



# Internship Offering Program

**School of Sciences & Technology**  
The Neotia University

# Summer Internship Program 2025-26

**Internship Duration: 4 weeks (1st June - 30th June, 2025)**

The **School of Science and Technology (SST)**, The Neotia University, Kolkata offers summer internship programs on multiple fields; **Basic Sciences, Biotechnology, Computer Science Engineering, and Robotics and Automation Engineering** to solve complex business problems, drive innovation, and create holistic approaches to knowledge and practice using the upcoming technologies.



## Internship Highlights:

- The opportunity to gain hands-on on multi-disciplinary domains.
- The interactive grooming sessions in as association with the talent acquisition team from industry to develop work habits and attitudes necessary for job success.
- Receive a certificate of completion to enhance your resume.

**Eligibility for the offering from Biotechnology / Basic Science:** B.Sc. / M.Sc. in Biotechnology / Basic Science / Agriculture / Healthcare / Bioscience / B.Tech in Biotechnology

**Eligibility for the offering from CSE and Robotics & Automation:** B.Tech / BCA / MCA

## Register Immediately

Registration Link: <https://shorturl.at/pUZBV>

Fees for Internship: **Rs. 1000 for TNU, Rs. 1500 for others**

Payment through  
QR scan:



Last Date to Apply:  
**15<sup>th</sup> May, 2025**

## Program Coordinator

**Dr. Prabin Kumar Jha**, HoD/ Department of Robotics and Automation Engineering

Email Id: [prabinkumar.jha@tnu.in](mailto:prabinkumar.jha@tnu.in) | Mobile No. **81079 16565**





# Internship Offering

**Offering Department** > **Robotics and Automation Engineering**

## 1 Autonomous Agricultural Robot

<b>Topic</b>	Autonomous Agricultural Robot
<b>Faculty Name</b>	Md. Kamaruzzaman
<b>Contact Number</b>	9734846818
<b>Origin of the Research</b>	The research originates from the need to enhance agricultural productivity and sustainability through autonomous robotic systems.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Hands-on experience in robotics, sensor integration, and embedded systems</li><li>• Understanding precision farming challenges and developing automation solutions.</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic Knowledge of Robotics &amp; Embedded Systems</li><li>• Proficiency in Python</li><li>• Fundamentals of Sensors &amp; Computer Vision</li></ul>

## 1 Can Crusher System

<b>Topic</b>	Advanced Can Crusher
<b>Faculty Name</b>	Manshankar Mira
<b>Contact Number</b>	9351042966
<b>Origin of the Research</b>	Integration of PLC to a Hardware system for the better advancement and easiness of operation.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Students will develop a solid understanding of pneumatics systems.</li><li>• Students will learn the PLC Controller system for real time application basis.</li><li>• Students will learn how to interface PLC through hands-on exercises.</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic knowledge of Pneumatics</li><li>• PLC Design</li></ul>



# Internship Offering

**Offering Department** > **Robotics and Automation Engineering**

## 3 Enhancing the performance of Maria

<b>Topic</b>	Enhancing the performance of Maria
<b>Faculty Name</b>	Dr. Prabin Kumar Jha
<b>Contact Number</b>	8107916565
<b>Origin of the Research</b>	Enhancing the performance of Maria by integrating computer vision and AI to identify the person.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Hands-on experience in robotics, sensor integration, and computer vision</li><li>• Integrating AI in Maria</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic Knowledge of Mobile Robotics &amp; Embedded Systems and control system</li><li>• Fundamentals of Sensors &amp; Computer Vision and AI</li></ul>

## 4 Image processing based Manipulator for cooking bot

<b>Topic</b>	Fundamentals of Sensors & Computer Vision and AI
<b>Faculty Name</b>	Dr. Shambo Roy Chowdhury
<b>Contact Number</b>	7888379160
<b>Origin of the Research</b>	Development of a manipulator for handling cooking materials utilizing image processing for object detection
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Students will develop a solid understanding of robotic systems.</li><li>• Students will integrate sensors and actuators for developing a manipulator.</li><li>• Students will learn how to utilize image processing for object detection in manipulator operation.</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic knowledge of image processing</li><li>• Python Programming language</li><li>• Fundamentals of Robotics</li></ul>



