

**DEPARTMENT OF ZOOLOGY  
SIKSHA BHAVANA (INSTITUTE OF SCIENCE)  
VISVA-BHARATI (A CENTRAL UNIVERSITY)  
SANTINIKETAN – 731235  
WEST BENGAL, INDIA**

## **Internship in ZOOLOGY (2025-2026)**

### **Programme details & Step-by-step procedure for enrolment:**

- ✓ **Details of the Internship Topics are given below (page-2 onwards).**
- ✓ **Fill in the Google Form and submit within 28<sup>th</sup> May, 2025.**

<https://forms.gle/TVbTfePrhoMjTn5H8>

- ✓ **Shortlisted candidates will be notified with payment link by email to make payment within 10<sup>th</sup> June, 2025.**

### **Contact details of Co-ordinators:**

- **Dr. Rakesh Kundu**  
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- **Dr. Debarshi Sarkar**  
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**INTERNSHIP PROGRAMME IP-1**  
**DEPARTMENT OF ZOOLOGY**  
**SIKSHA BHAVANA (INSTITUTE OF SCIENCE)**  
**VISVA-BHARATI**

1. Title of the UG Internship programme:

**Basic Laboratory Skills in Electrophoretic & Blotting Techniques**

2. Nature of Internship programme:

Research-based for developing research aptitude

3. Description of the Internship programme:

This programme will give first-hand experience to the students in learning the technique of electrophoresis, both agarose gel and polyacrylamide gel electrophoresis, and Western blotting. While preparing samples, the interns will acquire skills to operate several commonly used research laboratory equipment viz. balance, pH meters, centrifuges, spectrophotometer etc. and learn to weigh chemicals, prepare reagents and buffers, and process samples. The programme aims to help interns gain theoretical knowledge as well as practical know-how of electrophoretic and blotting techniques.

**The course covers:**

**12 days virtual learning (theoretical knowledge, principles and applications in detail)**  
**(4 hrs/day; 48 hrs)**

- **Agarose gel & Polyacrylamide gel electrophoresis (6 days)**
- **Blotting techniques (6 days)**

**12 days Offline hands-on training (6 hrs/day; 72 hrs)**

- **Agarose gel electrophoresis (3 days)**
- **Polyacrylamide gel electrophoresis & Western blotting (9 days)**

**TOTAL DURATION: 24 days; 120 hrs**

4. Objective (Bulleted form):

- The internship programme will provide hands-on training for learning basic research laboratory skills in Electrophoresis and Western Blotting.
- The students will also get an idea how to prepare reagents, samples, and about work-bench cleaning and maintaining laboratory record keeping.
- By the end of the programme, the interns will have gained hands-on experience of preparing reagents, sampling, performing assays, estimations, and usage of common laboratory equipment.
- Upon successful completion of the programme, the interns will have acquired basic skills and know-how about these important molecular biology techniques. This programme will help to develop research aptitude in the interns and inculcate passion for pursuing career in research.

5. Duration: **24 Days /120 hours**

6. Mode of Internship programme (Offline/Virtual/Blended): **Blended mode**

7. Minimum eligibility criteria: Studying Four-Year Undergraduate Program FYUP (NEP2020) in Life Sciences and allied subjects/related disciplines

8. Date of start and closure of Internship programme: From 16/06/2025 – 12/07/2025

From 16/06/2025 to 21/06/2025 --- Agarose and Polyacrylamide Gel Electrophoresis  
Theory and applications (4 hrs/day) Virtual mode

From 23/06/2025 to 28/06/2025 --- Blotting techniques  
Theory and applications (4 hrs/day) Virtual mode

From 01/07/2025 to 03/07/2025 --- 3 days Agarose gel electrophoresis (6 hrs/day)  
Offline Hands-on training

From 04/07/2025 to 12/07/2025 --- 9 days PAGE and Western Blotting (6 hrs/day)  
Offline Hands-on training

9. Total intake of Interns/slot: Maximum 10 interns
10. Selection process (if any): Short listing of internship applications will be done on the basis of academic performance in semesters.
11. Place of internship:  
Department of Zoology  
Siksha Bhavana (Institute of Science)  
Visva-Bharati (A Central University)  
Santiniketan – 731 235, West Bengal, India
12. Logistics (minimum) to be provided, if any: -
13. Fee to be paid: Rs. 4000/- each  
(This amount is being charged from the interns considering the cost of reagents, consumable items, chemicals required for executing the hands-on training programme.)
14. Contact details of Co-ordinators:  
  
