhadrawati, District- Chandrapur

Session 2023-2024

Certificate Course in Biodiversity Conservation and Management

Date- 27-03-2024

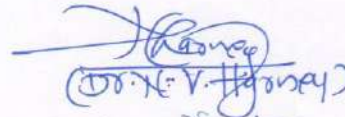
Time – 2 Hours

Max. Marks – 40 Marks

Practical Question Paper

- Q 1) Identification of economically important animals.....10 Marks
- Q 2) Identification of economically important Plants.....10 Marks
- Q 3) Threatened and endangered animal and plants of India.....10 Marks
- Q 4) Submission of Field Visit Report10 Marks


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Bhadrawati, Dist.-Chandrapur


(Dr. N.V. Hanay)
co-ordinator.

Attendance Sheet – Theory Examination

Sr. No.	Name of Student	Signature
1.	Agbattanwar Pranay Shrikant	<i>P. Shrikant</i>
2.	Behere Bhumi Ajay	<i>Bhumi</i>
3.	Bhendare Samiksha Santosh	<i>S. S. Bhendare</i>
4.	Bhoyar Nayan Kishor	<i>Nayan</i>
5.	Bodhale Minakshi Kalidas	<i>M. Bodhale</i>
6.	Bundhe Priyanka Vithoba	<i>Bundhe</i>
7.	Chaudhari Sakshi Gajanan	<i>S. Chaudhari</i>
8.	Chende Pournima Saibaba	<i>P. S. Chende</i>
9.	Dadmal Pranali Bhaurao	<i>P. B. Dadmal</i>
10.	Deshmukh Anandi Yuvraj	<i>Anandi</i>
11.	Donge Palak Narayan	<i>P. Donge</i>
12.	Hiwale Sankisa Sunil	<i>S. Hiwale</i>
13.	Ingole Isha Vilas	<i>I. V. Ingole</i>
14.	Matte Sneha Ashok	<i>Sneha</i>
15.	Parshive Gayatri Ashok	<i>Gayatri . P</i>
16.	Pawar Gayatri Tukaram	<i>Gayatri</i>
17.	Rode Rajshree Haridas	<i>H. R. Rode.</i>
18.	Rohankar Shrawani Pandurang	<i>S. Rohankar.</i>
19.	Sawsakade Payal Maroti	<i>P. Sawsakade</i>
20.	Sawsakade Rupali Gajanan	<i>R. sawsakade</i>
21.	Sharma Sejal Ajay Kumar	<i>Sejal</i>
22.	Shinde Gayatri Sanjay	<i>Gayatri Sanjay</i>
23.	Wadhai Prathamesh Hanuman	<i>P. H. Wadhai</i>
24.	Yekar Kritika Santosh	<i>B. Yekar</i>
25.	Zilpe Aishwarya Vilas	<i>A. Zilpe.</i>

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 PRINCIPAL
 N.S. Science & Arts College
 Bhadrawati, Dist.-Chandrapur

H. V. H. H. H.
 (Dr. H. V. H. H. H.)
 course - co-ordinator

Attendance Sheet – Practical Examination

Sr. No.	Name of Student	Signature
1.	Agbattanwar Pranay Shrikant	<u>Pranay Shrikant</u>
2.	Behere Bhumi Ajay	<u>Bhumi</u>
3.	Bhendare Samiksha Santosh	<u>S. S. Bhendare</u>
4.	Bhoyar Nayan Kishor	<u>Nayan</u>
5.	Bodhale Minakshi Kalidas	<u>M. Bodhale</u>
6.	Bundhe Priyanka Vithoba	<u>Bundhe</u>
7.	Chaudhari Sakshi Gajanan	<u>S. Chaudhari</u>
8.	Chende Pournima Saibaba	<u>P. S. Chende</u>
9.	Dadmal Pranali Bhaurao	<u>P. B. Dadmal</u>
10.	Deshmukh Anandi Yuvraj	<u>Anandi</u>
11.	Donge Palak Narayan	<u>Palak</u>
12.	Hiwale Sankisa Sunil	<u>Hiwale</u>
13.	Ingole Isha Vilas	<u>I. V. Ingole</u>
14.	Matte Sneha Ashok	<u>Sneha</u>
15.	Parshive Gayatri Ashok	<u>Gayatri. P</u>
16.	Pawar Gayatri Tukaram	<u>Gayatri</u>
17.	Rode Rajshree Haridas	<u>H. R. Rode</u>
18.	Rohankar Shrawani Pandurang	<u>S. Rohankar</u>
19.	Sawsakade Payal Maroti	<u>P. Sawsakade</u>
20.	Sawsakade Rupali Gajanan	<u>P. Sawsakade</u>
21.	Sharma Sejal Ajay Kumar	<u>Sejal</u>
22.	Shinde Gayatri Sanjay	<u>Gayatri Shinde</u>
23.	Wadhai Prathamesh Hanuman	<u>P. H. Wadhai</u>
24.	Yerekar Kritika Santosh	<u>Yerekar</u>
25.	Zilpe Aishwarya Vilas	<u>A. Zilpe</u>