# Internship Offering

**Offering Department** > **Robotics and Automation Engineering**

## 5 AI based robotic arm for handling hazardous materials

<b>Topic</b>	Enhancing the performance of Maria
<b>Faculty Name</b>	Dr. Shambo Roy Chowdhury
<b>Contact Number</b>	7888379160
<b>Origin of the Research</b>	Robotic arms development using AI can be utilized for handling hazardous material (disposed medical accessories)
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Students will develop a solid understanding of robotic systems.</li><li>• Students will integrate sensors and actuators for developing a manipulator.</li><li>• Students will learn how to interface AIML in robot control operation.</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic knowledge of AIML</li><li>• Python Programming language</li><li>• Fundamentals of Robotics</li></ul>

## 6 Mobile robot for Cleaning the Path

<b>Topic</b>	Mobile robot for Cleaning the Path
<b>Faculty Name</b>	Dr. Prabin Kumar Jha
<b>Contact Number</b>	8107916565
<b>Origin of the Research</b>	Prototype development for automatic cleaning the path of TNU campus
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Hands-on experience in robotics, sensor integration, and computer vision</li><li>• Understanding of path planning and obstacle avoidances during the cleaning of path</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic Knowledge of Mobile Robotics &amp; Embedded Systems and control system</li><li>• Fundamentals of Sensors &amp; Computer Vision</li></ul>



# Internship Offering

Offering Department >> Robotics and Automation Engineering

## 7 Soil EC Salinity Meter using Arduino & Soil EC Sensor

Topic	Soil EC Salinity Meter using Arduino & Soil EC Sensor
Faculty Name	Mrs. Sangeeta Barua
Contact Number	9007290632
Origin of the Research	Integration of Microcontroller to measure the soil health in for Agriculture applications.
Expected Outcomes	<ul style="list-style-type: none"><li>• Students will develop a strong knowledge in Arduino programming and Arduino operation.</li><li>• Students will learn to check the soil quality for irrigation.</li><li>• Students will learn how to interface Arduino board in agriculture operation, hands-on exercises.</li></ul>
Prerequisite (if any)	<ul style="list-style-type: none"><li>• Basic knowledge of programming</li><li>• Python Programming language</li></ul>

### Overview:

In this internship, we will learn how to make our own **Soil EC & Salinity Meter** using **Arduino & Soil EC Sensor**. Soil electrical conductivity (**EC**) is a measure of the amount of salts in soil (salinity of soil). It is an important indicator of **soil health**. It affects crop yields, suitability, nutrient availability, and activity of soil microorganisms. **Salinity** is a measure of **soluble salts** in soil or water. Salt molecules comprise a cation from **sodium, potassium, calcium**, and an anion from **chloride** or **sulfate**.





# Internship Offering

Offering Department > Basic Science (Mathematics)

## 1 Mathematical Modelling using Differential Equation and Validation

Topic	Mathematical Modelling using Differential Equation and Validation
Faculty Name	Dr. Ayan Chatterjee
Contact Number	8617681909
Objective	<ul style="list-style-type: none"><li>• Understand different physical processes to build up the mathematical model.</li><li>• Use of numerical methods to solve differential equation.</li><li>• To find useable differentiable equation-based model and validation of the same with ML based model.</li></ul>
Expected Outcomes	Grasping the concept of differential equations and their direct application to physical systems is crucial, especially when combined with Machine Learning techniques to effectively solve and validate models.
Prerequisite (if any)	<ul style="list-style-type: none"><li>• Basic knowledge of differential equation</li><li>• Basic knowledge of computer</li></ul>

Offering Department > Basic Science (Chemistry)

## 2 Synthesis of Nanoparticle

Topic	Synthesis of Nanoparticle
Faculty Name	Dr. Manashi Chakraborty
Contact Number	8013523093
Origin of the Research	This research is necessary for young students because synthesis of nanoparticle is an fundamental aspects to studying material science, nanoscience and nanotechnology. It will have numerous purposes in fundamental research and medicine healthcare, technology and agriculture.
Expected Outcomes	<ul style="list-style-type: none"><li>• Students will develop a solid understanding of how material growth is responsible for the formation of materials.</li><li>• Students will acquire a clear understanding of advance synthesis techniques.</li><li>• Students will build a strong foundation for pursuing undergraduate research projects or higher studies in <b>material science, physics, or engineering.</b></li><li>• Students will work in a lab setting and learn from hands-on experiences.</li></ul>
Prerequisite (if any)	<ul style="list-style-type: none"><li>• Basic knowledge of chemistry and physics</li><li>• Basic computer skills like word and excel for documentation</li></ul>



