



Guru Vishwambharkrupa Bahuuddeshiya Shikshan Prasarak Mandal Lakkadjawalga's

# **SHIVNERI MAHAVIDYALAYA,**

**Shirur Anantpal, Dist. Latur- 413544**  
**(NAAC Accredited B<sup>-</sup> Grade with 2.54 (CGPA))**

## **DEPARTMENT OF ENVIRONMENTAL SCIENCE**

**B.Sc-III (Sem-V)**

**CERTIFICATE COURSE  
IN  
SOLID WASTE MANAGEMENT**

*[Syllabus (W.e.f. June 2022)]*

## DEPARTMENT OF ENVIRONMENTAL SCIENCE

### Certificate Course in Solid Waste Management

#### B. Sc. (Third Year) Semester-V

(w.e.f. Effective From- June -2022)

<b>Solid Waste Management</b>
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Sem	Name of the Course	Instruction Hrs. / Week	Total Periods	Internal Evaluation	Marks of Semester Exam	Total Marks	Credits
V	Certificate Course in SWM	02	30	10	40	50	02*

## DEPARTMENT OF ENVIRONMENTAL SCIENCE

### Certificate Course in Solid Waste Management

#### B. Sc. (Third Year) Semester-V

(w.e.f. Effective From- June -2022)

#### Solid Waste Management

Marks: 50

Credits: 02

Lectures: 30

**Preamble:** Environmental science is multidisciplinary subject, various areas are there where students can serve for nature and society, the certificate courses can provide the specific and scientific knowledge in environmental science. The course will help to assess prior basic knowledge at U.G. level. The main aim of the certificate course is to orient and train the students in wide range of environmental aspects.

**Course Objectives:** The main objective of course is to improve the awareness and skills of the students with modern techniques of collection, transportations and analysis of solid waste materials for production of organic manure and research activities. Use of instruments and their general maintenance, interpretation of analytical data and formulation of reports/recommendations

#### Course Contents:

##### **Unit I:** (10)

Definition of solid waste, types and sources, classification of solid waste. Solid waste Generation, collection, transportation, disposal methods. Quantification study of solid waste

##### **Unit II:** (10)

Introduction, characteristics of solid wastes, composition study, problems associated with waste management, effect of solid waste pollution on human health: leachate, groundwater contamination, vector borne diseases, odor, nuisance etc.

##### **Unit-III:** (10)

Introduction to solid waste disposal methods; Introduction to vermiculture, definition, meaning, history, the species of earthworms; local species of earthworms, choosing right and useful earthworm, economic important, their value in maintenance of soil status. Role of earthworms in production of organic fertilizers, what are the environmental factors requires

**Learning outcomes:** At the end of the course, student should be –

1. Able to identify and analyze the problems associated with the solid waste.
  2. Able to prepare a study report on material learned.
  3. Able to use the skill to mitigate the issue raised due to solid waste
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**Books recommended:**

1. Verms & Vermitechnology by Arvind Kumar, A. P. H. Pub., New Delhi-110002.
2. Earthworms-Vermiculture & Vermicomposting by R. K. Bhatnagar & R. K. Palta, Kalyani Pub, New Delhi, Kolkata, Hyderabad.
3. A hand book of organic farming by A. K. Sharma, Agrobios (India), Jodhpur
4. A handbook of soil, fertilizer and manure by P. K. Gupta, Agrobios (India), Jodhpur
5. Organic farming in India-problems and practice by U. Thapa and P. Tripathy, Agro Pub. Academy, Udaipur.
6. Organic Farming for sustainable agriculture by A. K. Dahama, Agrobios (India), Jodhpur.
7. Solid Waste Management : Amul Late & Mahadeo Mule (Lambert Academic Publishing, Mauritius, 2020

SHIVNERI MAHAVIDYALAYA, SHIRUR ANANTPAL, DIST. LATUR

DEPARTMENT OF ENVIRONMENTAL SCIENCE

CERTIFICATE COURSE IN SOLID WASTE MANAGEMENT

Academic Year 2022-23

Class: B. Sc. III Year (Sem-V)

List of Enrolled Students

Sr. No.	Name of Student
1.	KORE HIRALAL DASHRATH
2.	NARVATE PANDURANG HANMANT
3.	SONKAMBLE VAIBHAV BHAGAWAT
4.	SURYAWANSHI TUKARAM VAIJANATH
5.	PATHAN SHADUL MAHEBUB
6.	SHEETAL RAJKUMAR
7.	SWAMI AISHWARYA MAHADEV
8.	SONWANE MEGHA BHAUSAHEB

  
DR. P. M. MURKE  
Head of Department, Dept. of Environmental Science,  
Shivneri Mahavidyalaya,  
Shirur Anantpal, Dist. Latur





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**SHIVNERI MAHAVIDYALAYA,**  
Shirur Anantpal, Dist. Latur- 413544



**CERTIFICATE**

This is to certify that, **Mr./Miss KORE HIRALAL DASHRATH** having successfully completed the **Certificate Course in Solid Waste Management** conducted by **Department of Environmental Science** during the academic year **2022-23**.

Hence Certified.