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Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist.-Chandrapur

Harney
Dr. N.V. Harney
CO-ORDINATOR

Nilkanthrao Shinde Science and Arts College, Bhadrawati, District- Chandrapur


Session 2023-2024

Certificate Course in Biodiversity Conservation and Management

Attendance Sheet

Sr. No.	Name of Student	Signature
1.	Agbattanwar Pranay Shrikant	Ashrikant
2.	Behere Bhumi Ajay	Bhumi
3.	Bhendare Samiksha Santosh	S. S. Bhendare
4.	Bhoyar Nayan Kishor	Nayan
5.	Bodhale Minakshi Kalidas	Minakshi
6.	Bundhe Priyanka Vithoba	Bundhe
7.	Chaudhari Sakshi Gajanan	S. Chaudhari
8.	Chende Pournima Saibaba	P. S. Chende
9.	Dadmal Pranalal Bhaurao	P. B. Dadmal
10.	Deshmukh Anandi Yuvraj	Anandi
11.	Donge Palak Narayan	P. Donge
12.	Hiwale Sankisa Sunil	Hiwale
13.	Ingole Isha Vilas	T. V. Ingole
14.	Matte Sneha Ashok	Sneha
15.	Parshive Gayatri Ashok	Gayatri. P
16.	Pawar Gayatri Tukaram	Gayatri
17.	Rode Rajshree Haridas	H. R. Rode.
18.	Rohankar Shrawani Pandurang	S. Rohankar.
19.	Sawsakade Payal Maroti	P. Sawsakade
20.	Sawsakade Rupali Gajanan	P. Sawsakade
21.	Sharma Sejal Ajay Kumar	Sejal
22.	Shinde Gayatri Sanjay	Gayatri Shinde
23.	Wadhai Prathamesh Hanuman	P. H. Wadhai
24.	Yerekar Kritika Santosh	Yerekar
25.	Zilpe Aishwarya Vilas	A. Zilpe.


Dr. L.S. Ladke
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Bhadrawati, Dist. Chandrapur


Dr. N.V. Harney
CO-ORDINATOR

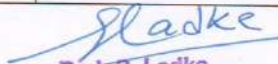
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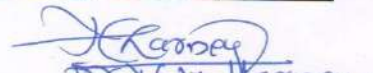
Session 2023-2024