# Internship Offering

Offering Department

Basic Science

## 3 Crystal Structure Analysis and Material Characterization

Topic	Crystal Structure Analysis and Material Characterization
Faculty Name	Dr. Suchandra Goswami
Contact Number	9614674156
Origin of the Research	This research is necessary for young students because crystal structure and material characterization are fundamental aspects to studying material science, nanoscience and nanotechnology. It will have numerous purposes in both fundamental research and industrial applications
Expected Outcomes	<ul style="list-style-type: none"><li>• Students will develop a solid understanding of different types of materials, including metals, ceramics, polymers, and composites.</li><li>• Students will acquire a clear understanding of <b>crystal systems, lattice structures</b>, and symmetry.</li><li>• Students will learn to interpret and validate results using theoretical concepts.</li><li>• Students will build a strong foundation for pursuing undergraduate research projects or higher studies in material science, physics, or engineering.</li><li>• This project will help students to enhance their problem-solving skills valuable for careers in R&amp;D laboratories, quality control, and product development.</li><li>• Students will work in a lab setting and learn from hands-on experiences.</li></ul>
Prerequisite (if any)	<ul style="list-style-type: none"><li>• Basic knowledge of physics and chemistry</li><li>• Fundamental knowledge of basic algebra, trigonometry, graph and vector analysis</li><li>• Basic computer skills like word and excel.</li><li>• Basic curiosity about how materials behave at the atomic level.</li></ul>





# Internship Offering

**Offering Department**

**Basic Science (Chemistry)**

## 4 Estimation and monitoring of water quality parameters

<b>Topic</b>	Estimation and monitoring of water quality parameters
<b>Faculty Name</b>	Dr. Wasim Akram Shaikh
<b>Contact Number</b>	9955924632
<b>Origin of the Research</b>	Water quality assessment is a crucial aspect of environmental monitoring, ensuring the safety and sustainability of water resources. With increasing concerns over water pollution due to industrial discharge, agricultural runoff, and urbanization, there is a growing need for scientific approaches to evaluate and maintain water quality. This internship program originates from the need to equip young minds with practical skills in water quality analysis, fostering environmental awareness and research aptitude among 12th-standard students. By introducing fundamental concepts and hands-on experience in water quality monitoring, this program aims to inspire students toward careers in environmental science and sustainability.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To introduce students to the fundamental concepts of water quality assessment and environmental monitoring.</li> <li>• To provide hands-on experience in the estimation of key water quality parameters such as pH, dissolved oxygen, turbidity, and chemical contaminants.</li> <li>• To develop analytical and observational skills through laboratory experiments and field sampling.</li> <li>• To enhance awareness of water pollution, its sources, and its impact on human health and ecosystems.</li> <li>• To encourage students to explore careers in environmental science and sustainability.</li> </ul>
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>• Students will gain practical knowledge of water quality monitoring techniques and analysis.</li> <li>• They will develop skills in sample collection, laboratory testing, and data interpretation.</li> <li>• Participants will understand the significance of water quality in environmental sustainability and public health.</li> <li>• The internship will enhance students' problem-solving abilities and scientific reasoning.</li> <li>• Students will be motivated to pursue further studies or careers in environmental science, research, or water resource management.</li> </ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"> <li>• Basic knowledge of environmental science</li> <li>• Basic knowledge of computer.</li> </ul>



# Internship Offering

Offering Department

Basic Science (Chemistry)

- 5** 1) Environmental Intelligence: Application of AI for smart and sustainable solution for waste management.  
2) Green synthesis of nanoparticle and its application in environmental pollution remediation.

