



Rayat Shikshan Sanstha's

**Shri Sadguru Gangageer Maharaj Science, Gautam Arts and Sanjivani
Commerce College, Kopargaon, Dist. Ahmednagar 423601
(Maharashtra)**

CERTIFICATE COURSE IN VERMICOMPOSTING

Academic Year 2021-22

Duration:-3 Months

Credit:-2

Coordinator: - Mr. Vilas R. Jiwatode

Faculty Members

- 1) Miss. J. M. Petare
- 2) Miss. A. B. Gore
- 3) Miss. K.S.Ruptake
- 4) Miss. A.B. Prasad

Aim of Course:-

- 1) Students are expected to understand the principle of Vermicomposting.
- 2) They are expected to understand morphology, physiology and composting mechanism of the animal.
- 3) The practicals are implemented to understand the concepts and it would help in the development of practical skills of the students.

4) It is expected to inspire and boost the interest of students towards the subject, which will be helpful to avoid the use of chemical fertilizers and more and more application of organic fertilizers.

5) It will enable to develop interdisciplinary approach of the subject.

Skills and opportunities:-

Faculty of Zoology, Vermicomposting course is a professional course targeted to train the students to start their own Vermicomposting Unit, as there is a demand for vermicompost and organic farming. The information, guidance, practical training and completion certificate will provide to the participants with not one but many opportunities in the Vermicomposting Industry. This would come true in form of job roles and positions like that of Vermicompost Producer Farmers.



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CERTIFICATE COURSE IN VERMICOMPOSTING

Academic Year 2021-22

Syllabus of Certificate course in Vermicomposting

2 credits

Section : I- Theory

15

- 1) Introduction
- 2) Vermicompost
- 3) Earthworm :
 - a) Habit and habitat
 - b) Different species of Earthworm, Indigenous and Exotic species
 - c) Life cycle of Earthworm
 - d) Digestive system
 - e) Reproductive system
- 4) Role of Earthworm in Vermicomposting
- 5) Uses of Earthworm
- 6) Methods of Vermicomposting
 - a) Surface Bed method (farm)
 - b) Vermicomposting at home
 - c) Vermicomposting in plastic tub or wooden box
- 7) Methods for Preparation of Vermiwash
 - a) Cot method
 - b) Barrel Method
- 8) Enemies of Earthworm



9) Importance & Composition of Vermicompost

Section : II Practical

10

- 1) Preparation of bed- selection of site, collection of cow dung, soil, garbage and making water available. Mixing all the above material and making into hump.
- 2) Release of Earthworm into the bed
- 3) Regular watering of bed so as to keep proper humidity
- 4) Regular addition of garbage and dry leaves into the bed.

Section : III Field work

05

- 1) Harvesting of cocoon and Earthworms
- 2) Separation of Vermicompost from the bed

References

- 1) Gupta, R., Mutiyar, P.K, Rawat, N.K., Saini, M.S., and Garg, V.K. 2007. **Development of a water hyacinth based vermireactor using an epigeic earthworm *Eisenia foetida*. *Bioresource Technology* 98(13):2605-10.**
- 2) Parthasarathi, K., Ranganathan, L.S., Anandi, V., and Zeyer, J. 2007. **Diversity of microflora in the gut and casts of tropical composting earthworms reared on different substrates. *Journal of Environmental Biology* 28(1):87-97.**
- 3) Pramanik, P., Ghosh, G.K., Ghosal, P.K., and Banik, P. 2007. **Changes in organic – C, N, P and K and enzyme activities in vermicompost of biodegradable organic wastes under liming and microbial inoculants. *Bioresource technology* 98(13):2485-94.**
- 4) Roberts, P., Edwards-Jones, G., and Jones, D.L. 2007. **Yield responses of wheat (*Triticum aestivum*) to vermicompost applications. *Compost Science & Utilization* 15(1):6-15.**



Rayat Shikshan Santha's
Shri Sadguru Gangageer Maharaj Science , Gautam Arts & Sanjivani Commerce College,
Kopargaon – 423601,
Dist.- Ahmednagar, M. S. – India

**Internal Quality Assurance Cell
(IQAC)**

Syllabus Approval Letter

The IQAC committee has approved the submitted syllabus of short term/Certificate course planned to be conducted by the Department of Zoology.