Certificate Course in Biodiversity Conservation and Management

Result Sheet

Sr. No.	Name of Student	Theory 60 marks	Practical 40 marks	Total	Result
1.	Agbattanwar Pranay Shrikant	60	40	100	Pass
2.	Behere Bhumi Ajay	60	40	100	Pass
3.	Bhendare Samiksha Santosh	58	38	96	Pass
4.	Bhoyar Nayan Kishor	56	36	92	Pass
5.	Bodhale Minakshi Kalidas	58	38	96	Pass
6.	Bundhe Priyanka Vithoba	56	36	92	Pass
7.	Chaudhari Sakshi Gajanan	56	36	92	Pass
8.	Chende Pournima Saibaba	58	38	96	Pass
9.	Dadmal Pranali Bhaurao	56	36	92	Pass
10.	Deshmukh Anandi Yuvraj	60	40	100	Pass
11.	Donge Palak Narayan	56	36	92	Pass
12.	Hiwale Sankisa Sunil	58	38	96	Pass
13.	Ingole Isha Vilas	56	36	92	Pass
14.	Matte Sneha Ashok	60	40	100	Pass
15.	Parshive Gayatri Ashok	60	40	100	Pass
16.	Pawar Gayatri Tukaram	56	36	92	Pass
17.	Rode Rajshree Haridas	58	38	96	Pass
18.	Rohankar Shrawani Pandurang	60	40	100	Pass
19.	Sawsakade Payal Maroti	56	36	92	Pass
20.	Sawsakade Rupali Gajanan	60	40	100	Pass
21.	Sharma Sejal Ajay Kumar	58	38	96	Pass
22.	Shinde Gayatri Sanjay	60	40	100	Pass
23.	Wadhai Prathamesh Hanuman	58	38	96	Pass
24.	Yerekar Kritika Santosh	58	38	96	Pass
25.	Zilpe Aishwarya Vilas	60	40	100	Pass


Dr. L.S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist.-Chandrapur


Dr. N.V. Jarmey
co-ordinator.

3. Certificate Course in Vermiculture

Broucher, Syllabus, Admitted Students and Program

NILKANTHRAO SHINDE SCIENCE AND ARTS COLLEGE,
BHADRAWATI DIST.CHANDRAPUR - 442902

Admission Open

For

CERTIFICATE COURSE IN VERMICULTURE

ACADEMIC SESSION : 2023-2024

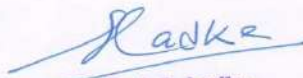
Organised by Department of Zoology,
Nilkanthrao Shinde Science and Arts College, Bhadrawati

DURATION OF COURSE : THREE MONTHS

FEES : FREE OF COST(NO FEES)

COURSE CO-ORDINATOR

Dr.Shashikant Ramrao Sitre
Assistant Professor
Department of Zoology
N.S.Science and Arts College, Bhadrawati



Dr. I. S. Ladke
PRINCIPAL
N.S. Science & Arts College
Bhadrawati, Dist.-Chandrapur

2023 - 2024

NILKANTHRAO SHINDE SCIENCE AND ARTS COLLEGE, BHADRAWATI
DIST.CHANDRAPUR 442902

CERTIFICATE COURSE IN VERMICULTURE

Department of Zoology

SYLLABUS

Academic Session : 2023-24

Note: The Syllabus of this Three Month Certificate Course is based on theory and practical periods. The written examination (Theory Paper) will be conducted based on this course of 100 marks after the course is over. Certificates will be given to all the participant students.

Unit – I

1. Vermiculture and Vermicomposting
2. Identification of Earthworm species
3. Earthworm species for vermicompost production
4. Worm related opportunities for farmers – potential income diversification, sale of earthworms, sale of vermicompost.

Unit- II

1. Essential things for vermicompost production.
2. Common bedding materials
3. Common worm feed stocks
4. Moisture and aeration in vermicompost production

Unit- III

1. Vermicompost pit construction
2. Other important parameters for vermicompost production and vermiculture - PH, Salt content, Urine content.
3. Methods of harvesting Worms –Manual Methods, Self harvesting methods.
4. The value of Vermicompost – Ability to stimulate plant growth, level of beneficial microorganisms, level of plant available nutrients, ability to repel pests.

Unit- IV

1. Calculating rates of reproduction of worms
2. Pests and diseases of worms – Moles, birds, centipedes, ant,mites,protein poisoning of worms.
3. Vermicompost systems –Windrows, top feed windrows, beds or bins, flow through reactors.
4. Vermicomposting and water quality issues, climate change factors, nutrient profile of vermicompost , vermiwash preparation.

Practicals :

1. Classification of earthworms
2. Study of vermicompost unit preparation
3. Study of common bedding materials
4. Vermiwash preparation.