Topic	1) Environmental Intelligence: Application of AI for smart and sustainable solution for waste management. 2) Green synthesis of nanoparticle and its application in environmental pollution remediation.
Faculty Name	Dr. Chandra Mukherjee
Contact Number	8777243079
Origin of the Research	<ul style="list-style-type: none"><li>• Smart and sustainable solution to environmental problems (waste management)</li><li>• Discovery of new super paramagnetic nanoparticles and their applications in biotechnology and biomedical sciences, cosmetics to drug delivery as well as in advanced electronics and microwave devices.</li></ul>
Expected Outcomes	<ul style="list-style-type: none"><li>• For better understanding of new generation emerging network of sensor technologies to track environmental changes by sophisticated physical models.</li><li>• Students will learn to synthesize nanoparticle, nanocomposite. Able to explore nanotechnology as a solution tool to environmental challenges. Promising area of the research project and good scientific publications.</li></ul>
Prerequisite (if any)	<ul style="list-style-type: none"><li>• Basic knowledge of Environmental Chemistry</li><li>• Basic knowledge of Computer.</li></ul>



# Internship Offering

Offering Department > Biotechnology

## 1 Mathematical Modeling for Predicting and Validating Bacterial Growth and Survival Dynamics

Topic	Mathematical Modeling for Predicting and Validating Bacterial Growth and Survival Dynamics
Faculty Name	Dr. Diwakar Kumar Singh (Dr. Ayan Chatterjee agree to help in mathematical Modeling)
Contact Number	9415810547
Origin of the Research	The mathematical models precisely record the bacterial growth and survival, and the model reflects well with the experiment's findings under various treatment processes.
Expected Outcomes	<ul style="list-style-type: none"><li>Students will comprehend the behavior of bacteria under various condition</li><li>It can be used to predict the application for medical microbiology and public health activities.</li></ul>
Prerequisite (if any)	<ul style="list-style-type: none"><li>Basic knowledge of Mathematics.</li><li>Basic knowledge of Microbiology.</li></ul>

## 2 Modulation of Polymyxin B Activity via Combinatorial Therapy with Salt

Topic	Modulation of Polymyxin B Activity via Combinatorial Therapy with Salt
Faculty Name	Dr. Diwakar Kumar Singh
Contact Number	9415810547
Origin of the Research	Polymyxin B is an antibiotic that binds and neutralizes lipopolysaccharide, breaking down the outer cell membrane of Gram-negative bacteria. Multidrug-resistant are becoming more challenging in clinical research which can be minimised and effectively treated with it. One of the biggest obstacles in research is Polymyxin B's toxicity, but one of the best strategies to lessen it in clinical trials is to combine it with salt.
Expected Outcomes	<ul style="list-style-type: none"><li>Understanding the microbial growth pattern and calculate MIC of Polymyxin B</li><li>Knowing the best salt combination to increase the bioactivity of Polymyxin B</li></ul>
Prerequisite (if any)	<ul style="list-style-type: none"><li>Basic knowledge of Microbiology and antibiotic treatment</li></ul>



# Internship Offering

## 3 Cultivation of microalgae and extraction of high-energy lipids for bioenergy production

<b>Topic</b>	Cultivation of microalgae and extraction of high-energy lipids for bioenergy production
<b>Faculty Name</b>	Dr. Anirban Das Gupta
<b>Contact Number</b>	8777728167
<b>Origin of the Research</b>	Microalgal biotechnology is emerging as a novel technology to address the pressing challenges of the twenty-first century, including climate change mitigation, alternative clean energy production, and environmental sustainability. Hence, a clear understanding and hands-on training on microalgal cultivation technology can be a critical stepping stone towards becoming a part of the vibrant industry-academia ecosystem that is focused on this emergent technology.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• To learn the techniques of microalgae cultivation</li><li>• learn the techniques of extraction of high energy lipids by solvent extraction technique</li><li>• To learn the techniques of estimation of total lipids used for bioenergy production</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic knowledge of Microbiology</li><li>• Aseptic techniques of Microbiology</li><li>• Basic knowledge of Life Science</li></ul>

## 4 Computational Analysis of Protein Sequences for Functional Annotation

<b>Topic</b>	Computational Analysis of Protein Sequences for Functional Annotation
<b>Faculty Name</b>	Dr. Ranajit Kumar Sarker
<b>Contact Number</b>	9433664420
<b>Origin of the Research</b>	The functional annotation of proteins is crucial in understanding their biological roles. With the rise of genomic sequencing, many proteins remain uncharacterized. Computational tools can predict functions based on sequence similarity and conserved motifs, aiding in the annotation of uncharacterized proteins.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Identification of conserved motifs and domains in selected protein sequences</li><li>• Functional annotation using bioinformatics tools (e.g., BLAST, InterPro, Pfam)</li><li>• Generation of a report summarizing findings and potential biological implications</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic understanding of molecular biology (DNA, RNA, and proteins)</li><li>• Familiarity with sequence databases (NCBI, UniProt)</li><li>• Basic computational skills (optional but beneficial)</li></ul>