Date: *02.01.2023*

H.O.D.

*[Signature]*  
**DR. P. S. JAYAK**  
Head of Dept. of Env. Science,  
Shivneri Mahavidyalaya,  
Shirur Anantpal, Dist. Latur

*[Signature]*  
**Principal**

**PRINCIPAL**  
Shivneri Mahavidyalaya  
(Arts, Commerce & Science)  
Shirur Anantpal, Dist. Latur (M.S.)

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**SHIVNERI MAHAVIDYALAYA,**  
Shirur Anantpal, Dist. Latur- 413544



**CERTIFICATE**

This is to certify that, **Mr./Miss. NARVATE PANDURANG HANMANT** having successfully completed the **Certificate Course in Solid Waste Management** conducted by **Department of Environmental Science** during the academic year **2022-23**.

Hence Certified.

Date: 02.01.2023

H.O.D.

*[Signature]*  
B. V. MUKKE  
Dept. Of Env. Science,  
Shivneri Mahavidyalaya,  
Shirur Anantpal, Dist. Latur

*[Signature]*  
Principal

PRINCIPAL  
Shivneri Mahavidyalaya  
(Arts, Commerce & Science)  
Shirur Anantpal, Dist. Latur(M.S.)



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# SHIVNERI MAHAVIDYALAYA,

Shirur Anantpal, Dist. Latur- 413544



## CERTIFICATE

This is to certify that, Mr./Miss. **SONKAMBLE VAIBHAV BHAGAWAT** having successfully completed the **Certificate Course in Solid Waste Management** conducted by **Department of Environmental Science** during the academic year **2022-23**.

Hence Certified.

Date: 02.01.2023

H.O.D.

*[Signature]*  
H. O. D.  
Dept. of Env. Science,  
Shivneri Mahavidyalaya,  
Shirur Anantpal, Dist. Latur

*[Signature]*  
Principal

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Shirur Anantpal, Dist. Latur- 413544



**CERTIFICATE**

This is to certify that, Mr./Miss. **SURYAWANSHI TUKARAM VAIJANATH** having successfully completed the **Certificate Course in Solid Waste Management** conducted by **Department of Environmental Science** during the academic year **2022-23**.

Hence Certified.

Date: 02.01.2023

H.O.D.

*[Signature]*  
F.D. V. SHIRUR  
Dept. Of Env. Science,  
Shivneri Mahavidyalaya,  
Anantpal, Dist. Latur

*[Signature]*  
Principal

PRINCIPAL  
Shivneri Mahavidyalaya  
(Arts, Commerce & Science)  
Shirur Anantpal, Dist. Latur (M.S.)

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**SHIVNERI MAHAVIDYALAYA,**  
Shirur Anantpal, Dist. Latur- 413544



**CERTIFICATE**

This is to certify that, **Mr./Miss. PATHAN SHADUL MAHEBUB** having successfully completed the **Certificate Course in Solid Waste Management** conducted by **Department of Environmental Science** during the academic year **2022-23**.

Hence Certified.

Date: 02.01.2023

H.O.D.

  
DR. V. R. MURKE  
Dept. Of Env Science,  
Shivneri Mahavidyalaya,  
Shirur Anantpal, Dist. Latur



Principal  
PRINCIPAL  
Shivneri Mahavidyalaya  
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**SHIVNERI MAHAVIDYALAYA,**  
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**CERTIFICATE**

This is to certify that, Mr./Miss. SHEETAL RAJKUMAR having successfully completed the Certificate Course in Solid Waste Management conducted by Department of Environmental Science during the academic year 2022-23.

Hence Certified.

Date: 02.07.2023

H.O.D.

*[Signature]*

DR. V. C. MOHITE  
H. O. OF Env. Science,  
Shivneri Mahavidyalaya,  
Shirur Anantpal, Dist. Latur

*[Signature]*  
Principal

PRINCIPAL  
Shivneri Mahavidyalaya  
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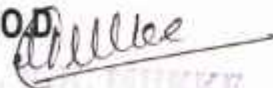
## CERTIFICATE

This is to certify that, Mr./Miss. **SWAMI AISHWARYA MAHADEV** having successfully completed the **Certificate Course in Solid Waste Management** conducted by **Department of Environmental Science** during the academic year **2022-23**.

Hence Certified.

Date: 02-01-2023

H.O.D.

  
DR. P. M. MUNKKE  
H.O.D., Dept. of Env. Science,  
Shivneri Mahavidyalaya,  
Shirur Anantpal, Dist. Latur

  
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**SHIVNERI MAHAVIDYALAYA,**  
Shirur Anantpal, Dist. Latur- 413544



**CERTIFICATE**

This is to certify that, Mr./Miss **SONWANE MEGHA BHAUSAHEB** having successfully completed the **Certificate Course in Solid Waste Management** conducted by **Department of Environmental Science** during the academic year **2022-23**.

Hence Certified.

Date: 02-01-2023

H.O.D.

*[Signature]*  
DR. V. S. MUKHE  
Head of the Science,  
Shivneri Mahavidyalaya,  
Anantpal, Dist. Latur

*[Signature]*  
Principal

PRINCIPAL  
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