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N.S. Science & Arts College
Bhadrawati, Dist.-Chandrapur

5. Study of common Pests of worms
6. Nutrient profile of vermicompost
7. Nutrient profile of vermiwash

Reference Books :

- Manual on Farm Vermicomposting and Vermiculture –Glenn Munroe, Organic Agriculture Centre of Canada.
- Myers ruth (1969). The ABC's of earthworm Business, Shields Publication, Wisconsin, USA, 64pp.
- Vermibiotechnology – L.S.Ranganathan
- Organic Farming – A.K.Dahama

Sitre
27/8/2023

Dr. Shashikant Ramrao Sitre
Assistant Professor
Department of Zoology
N.S. Science and Arts College, Bhadrawati
Course Co-ordinator
Certificate Course in Vermiculture

Ladke
27/8/23

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Ladke

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Nilkanthrao Shinde Science and Arts College, Bhadrawati,
Dist.Chandrapur- 442902

CERIFICATE COURSE IN VERMICULTURE

Academic Session : 2023-24

Notice

The Department of Zoology is going to start 3 months Certificate Course in Vermiculture for UG and PG Students of Department of Zoology, Botany and Microbiology of N.S.Science and Arts College, consisting of 100 Marks.

The classes of this course will be held after regular teaching periods are over and will start from the Month of August/September 2023.

Written examination will be conducted after the course completion consisting of 100 marks having 3 hours duration. Certificates will be given to all the successful students after passing the theory examination, based on course content provided in the course period.

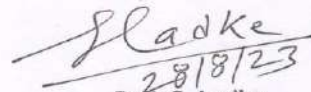
So all those students who are interested to join this course will contact Department of Zoology of the college on all working days from 9 to 4 p.m.

Contact : Dr.Shashikant Sitre – Mobile : 9881723612

Date: 28/8/2023


Dr.Shashikant R.Sitre
Course Co-ordinator
Certificate Course in Vermiculture


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Nilkanthrao Shnde Science and Arts College, Bhadrawati, Districe Chandrapur


Certificate Course in Vermiculture

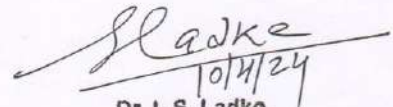
Academic Session : 2023-24

Admitted Students

1. Ku.Neharika Kulmethe	M- 930981355	B.Sc. I
2. Ku.Yashaswi Shrirame	M-8788491787	B.Sc. I
3. Ku.Gayatri Shinde	M- 9096449337	B.Sc I
4. Ku.Dnyeshwari raut	M- 9284783497	B.Sc. I
5. Ku.Anandi Deshmukh	M-7499711323	B.Sc. I
6. Ku. Madhavi Bodhane	M- 9822728060	B.Sc. I
7. Shri Prathmesh Wadhai	M- 8080849322	B.Sc. I


Dr. Shashikant R. Sitre
Co-ordinator
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10/4/24
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Nilkanthrao Shnde Science and Arts College, Bhadrawati, Districe Chandrapur

Certificate Course in Vermiculture

Academic Session : 2023-24

Question Paper

Time : Three Hours)

(Max.Marks : 100

- Note:**
1. All questions are Compulsory.
 2. All questions carry equal marks.
 3. Draw well labelled diagrams wherever necessary.

- | | | |
|------|---|----|
| Q.1 | Write an essay on earthworm Species used in Vermiculture | 10 |
| Q.2 | Elaborate on the Common bedding materials used for vermiculture | 10 |
| Q.3 | Elaborate on Common worm feed stocks | 10 |
| Q.4 | Discuss about important parameters for vermiculture | 10 |
| Q.5 | Elaborate on Pests and Diseases of Compost worms | 10 |
| Q.6 | Write an account on Static Pile Windrows. | |
| Q.7 | Write an account on Beds or Bins used in Vermiculture | 10 |
| Q.8 | Write an account on flow through reactors | 10 |
| Q.9 | Elaborate on Self Harvesting Method of Vermicomposting | 10 |
| Q.10 | Write an account on Value of Vermicompost | 10 |

Sitre
16/3/2024
Dr. Shashikant R. Sitre
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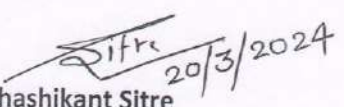
DEPARTMENT OF ZOOLOGY