# Internship Offering

## 5 In Silico Prediction of Drug-Target Interactions in Microbial Pathogens

<b>Topic</b>	In Silico Prediction of Drug-Target Interactions in Microbial Pathogens
<b>Faculty Name</b>	Dr. Ranojit Kumar Sarker
<b>Contact Number</b>	9433664420
<b>Origin of the Research</b>	Antibiotic resistance in microbial pathogens has emerged as a major global health threat. Identifying new drug targets and understanding drug interactions using computational methods can accelerate the drug discovery process. Molecular docking and target prediction tools can help in screening potential drug candidates against microbial targets.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Compilation of a database of microbial drug targets and existing inhibitors</li><li>• Molecular docking analysis of selected compounds using bioinformatics software</li><li>• Interpretation of binding interactions and ranking of potential drug candidates</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic knowledge of microbiology and infectious diseases</li><li>• Understanding of protein-ligand interactions</li><li>• Familiarity with molecular docking tools (e.g., AutoDock, PyRx) (optional but beneficial)</li></ul>

## 6 Investigating the impact of topoisomerase inhibitors on microbial growth: A biological and statistical modeling approach

<b>Topic</b>	Investigating the impact of topoisomerase inhibitors on microbial growth: A biological and statistical modeling approach
<b>Faculty Name</b>	Dr. Ishita Rehman
<b>Contact Number</b>	9831917176
<b>Origin of the Research</b>	Topoisomerases are a promising target for developing both antimicrobial and anticancer therapeutic strategies. In the current offering, efforts will be focused on antimicrobial chemotherapy, which will comprehensively inhibit microbial growth: a factor that is fundamental to public health management.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Reduce reliance on high antibiotic doses</li><li>• Slow down the development of antibiotic resistance</li><li>• Offer a broader spectrum of bacterial control.</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic knowledge of Microbiology</li><li>• Aseptic handling techniques used in the laboratory</li><li>• Basic knowledge of antibiotics</li></ul>



# Internship Offering

## 7 Repurposing of existing antibiotics using combinatorial therapy

<b>Topic</b>	Repurposing of existing antibiotics using combinatorial therapy
<b>Faculty Name</b>	Dr. Sharmistha Das
<b>Contact Number</b>	9874095810
<b>Origin of the Research</b>	The rising resistance to existing antibiotics has ushered us into the era of the silent and deadly threat of antimicrobial resistance (AMR). With the challenges in developing new antibiotics, combining existing ones could offer a potential solution.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Students will gain a clear understanding of antibiotic resistance, including its mechanisms and impact on treatment efficacy.</li><li>• They will gain scientific knowledge that the misuse and overuse of antibiotics can lead to harmful consequences, including the development of antimicrobial resistance.</li><li>• They will become familiar with various advanced tools and techniques used in combinatorial therapy, such as Minimum Inhibitory Concentration (MIC), Fractional Inhibitory Concentration (FIC), and artificial intelligence/machine learning (AI-ML) techniques.</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Basic knowledge of microbiology</li><li>• Basic knowledge of various classes of antibiotics</li></ul>

## 8 Investigation and analysis of functional aspects of antibiotics isolated from soil microorganism

<b>Topic</b>	Investigation and analysis of functional aspects of antibiotics isolated from soil microorganism
<b>Faculty Name</b>	Dr. Poulomi Chakraborty
<b>Contact Number</b>	9038575194
<b>Objective</b>	<ul style="list-style-type: none"><li>• To isolate and identify diverse microorganisms from soil samples.</li><li>• To screen these isolates for their ability to produce antimicrobial compounds.</li><li>• To characterize the antibiotic-producing microorganisms using morphological, biochemical, and molecular techniques (e.g., 16S rRNA sequencing).</li></ul>
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Identification of conserved motifs and domains in selected protein sequences</li><li>• Functional annotation using bioinformatics tools (e.g., BLAST, InterPro, Pfam)</li><li>• Generation of a report summarizing findings and potential biological implications</li></ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"><li>• Identification of new antimicrobial substances: The primary goal is to discover previously unknown antibiotics with unique chemical structures and mechanisms of action.</li><li>• Expansion of the antibiotic arsenal: This research aims to address the growing problem of antibiotic resistance by providing new therapeutic options.</li></ul>