Sr.No.	Name of Course	Type of Course
01	Vermiculture	Short term course/Certificate course

HOD of Zoology Department may proceed accordingly.

Date: 16/09/2021

Place: Kopargaon


IQAC Coordinator
S.S.G.M.College,Kopargaon

S.R.T.
Principal
S.S.G.M. College
Kopargaon,Dist.A/Nagar



CERTIFICATE COURSE IN VERMICOMPOSTING

2021-22

Co - ordinate by:	Department of Zoology
Class:	T.Y. B.Sc. (Zoology)
No. of students Admitted:	09
Duration of the course:	3 Months
Fee of Course:	200/-
Lecture and Practical started:	December, January and February
Tentative Date of Examination:	2 nd Week of March
Tentative Date of Result:	3 rd Week of March
Syllabus:	2 Credits

Co-ordinator

Mr. V. R. Jiwatode



Rayat Shikshan Sanstha's
**Shri Sadguru Gangageer Maharaj Science, Gautam Arts and Sanjivani
Commerce College, Kopargaon, Dist. Ahmednagar 423601
(Maharashtra)**

Department of Zoology
Short Term Course: 2021-22
A CERTIFICATE COURSE IN VERMICULTURE

Date: 30 /11 /2021

Notice

All students of Science faculty are hereby informed that Department of Zoology is going to commence the short term course A Certificate Course in Vermiculture in academic year 2020-21. All the students of T.Y.B.Sc. Zoology and interested students from college are requested to registers their names in the Department of Zoology for same course.

Information regarding course:

Name: Vermiculture assistant.

Qualification: XIIth Science pass.

Duration: 3 months.

Job profile: The trained person will be able to work in Vermiculture farm independently.

Co-ordinator

Head

Department of Zoology

Head

**Department of Zoology
S.S.G.M.College,Kopargac**



RAYAT SHIKSHAN SANSTHA'S
S.S.G.M.COLLEGE, KOPARGAON
DIST. - AHMEDNAGAR, 423601 (M.S.)



SHORT TERM COURSE
"A CERTIFICATE COURSE IN VERMICOMPOSTING"
Academic Year 2021-22

ADMISSION FORM

NAME	Dongare Ruchita suresh
CLASS	T.Y.B.Sc
ADDRESS	Annapurna nagar near, kopargaon
CONTACT NUMBER	8423 113093
E-MAIL ID	ruchita.dongare 17382 @ gmail . com

To,
The Head
S.S.G.M. College, Kopargaon,
Dist- Ahmednagar.

Subject: Request to an admission in "A Certificate Course in Vermicomposting",

Respected Sir,

I have been admitted in T.Y. B.Sc. Zoology class in your college, during the academic year 2021-2022. I wish to complete above short term course run by our college. Kindly give me permission by granting my admission.

Yours faithfully,

Sign:

Name: Dongare Ruchita suresh

Recommendation:

Co-ordinator

Head

Department of Zoology

Department of Zoology
S.S.G.M.College,Kopargaon



RAYAT SHIKSHAN SANSTHA'S
S.S.G.M.COLLEGE, KOPARGAON
DIST. - AHMEDNAGAR, 423601 (M.S.)

SHORT TERM COURSE
"A CERTIFICATE COURSE IN VERMICOMPOSTING"
Academic Year 2021-22



ADMISSION FORM

NAME	Shinde samiksha vitthal.
CLASS	T.Y Bsc .
ADDRESS	Murshatpur, kopargaon
CONTACT NUMBER	7020154595
E-MAIL ID	shindesamiksha201900@gmail.com.

To,
The Head
S.S.G.M. College, Kopargaon.
Dist- Ahmednagar.

Subject: Request to an admission in "A Certificate Course in Vermicomposting",

Respected Sir,

I have been admitted in T.Y. B.Sc. Zoology class in your college, during the academic year 2021-2022. I wish to complete above short term course run by our college. Kindly give me permission by granting my admission.

