

**PERIYAR UNIVERSITY**  
(NAAC 'A' Grade- State University- NIRF Rank 68)  
**DEPARTMENT OF ZOOLOGY**  
SALEM – 636 011, TN, INDIA

**FEBRUARY  
2020**

**Value Added course: PCR TECHNOLOGY (19ZOOV02)**

**Course Mentor: Prof. S. KANNAN**

The Department of Zoology is offering a open course, for all the science students who want to acquire knowledge about the PCR Technology as the PCR technique is an ever green in biological and biomedical discipline with good opportunity to have better position in World class research cub clinical laboratories. This course provides fundamental ideas related to the Principles, types, and applications of PCR, especially the RT-PCR is the need of the hour to identify various disease caused by the microbial pathogens like bacteria, viruses and also useful to understand the mechanism of genetic disorders. On successful completion of this course, the student will be able to understand the needs of Polymerase Chain Reaction, working principles, preparation and processing of samples and handling of PCR machine. As this Course has potential applications in all kinds of Biomedical, Biotechnological, Clinical and Pharmaceutical industries, the entrepreneurship to promote Biomedical Research, Diagnosis of various infectious and non-infectious diseases. Successful students will be a technician in clinical laboratories of high-end hospitals and research institutes.

**Course outcome:**

**CO1 :** Understand the basic principle of PCR reaction and Types and uses of PCR Machine.

**CO2 :** Diagnose various diseases causing culprits at gene level

**CO3 :** Understand various applications of PCR techniques in industries & Clinical Laboratories

**CO4 :** Become an entrepreneur by developing PCR kit.

**FOR SYLLABUS:**

Please visit the website of Periyar University, Department of Zoology, M.Sc Zoology Syllabus Downloads (COURSE DURATION: 36 Hours)

**For Further Details: Prof. S. KANNAN, Head, Department of Zoology,  
Science Block III, 3<sup>rd</sup> Floor, Periyar University,  
Salem-636 011, TN, INDIA**

**Mobile: +91 95851 32032 e.mail: sk\_protein@periyaruniversity.ac.in**



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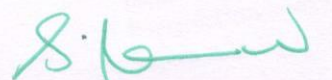
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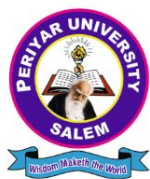
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Science Block III, 3<sup>rd</sup> Floor, Periyar University,  
Salem-636 011  
Mobile: +91 9585132032;  
e.mail: sk\_protein@periyaruniversity.ac.in

  
**Prof. S. KANNAN, Ph. D.,**  
**PROFESSOR AND HEAD**  
Department of Zoology  
Periyar University



# PERIYAR UNIVERSITY

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SALEM – 636 011

## DEPARTMENT OF ZOOLOGY

FEBRUARY  
2020

### Value Added course: Vermiculture (19ZOOV01)

Course Mentor: Dr. R. Thangaraj

#### **Introduction:**

This course is offered by the Department of Zoology as an open course, for all the science students who want to acquire knowledge about the culture of earthworms and their applications in organic solid waste management. This course provides fundamental ideas related to the cultivation of earthworms, especially in order to use them to convert organic waste into manure. On successful completion of this course, the student will be able to understand the core concepts of vermiculture and vermicomposting and then involved in the entrepreneurship to promote agriculture. Successful students will apply vermiculture in vermicomposting, soil fertility, and bioremediation processes and become an entrepreneur.

#### **Course outcome:**

**CO1 :** Understand the concepts of vermiculture and vermicomposting.

**CO2 :** Identify earthworm species used in organic and industrial solid waste management.

**CO3 :** Understand various applications of earthworms in organic solid waste management, soil fertility, and bioremediation.

**CO4 :** Become an entrepreneur by culturing earthworms.

#### **SYLLABUS:**

UNIT-I: Vermiculture – definition, scope and importance – Earthworm morphology and anatomy – Biology of *Perionyx excavatus* & *Eisenia fetida* – Ecological Classification of Earthworms.

UNIT-II: Common earthworm species used for culture – Environmental requirements – Culture methods – indoor and outdoor cultures – monoculture and polyculture.

UNIT-III: Vermicomposting materials and methods – Small scale and large Scale Vermicomposting. Factors affecting vermicomposting. Maintenance of Vermicomposting beds.

UNIT-IV: Applications of vermiculture – use of vermicastings in organic farming/horticulture, earthworms for management of municipal organic solid wastes. Nutrient value of worm cast/vermicompost – Effect of vermicompost on plants.

UNIT-V: Advantages of Vermitechnology – Marketing the products of vermiculture – creating the demand by awareness and demonstration, advertisements, packaging and transport, direct marketing – Potentials and constraints for vermiculture in India.

**COURSE DURATION: 36 Hours**



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