# Internship Offering

## 9 Analysis of effective application of biofertilizer like microorganisms into soil: A physicochemical and biochemical approach

<b>Topic</b>	Analysis of effective application of biofertilizer like microorganisms into soil: A physicochemical and biochemical approach
<b>Faculty Name</b>	Dr. Poulomi Chakraborty
<b>Contact Number</b>	9038575194
<b>Objective</b>	<ul style="list-style-type: none"><li>• To analyze the changes in physicochemical properties of soil (e.g., pH, electrical conductivity, texture, water-holding capacity, organic matter content) after biofertilizer application.</li><li>• To assess the changes in biochemical properties of soil (e.g., enzyme activities like phosphatase, dehydrogenase, nitrogenase; microbial biomass; nutrient availability) following biofertilizer treatment.</li><li>• To determine the optimal dosage and application method of the biofertilizer for maximizing positive changes in soil properties.</li></ul>
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Detailed characterization of soil changes: Expect to see quantifiable data on how biofertilizers alter soil pH, electrical conductivity, organic matter content, nutrient availability (N, P, K), and water-holding capacity.</li><li>• Identification of key microbial processes: The research should pinpoint the specific biochemical pathways through which biofertilizers enhance soil fertility, such as nitrogen fixation, phosphate solubilization, and hormone production.</li><li>• Mapping microbial community shifts: Researchers should be able to describe how biofertilizer application alters the composition and activity of the soil microbial community.</li><li>• Quantification of enzymatic activity: Measurable changes in soil enzyme activities (e.g., phosphatase, dehydrogenase, nitrogenase) will demonstrate the impact of biofertilizers on soil biochemical processes.</li></ul>





# Internship Offering

**Offering Department** > **Biotechnology / Microbiology**

## 1 Antimicrobial potential determination of a compound

<b>Topic</b>	Antimicrobial potential determination of a compound
<b>Faculty Name</b>	Dr. Payel Paul
<b>Contact Number</b>	8820958670
<b>Origin of the Research</b>	The research originates from the need to identify and evaluate new compounds with antimicrobial properties to combat the spread of drug-resistant strains.
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>Students will determine antimicrobial activity of various compounds</li> <li>Students will learn the concept of Minimum Inhibitory concentration and Minimum Bactericidal concentration</li> <li>Students will identify the range of microorganisms that the compound is effective against</li> </ul>
<b>Prerequisite (if any)</b>	<ul style="list-style-type: none"> <li>Basic knowledge of microbiology</li> <li>Fundamentals of microbiological techniques</li> </ul>

## 2 Action of antimicrobial peptide (AMP) against Antibiotic resistant bacteria and its dose optimization

<b>Topic</b>	Action of antimicrobial peptide (AMP) against Antibiotic Resistant Bacteria (ARB) and its dose optimization
<b>Faculty Name</b>	Dr. Sarita Sarkar
<b>Contact Number</b>	8240943261
<b>Origin of the Research</b>	The research originates from the need to identify and evaluate new compounds with antimicrobial properties to combat the spread of drug-resistant strains.
<b>Objective</b>	<ul style="list-style-type: none"> <li>To understand the antimicrobial activity of AMP against Antibiotic Resistant Bacteria (ARB).</li> <li>To study the antibiofilm activity, the sub MIC doses of AMP against ARB.</li> <li>To understand the underlying mechanism of AMP mediated biofilm inhibition of ARB.</li> <li>To understand the AI driven dose optimisation of AMP prior to validate the optimized doses in the wet lab study.</li> <li>Application of the selected dose of AMP on different kind of medical implants, catheter, contact lens to observe its interference with the ARB.</li> </ul>
<b>Expected Outcome</b>	<ul style="list-style-type: none"> <li>Discovery of novel strategy to combat ARB (Antibiotic resistant bacteria).</li> <li>Understanding the functional aspects of these antibiotics</li> <li>Assessment of the potential for antibiotic resistance development</li> </ul>
<b>Prerequisite (if any)</b>	Understanding core microbiology and its essential techniques