Yours faithfully,

Sign:

Name: samiksha vitthal shinde

Recommendation:

Co-ordinator


Head
Department of Zoology
S.S.G.M. College, Kopargaon



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**Shri Sadguru Gangageer Maharaj Science, Gautam Arts and Sanjivani Commerce
College, Kopergaon, Dist. Ahmednagar 423601 (Maharashtra)**

Short Term Course: 2021-22
A CERTIFICATE COURSE IN VERMICULTURE

List of Students

Sr. No.	Roll No.	Name of the Student
1		Asane Bhavana Vijay
2		Bagul Bhagyashri Dilip
3		Dongare Ruchita Suresh
4		Faratle Mayuri Karbhari
5		Khan Mohammedsad Nawab
6		Kole Naresh Raghunath
7		Malode Shradha Trimbak
8		Shinde Samiksha Vitthal
9		Jadhav Dhanashri



Head
Department Of Zoology
S.S.G.M. College, Kopergaon



Rayat Shikshan Sanstha's
**Shri Sadguru Gangageer Maharaj Science, Gautam Arts and Sanjivani
Commerce College, Kopargaon, Dist. Ahmednagar 423601
(Maharashtra)**

Department of Zoology
Short Term Course: 2021-22
A CERTIFICATE COURSE IN VERMICULTURE

Date: 04 /12 /2021

Meeting Notice

All the faculty members of Department of Zoology are hereby informed that Department of Zoology is going to conduct a short term course "A Certificate Course in Vermiculture" in academic year 2021-22. The syllabus and working hours have been discussed and a complete programme has been prepared. Following members are requested to attend the meeting for the implementation of this academic year 2021-22. The meeting will be held in Department of Zoology at 12:30 pm on 06/12/2021.

Co-ordinator

**Head
Department of Zoology**

**Department of Zoology
S.S.G.M College, Kopargaon**

Committee Members

- 1) Miss. J. M. Petare
- 2) Miss. A. B. Gore
- 3) Miss. K.S.Ruptake
- 4) Miss. A.B. Prasad



Rayat Shikshan Sanstha's
**Shri Sadguru Gangageer Maharaj Science, Gautam Arts and Sanjivani
Commerce College, Kopargaon, Dist. Ahmednagar 423601
(Maharashtra)**

Department of Zoology
Short Term Course: 2021-22
A CERTIFICATE COURSE IN VERMICULTURE

Date: 6 /12/2021

Minutes of Meeting

The meeting of the Short Term Course Committee was conducted on 06/12/2021 at Department of Zoology. In meeting the following resolutions and decisions were made:

- 1) It was decided to revise the syllabus of a certificate course in Vermiculture.
- 2) For conducting the course the complete program of Theory and Practicals was designed.
- 3) 2 credits (30lectures) syllabus of vermiculture course has designed.
- 3) As per the requirements of completion of the syllabus of short term course the working hours were decided.


Co-ordinator


Head
Department of Zoology
Head
Department of Zoology
S.S.G.M.College,Kopargaon



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**Shri Sadguru Gangageer Maharaj Science, Gautam Arts and Sanjivani
Commerce College, Kopergaon, Dist. Ahmednagar 423601
(Maharashtra)**

Department of Zoology
Short Term Course: 2021-22
A CERTIFICATE COURSE IN VERMICULTURE

Date: 06/12/2021

Notice

All students of T.Y. B.Sc. Zoology who have enrolled for short term course "A Certificate Course in Vermiculture" in academic year 2021-22, are hereby informed that their lectures will start from 18/12/2021 on 10:00 am. at Department of Zoology. The attendance to the lectures is compulsory.