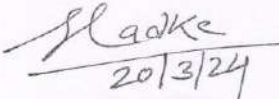
Certificate Course in Vermiculture

Academic Session : 2023-24

MARKSHEET

Sr.No.	Name of Student	Marks Obtained in Figures (100)	Marks Obtained in Words (Out of 100)
1.	Ku.Neharika Kulmethe	73	Seventy Three
2.	Ku.Yashasi Shrirame	78	Seventy Eight
3.	<u>Ku.Gayatri Shinde</u>	94	Ninety Four
4.	Ku.Dnyaneshwari Raut	75	Seventy Five
5.	Ku.Anandi Deshmukh	93	Ninety Three
6.	Ku.Madhavi Bodhane	75	Seventy Five
7.	Shri Prathamesh Wadhai	96	Ninety Six


Dr. Shashikant Sitre
Co-ordinator
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Bhadrawati Shikshan Sanstha, Bhadrawati's

NILKANTHRAO SHINDE SCIENCE & ARTS COLLEGE

Bhadrawati, District Chandrapur - 442902

Accredited "B" grade by NAAC Bangalore (3rd Cycle) (CGPA : 2.58)

Permanently Affiliated to Gondwana University, Gadchiroli

"CERTIFICATE COURSE IN VERMICULTURE"

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

_____ has successfully completed the "Certificate Course" in "Vermiculture"
during the Academic Session _____.

Dr. S. R. Sitre
Course Co-ordinator
N. S. Science & Arts College,
Bhadrawati

Dr. L. S. Ladke
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N. S. Science & Arts College,
Bhadrawati

Dr. L. S. Ladke
Principal
N. S. Science & Arts College,
Bhadrawati

2. Certificate Course in Mushroom Culture

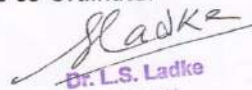
Broucher, Syllabus, Admitted Students and Program

Nilkanthrao Shinde Science and Arts College,
Bhadrawati, Dist.- Chandrapur

Certificate Course in Mushroom Culture Technology

Dr. Praveenkumar N. Nasare

Associate Professor
Course Co-Ordinator



Dr. L.S. Ladke
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NILKANTHRAO SHINDE SCIENCE AND ARTS COLLEGE,
BHADRAWATI DIST. CHANDRAPUR

CERTIFICATE COURSE IN MUSHROOM CULTURE
TECHNOLOGY

SYLLABUS

Certificate course will be of 100 marks, each unit contains 25 marks weightage. Certificate course contains four units which is given below

Unit-I

General characteristics of mushrooms, life history, Reproduction, spore dissemination, Growth, size, colors, color changes and surface textures, odors, taste, exudations, Bio-luminescence

Unit-II

Growing mushrooms, time for growing mushrooms, manure, composting, mushroom house and preparation of the beds, spawning, casing, watering, picking & packing.

Unit-III

Sterilization, methods of sterilization, Autoclave, Refrigerator, Raw material, economic importance of fungi, edible species, poisonous species,

Unit-IV

Economic importance of fungi, edible species, poisonous species, common edible mushrooms, kinds safe for the beginner, Recipes for cooking mushrooms.

Books Recommended for the study

- 1) A guide to the mushrooms by Loui's C.C Krieger published by Asiatic Publisheing House, Delhi(India) ISBN : 81-87067-13-6, Edition: 2007
- 2) The great encyclopedia of mushrooms by Konemann Verlagsge selschaft MBH Bonner str. 126, D-50968 colonge ISBN: 3-8290-17286 10987654321, Edition, 1999
- 3) Botany for Degree students-fungi by B.R. Vashishta and A.K. Sinha. published by S. Chand publication, New Delhi(India) ISBN: 81-219-2826-5, Edition (Reprint) 2008
- 4) The fungi by P.D. Sharma published by Rastogi publications, Meerut (India), 2nd Edition

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Nilkantnrao Shinde Science and Arts College,
Bhadrawati, Dist- Chandrapur.

CERTIFICATE COURSE IN MUSHROOM
CULTURE TECHNOLOGY

Academic Year-2023-2024

- Admitted Students - Date- 01/12/23

1. Ku. Vaishnavi R. Chopkar
2. Ku. Sakshi V. Dhoke
3. Ku. Pragati S. Helwate
4. Ku. Madhavi B. Kadukar
5. Ku. Yamini K. Masapelli
6. Ku. Achal S. Nandurkar
7. Ku. Vaishnavi R. Tandulkar
8. Ku. Chaitali R. Zade
9. Ku. Dhruvashree G. Nagase
10. Ku. Shaloni Anilkumar
11. Ku. Anvita R. Ram.