# Internship Offering

Offering Department

Biotechnology / Microbiology

## 3 Action of antimicrobial peptide (AMP) against Antibiotic resistant bacteria and its dose optimization

Topic	Mathematical Modeling for Predicting and Validating Bacterial Growth and Survival Dynamics
Level (select by Domain from the option given below)	Advance
Business Challenges (fill by Domain)	<ul style="list-style-type: none"><li>• The pharmaceutical industry has historically prioritized traditional antibiotics due to established production and distribution systems.</li><li>• Establishing a market for AMP-based therapies requires demonstrating their superiority and cost-effectiveness.</li></ul>
Domain (select from the list given below)	Microbiology
Technology (select from the list given below)	AIML for optimization
Outcomes	<ul style="list-style-type: none"><li>• Discovery of novel strategy to combat ARB (Antibiotic resistant bacteria)</li><li>• Understanding the functional aspects of these antibiotics</li><li>• Assessment of the potential for antibiotic resistance development</li></ul>



# Internship Offering

Offering Department > Computer Science and Engineering

## 1 Retail Management Business Case

Topic	Retail Management Business Case
Faculty Name	Sandipan Chakravorty
Contact Number	9831889620
Origin of the Research	Integration of Enterprise DevOps using Java in <b>Retail Management Business</b> as Business Case study
Expected Outcomes	<ul style="list-style-type: none"><li>● <b>Improved Inventory &amp; Order Management:</b> Ensures real-time tracking of stock levels, reducing overstocking or stockouts.</li><li>● <b>Enhanced Customer Experience:</b> Provides a seamless online ordering and invoicing system, improving customer satisfaction. Optimized Sales &amp; Reporting</li><li>● <b>Generates sales analytics and reports to help retailers make data-driven business decisions.</b></li><li>● Develop Domain based application using Enterprise devops.</li><li>● Practical use of design patterns(MVC).</li><li>● Practical use of Maven as a build tool.</li></ul>
Prerequisite (if any)	<ul style="list-style-type: none"><li>● Basic knowledge of Client server architecture</li><li>● Core java</li><li>● Dbms(ER diagrams and Normalization) and Practical exposure to Basic SQL.</li><li>● Basic knowledge of HTML , CSS and Javascript</li></ul>



# Internship Offering

Offering Department

## 1 Object Segmentation using Deep Learning

<b>Topic</b>	Object Segmentation using Deep Learning
<b>Faculty Name</b>	Dr. Madhu Sudan Das
<b>Contact Number</b>	9732720445
<b>Significance of the Topic</b>	<ul style="list-style-type: none"><li>• It provides solid understanding of the foundational concepts of deep learning, including neural networks, MLP, activation functions, loss functions, optimization algorithms, and backpropagation.</li><li>• Offers a practical understanding on various deep learning architectures such as feedforward neural networks, convolutional neural networks (CNNs), Unet, VGG16, and Resnet.</li><li>• Application of deep learning methods for various segmentation task</li><li>• Interns will learn to apply deep networks in various field.</li></ul>
<b>Outcome of the Internship</b>	<ul style="list-style-type: none"><li>• Students will be able to design various deep learning architecture from the scratch</li><li>• Students will be able to design data loader.</li><li>• Students will be able to train, test and validate their designed model for various datasets.</li><li>• Students will learn various loss functions and their effect on model performance.</li><li>• Interns will be able to apply deep networks for segmentation tasks</li><li>• Students will be able to apply deep learning techniques in solving real life problems in various domain.</li></ul>
<b>Prerequisite</b>	<ul style="list-style-type: none"><li>• Python programming</li><li>• Probability, Linear Algebra and optimisation</li><li>• Calculus, Image processing</li></ul>
<b>Duration of the internship</b>	6 weeks
<b>Maximum Intake</b>	20 students