Co-ordinator


Head
Department of Zoology
Department of Zoology
S.S.G.M.College,Kopergaon



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Department of Zoology
Short Term Course: 2021-22
A CERTIFICATE COURSE IN VERMICULTURE

Time table

Date	Time	Theory/Practical	Hall No.	Teacher
18/12/2021	10:00 -11:00	Theory	B-206	J.M. Petare
20/12/2021	10:00 -11:00	Theory	B-206	A.B. Gore
21/12/2021	10:00 -11:00	Theory	B-206	V.R. Jiwatode
22/12/2021	10:00 -11:00	Theory	B-206	A.B. Gore
23/12/2021	10:00 -11:00	Theory	B-206	J.M. Petare
24/12/2021	10:00 -11:00	Theory	B-206	A.B. Gore
25/12/2021	10:00 -11:00	Theory	B-206	J.M. Petare
27/12/2021	10:00 -11:00	Theory	B-206	J.M. Petare
28/12/2021	10:00 -11:00	Theory	B-206	A.B. Gore
29/12/2021	10:00 -11:00	Theory	B-206	A.B. Gore
30/12/2021	10:00 -11:00	Theory	B-206	V.R. Jiwatode
31/12/2021	10:00 -11:00	Theory	B-206	A.B. Gore
03/01/2022	10:00 -11:00	Theory	B-206	J.M. Petare
04/01/2022	10:00 -11:00	Practical	Vermi.plant	V.R. Jiwatode
05/01/2022	10:00 -11:00	Practical	Vermi.plant	V.R. Jiwatode
06/01/2022	10:00 -11:00	Practical	Vermi.plant	V.R. Jiwatode
07/01/2022	10:00 -11:00	Practical	Vermi.plant	V.R. Jiwatode
08/01/2022	10:00 -11:00	Practical	Vermi.plant	V.R. Jiwatode



[Signature]
Head

Department Of Zoology
S.S.G.M. College, Kopargaon

Rayat Shikshan Sanstha's
S.S.G.M.COLLEGE KOPARGAON
 Department of Zoology
 T. Y. B. Sc. Attendance 2021-22

Name of Teacher:- V.R. Jiwatode, A.B. Gore, J.M. Petare.
 Name of Paper :- short term course in Vermicomposting.

Sr. No.	Name of Students	18/12/2021	20/12/2021	21/12/2021	22/12/2021	23/12/2021	24/12/2021	17/1/22	18/1/22		
1	Asane Bhavana Vijay								<u>Pasre</u>		
2	Bagul Bhagyashri Dilip										
3	Dongare Ruchita Suresh	<u>Ruchita</u>	<u>Ruchita</u>	<u>Ruchita</u>	<u>Ruchita</u>	<u>Ruchita</u>	<u>Ruchita</u>	<u>Ruchita</u>	<u>Ruchita</u>		
4	Faratle Mayuri Karbhari	<u>M.K. Faratle</u>	<u>M.K. Faratle</u>	<u>M.K. Faratle</u>	<u>M.K. Faratle</u>	<u>M.K. Faratle</u>	<u>M.K. Faratle</u>	<u>M.K. Faratle</u>			
5	Khan MohAmmedsad Nawab										
6	Khole Naresh Raghunath	<u>Naresh</u>	<u>Naresh</u>	<u>Naresh</u>	<u>Naresh</u>		<u>Naresh</u>				
7	Malodhe Shradha Trimbak										
8	Shinde Samiksha Vitthal	<u>Shinde</u>	<u>Shinde</u>		<u>Shinde</u>	<u>Shinde</u>	<u>Shinde</u>	<u>Shinde</u>	<u>Shinde</u>		
	Jadhav Dhanashri Manoj	<u>Jadhav</u>	<u>Jadhav</u>	<u>Jadhav</u>							



J.M. Petare
 Head
 Department of Zoology
 S.S.G.M. College, Kopargaoon

30

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Shri Sadguru Gangageer Maharaj Science, Gautam Arts and Sanjivani Commerce
College, Kopargaon, Dist. Ahmednagar 423601 (Maharashtra)
Department of Zoology
2021-22

Name of student: *Bhavana Vijay Asane*
Total marks: 30

Date:
Time : 30min

Certificate course in Vermiculture
MCQ TYPE EXAM

Instruction:

1) Each question carries equal marks

Q.1) Multiple choice questions

- 1) Which of the following is a commonly used earthworm species for the vermicomposition process?
a) Eisenia fetida
b) Perionix excavatus
c) Both (a) and (b)
d) None of above
- 2) Vermicompost is used as a biofertilizer because it is rich in
a) Calcium
b) Nitrogen
c) Phosphorus
d) All of the above
- 3) Which of the following chemicals is used for protecting vermi-bed from ants?
a) DDT
b) Griseotulvin
c) Chloramphenicol
d) Chlorpyriophosphate
- 4) The highly composed organic matter rich in minerals like nitrogen , phosphorus and potassium in particular produced from the activity of earthworm is called
a) Humus
b) Vermicompost
c) Worm casting
d) Compost bedding
- 5) The moistur level required for vermicompositing should be between
a) Below 30%
b) 40% to 50%
c) 70% to 80%
d) Above 90%
- 6) Which of the following is not raw material required fot preparing compost ?
a) Cow dung
b) Weed biomass
c) Dry straw & leaves
d) All of the above
- 7) Which of the following products cannot be used for vermicompositing ?

- a) Cow dung
 - b) Plant material
 - c) Animal waste
 - d) All of the above
- 8) Which of the following used for vermicomposting
- a) Algae
 - b) Nitrating bacteria
 - c) Earthworm
 - d) Fungus
- 9) Vermicompost is a / an
- a) Toxic material
 - b) Organic biofertilizer
 - c) Inorganic fertilizer
 - d) Synthetic fertilizer
- 10) Which of the following nutrients is abundantly found in worm casting ?
- a) Phosphorus
 - b) Nitrogen
 - c) Calcium & other minerals
 - d) All of these
- 11) Which type of earthworms are majorly required for Vermicomposting?
- a) Anecic
 - b) Epigeic
 - c) Endogenic
 - d) All of the above
- 12) The maximum temperature to be maintained for Vermicomposting is
- a) 20 °C
 - b) 25 °C
 - c) 30 °C
 - d) 35 °C
- 13) Vermicompost is in colour
- a) Red
 - b) Black
 - c) White
 - d) Brown
- 14) What's best worms for composting?
- a) Red wigglers
 - b) Maggots
 - c) Pink worms
 - d) All of the above
- 15) What is Vermicomposting?
- a) Composting using rats
 - b) Composting using birds
 - c) Composting using worms
 - d) A name for landfill

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Short Term Course: 2021-22

RESULT OF CERTIFICATE COURSE IN VERMICULTURE

Sr. No.	Name of the Student	Marks out of 30	Result
1	Asane Bhavana Vijay	30	Pass
2	Bagul Bhagyashri Dilip	26	Pass
3	Dongare Ruchita Suresh	30	Pass
4	Faratle Mayuri Karbhari	18	Pass
5	Khan Mohammedsad Nawab	Ab—	—
6	Kole Naresh Raghunath	20	Pass
7	Malode Shradha Trimbak	—	—
8	Shinde Samiksha Vitthal	20	Pass
9	Jadhav Dhanashri	20	Pass




Head
Department Of Zoology
S.S.G.M. College, Kopergaon



“Education Through Self - Help is our Motto” (Karmaveer

Rayat Shikshan Sanstha's

Shri Sadguru Gangageer Maharaj Science, Gautam Arts & Sanjivani Commerce College



Kopargaon, Dist. Ahmednagar (M.S.)

Short Term Course

CERTIFICATE OF COMPLETION

This is to Certify that Shri/Kum. _____

of Class _____ has Completed Short Term Course in _____

_____ conducted by the department of _____

during the academic year 201 /201

Course Co-ordinator

Co-ordinator

Principal



Rayat Shikshan Sanstha's,
S.S.G.M. College, Kopergaon

Department of Zoology
Short Term Course: 2021-22

CERTIFICATE COURSE IN VERMICULTURE

DEPARTMENT OF ZOOLOGY



Eudrilus eugeniae Species of earthworm



Collection of Humus for vermicomposting



Bed Preparation for Vermicomposting



Students and staff at vermicompost unit