(Dr. P.H. Nalke)
Coordinator
Mushroom Culture
Technology
N.S. Science & Arts
College, Bhadrawati

(Dr. N.S. Wadhwa)
Head, Department
of Botany
N.S. Science & Arts
College, Bhadrawati

(Dr. L.S. Ladke)
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NILKANTHRAO SHINDE SCIENCE AND ARTS COLLEGE, BHADRAWATI
DIST-CHANDRAPUR (MS)

CERTIFICATE COURSE IN MUSHROOM
CULTURE TECHNOLOGY

Time:- 3hrs

QUESTION PAPER
2023-2024

MaxMarks-100

Que-1:- Choose appropriate answer.

(2 marks each)

- 1) Fungus is derived from the Latin word
 - a) Fungir
 - b) Fungous
 - c) Fungi
 - d) None of the above

- 2) The branch of Botany which deals with the fungi is called as _____
 - a) Phychology
 - b) Psychology
 - c) Mycology
 - d) Toycology

- 3) The scientist who study the fungi is called as _____
 - a) Pscyologist
 - b) Phycologist
 - c) Toycologist
 - d) Mycologist

- 4) The fungi which can not ingest solid food but absorbed it directly through cell membranes they are called as _____
 - a) Saprophytes
 - b) Heterotrpes
 - c) Autotropes
 - d) Endoparasites

- 5) Fungi are mainly chatagerised into _____ groups.
 - a) 3
 - b) 4
 - c) 1
 - d) 2


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- 6) Eumycetes are classified into _____ categories.
a) 1 c) 3
b) 4 d) 2
- 7) Basidiomycetes produce highly complicated fruiting bodies called as _____
a) Basidiocarps c) Aecidia
b) Basidia d) None of the above
- 8) The edible fleshy or gilled fungi are called as _____
a) Mushrooms c) Poisonous fungi
b) Toad stools d) None of the above
- 9) The order agaricales includes more than 4,000 species placed under above _____ genera.
a) 200 c) 197
b) 187 d) 246
- 10) _____ is saprophytes & grows in the open field Grass lands & in soil in cellulose & lignin materials.
a) Agaricus c) Cystopus
b) Polyporous d) None of the above
- 11) The branded product derived from agaricus bispora for food purpose is named as _____
a) Zuccato c) Phuccato
b) Muccato d) Deccato
- 12) The basidiospores produced in agaricus are _____
a) Haploid c) Triploid
b) Diploid d) None of the above
- 13) The mycelium in agaricus with binucleate cell is called as _____
a) Dikaryotic mycelium c) Coenocytic mycelium
b) Monokaryotic mycelium d) None of the above


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- 14) The mushroom research laboratory is located at _____ in Himachal Pradesh.
- a) Solan c) Kullu
b) Dharmshala d) Manali
- 15) At solan the Mushroom are cultivated in chopped _____ and composed.
- a) Paddy straw c) Barley straw
b) Wheat straw d) None of the above
- 16) At solan technique developed for raising _____ Mushrooms.
- a) White button & oyster Mushroom c) Toad stools
b) Buttock Mushroom d) None of the above
- 17) The beds for cultivation of mushroom contains substratum of compost rich in _____ compound.
- a) Nitrogenous c) Ammonium Sulphate
b) Muratry d) None of the above
- 18) The optimum temperature required during the mushroom spawn growth is _____
- a) 35 – 37 C c) 25 – 28 C
b) 42 – 47 C d) 30 – 35 C
- 19) In agaricus as the basidium grows the two nuclei of the dikaryone fused to form the synkaryon is called as _____
- a) Syngamy c) Karyogamy
b) Synzgenesis d) None of the above
- 20) Agaricus xanthodermis is a _____
- a) Edible Mushroom c) Non-Edible Mushroom
b) Palatable Mushroom d) None of the above