A. Dr. Rakesh Kundu; Assistant Professor; Department of Zoology; Visva-Bharati, Santiniketan;  
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B. Dr. Debarshi Sarkar; Assistant Professor; Department of Zoology; Visva-Bharati, Santiniketan;  
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**Contact details of Internship Supervisor:**

Dr. Sutapa Mukherjee  
Endocrinology & Metabolism Laboratory  
Department of Zoology  
Siksha Bhavana (Institute of Science)  
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**INTERNSHIP PROGRAMME IP-2**  
**DEPARTMENT OF ZOOLOGY**  
**SIKSHA BHAVANA (INSTITUTE OF SCIENCE)**  
**VISVA-BHARATI**

1. Title of the UG internship programme: **Bioinformatics: Tools and software for analysis Genomic and proteomic data**

2. Nature of Internship Programme: Research-based for developing research aptitude

3. Description of the internship programme:(Total duration: 120 hrs)

The practical based bioinformatic programme allows the student to understand the genomic data acquisitions, analyse and interpret biological data, offering insights into various bioinformatics tools and software's. This course covers topics like sequence analysis, genome analysis, and protein structure prediction.

1. Exploring database like NCBI, EBI and DDBJ and understanding the NCBI different tools and topics. 16 Hrs
2. Biological sequence data retrieval (protein and gene) from NCBI; Understanding FASTA format. 8 Hrs
3. Predicting potential protein coding regions from a sequence by ORF finder. 8 Hrs
4. Translation of a nucleotide (DNA/RNA) sequence to a protein sequence and Search for Conserved Domains within a protein or coding nucleotide sequence. 16 Hrs
5. Sequence alignment: Pairwise sequence alignment and multiple sequence alignment; Exploring BLAST (Basic Local Alignment Search Tool); Constraint-based Multiple Alignment Tool; CLUSTAL. 14 Hrs
6. Protein structure prediction and analysis: Primary sequence analyses (Protparam) Secondary structure prediction (GOR, nnPredict, SOPMA); Tertiary structure prediction (SWISSMODEL) . 14 Hrs
7. *In silico* protein modelling (alphafold2/ Rosetta fold) 8 Hrs
8. Protein structure evaluation-Ramachandran map (PROCHECK).12 Hrs
9. Gene structure prediction and analysis using GENSCAN AND GLIMMER. 12 Hrs
10. Primer designing for PCR amplification. *In silico* PCR for quality check of primers. 12 Hrs

4. Objective:

- Provide an opportunity for students to acquire practical skills and experience in bioinformatics.
- Interns will learn how to use bioinformatics tools and software to interpret complex biological data, and develop the skills necessary to design and implement their own computational pipelines.
- By the end of the program, interns will have gained hands-on experience with bioinformatics data analysis and will be well-prepared to pursue a career in bioinformatics or related field

5. Duration: Days: **20 days. /Hours:120 hrs (6 hrs/day)**

6. Mode of Internship Programme (Offline/Virtual/Blended):**Virtual**

7. Date of start and closure of Internship Programme: 18/06/2025 to 10/7/2025 (20 working days; Sunday and public holidays excluded)
8. Total intake of Interns/slot:10
9. Selection process (If any):Admitted in Graduation programme as per NEP 2020
10. Place of internship: Online mode
11. Logistics (minimum) to be provided, if any: No, Students should have laptop/desktop with good internet connectivity.
12. Fee to be paid: Rs. 1000/-
13. Contact details of Co-ordinator:
  - Dr. Rakesh Kundu; Assistant Professor; Department of Zoology; Visva-Bharati, Santiniketan; Email: [rakesh.kundu@visva-bharati.ac.in](mailto:rakesh.kundu@visva-bharati.ac.in)
  - Dr. Debarshi Sarkar; Assistant Professor; Department of Zoology; Visva-Bharati, Santiniketan; Email: [debarshi.sarkar@visva-bharati.ac.in](mailto:debarshi.sarkar@visva-bharati.ac.in)

**Contact details of Internship Supervisor:**

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