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- 21) According to Alexopolous & Mims (1979) agaricus is placed in the class _____
a) Homobasidiomycetidae c) Polobasidiomycetidae
b) Basidiomycetes d) None of the above
- 22) The field Mushroom is Multiply by the formation of _____ and conidia.
a) Zoospores c) Chlamyospores
b) Planespores d) None of the above
- 23) The Mushroom contains _____ percent protein and amino acid.
a) 4-7 percent c) 5-7 percent
b) 3-6 percent d) 7-8 percent
- 24) The nutritional value of oysters (dhingri) is reported to be _____ than
button Mushrooms.
a) Less c) More
b) Equal d) None of the above
- 25) The Mushroom are good for _____
a) T.B patient c) Anemic patient
b) Aids patient d) None of the above

Que- 2:- Write short notes on

(5 Marks each)

- a) Stipe b) Pileus c) Structure of gill
d) Habit & Habitat e) General Characteristics of Mushroom

Que-3:- Write about the economic importance of Mushroom in detail

(25 Marks)


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CERTIFICATE COURSE IN MUSHROOM CULTURE
TECHNOLOGY

Academic year - 2023-2024

RESULT SHEET

Date - 12/3/24

Max. Marks - 100

Sr. No.	Name of Student	Marks obtained	Result
1.	Ku. Vaishnavi R. Chopkar	84	PASS
2.	Ku. Sakshi V. Dhoke	80	PASS
3.	Ku. Pragati S. Hehrate	82	PASS
4.	Ku. Madhavi B. Kadukar	79	PASS
5.	Ku. Yamini Yamini K. Masapelli	83	PASS
6.	Ku. Achal S. Nandurkar	84	PASS
7.	Ku. Vaishnavi R. Tandulkar	83	PASS
8.	Ku. Chaitali R. Zade	79	PASS
9.	Ku. Dhenuksee G. Nagase	78	PASS
10.	Ku. Shaloni Anilkumar	81	PASS
11.	Ku. Anurag R. Ram	83	PASS

(Dr. P. N. Nagesh)

Coordinator
Mushroom Culture Technology
N.S. Science & Arts College
Bhadrawati

Dr. H. S. Madhavi

Head, Department
of Botany
N.S. College
Bhadrawati

Dr. L. S. Ladke
12/3/24

PRINCIPAL
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Bhadrawati, Dist - Chandrapur
N.S. Science & Arts College
Dist - Chandrapur



Bhadravati Shikshan Sanstha, Bhadravati

NILKANTHRAO SHINDE SCIENCE AND ARTS COLLEGE,

Institution of Higher Learning Research and specialized studies

Bhadravati, Dist. - Chandrapur (M. S.) 442902

UGC 2 (f) and 12 (B) status

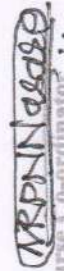
Accredited "B+" grade (Third Cycle - 2016) with CGPA - 2.58 by NAAC Bangalore




CERTIFICATE COURSE IN MUSHROOM CULTURE TECHNOLOGY

CERTIFICATE

This is to certify that Mr./Kū. Madhavi B. Kadukas
_____ has successfully completed certificate course in Mushroom Culture Technology
in the academic Session 2023-2024


Course Co-ordinator
(Dr. P. N. Nasare)


Head, Department of Botany
(Dr. N. S. Wadhave)


Dr. L. S. Ladke
PRINCIPAL
N. S. Science & Arts College (Dr. L. S. Ladke)
Bhadravati, Dist.-Chandrapur

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CERTIFICATE COURSE IN MUSHROOM CULTURE
TECHNOLOGY

REPORT

In the academic year, 2023-2024
Certificate course in Mushroom Culture
Technology was conducted for the B.Sc.
Sem-II students. The course was started
in December-2023 and ended in Mar
-2024. Total 11 (Eleven) students were
participated in the certificate course in
Mushroom Culture Technology. The student
of this course learned about the technique
of Mushroom culture at laboratory level.
They will be definitely benefited in
future.

Place - Bhadrawati

Date - 15/03/2024.

APN Nisare

(Dr. P.N. Nisare)
Course-coordinator
Mushroom culture
Technology
N.S. College, Bhadrawati

Ladke
15/3/24

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