# Internship Offering

Offering Department

## 2 Origin implements Data Analysis

Topic	Retail Management Business Case
Faculty Name	Dr. Kalyanashis De and Dr. Suchandra Goswami
Contact Number	
Objective	Equip undergraduate students with practical skills in data analysis by immersing them in real-world projects centered on the 'Origin' software. This internship aims to enhance their ability to process, interpret, and visualize data, fostering expertise in using analytical tools for informed decision-making.
Expected Outcomes	<p>Possible outcomes could include:</p> <ul style="list-style-type: none"><li>● <b>Proficiency with Origin Tool:</b> Gain a strong command over the "Origin toll" software, mastering its features for data import, manipulation, visualization, and analysis.</li><li>● <b>Data Interpretation Skills:</b> Develop the ability to interpret complex datasets, extract meaningful insights, and present findings through informative graphs and visualizations.</li><li>● <b>Analytical Expertise:</b> Acquire practical experience in applying statistical methods and analytical techniques using the Origin tool, enhancing problem-solving skills for real-world challenges.</li><li>● <b>Project Implementation:</b> Successfully complete data analysis projects using the Origin tool, demonstrating the capability to independently execute analytical tasks and present results effectively.</li><li>● <b>Enhanced Employability:</b> Boost your employability by adding practical data analysis experience and proficiency with a widely used software tool to your skill set, making you a valuable asset in data-driven industries or research environments.</li></ul>



# Internship Offering

Offering Department

## 1 Machine Learning-based Prediction System Design

<b>Topic</b>	Machine Learning-based Prediction System Design.
<b>Faculty Name</b>	Dr. Usha Rani Gogoi
<b>Contact Number</b>	9863535768
<b>Significance of the Topic</b>	<ul style="list-style-type: none"><li>• Provide opportunities to young students to contribute in cutting-edge technological and interdisciplinary study, through hands-on projects on Machine Learning.</li><li>• Offers a practical understanding of the techniques and tools used by practitioners. Interns learn how to understand data, make predictions, and ultimately decisions based on those predictions.</li></ul>
<b>Outcome of the Internship</b>	<ul style="list-style-type: none"><li>• Upon completion of the program, the students will have an in-depth insight to apply machine learning algorithms in Prediction system design.</li><li>• The participants will also be able to apply their concepts to solve any real time problem, thus making the objective of the training program as desired.</li></ul>
<b>Prerequisite</b>	<ul style="list-style-type: none"><li>• Knowledge of programming languages such as Python, C++/C</li><li>• Knowledge of relevant statistical, mathematical, and computational concepts</li></ul>
<b>Duration of the internship</b>	6 weeks
<b>Maximum Intake</b>	20 students

## LEGEND- BUILDING

### A. ADMINISTRATIVE BLOCK

1. ADMINISTRATIVE BUILDING (G + V)

### B. ACADEMICS BLOCK

2. SCHOLASTIC BUILDING - 1 (G + III)
3. SCHOLASTIC BUILDING - 2 (G + II)
4. SCHOLASTIC BUILDING - 3 (G + III)
5. SCHOLASTIC BUILDING - 4 (G + III)
6. SCHOLASTIC BUILDING - 5 (G + III)
7. WORKSHOP BUILDING
8. NEW WORKSHOP BUILDING
9. NEW PHARMACY BUILDING (G + III)
10. PHARMACY BUILDING (G + III)
11. SHIP IN CAMPUS (G + III)

### C. AGRICULTURE & FISHERY SCIENCE BLOCK

12. POLY HOUSE & NET HOUSE
13. FISHERY SCIENCE PROJECT AREA - 1
14. AGRICULTURE PROJECT AREA - 1
15. FISHERY SCIENCE PROJECT AREA - 2
16. AGRICULTURE PROJECT AREA - 2
17. FISHERY SCIENCE PROJECT AREA - 3
18. AGRICULTURE PROJECT AREA - 3
19. FISHERY SCIENCE PROJECT AREA - 4
20. AGRICULTURE PROJECT AREA - 4
21. AGRICULTURE PROJECT AREA - 5
22. FISHERY SCIENCE PROJECT AREA - 5
23. FISHERY SCIENCE PROJECT AREA - 6
24. AGRICULTURE PROJECT AREA - 6
25. MUSHROOM UNIT
26. FIELD LAB
27. STORE HOUSE
28. SERICULTURE UNIT
29. THRESHING FLOOR
30. BIO GAS PLANT
31. CATTLE SHED
32. VERMI COMPOST PIT
33. BIO FERTILIZER PLANT

### D. RESIDENTIAL BLOCK

34. BOY'S HOSTEL - 1 & 2 (G + III)
35. BOY'S HOSTEL - 1 & 2 (G + III)
36. BOY'S HOSTEL - 1 & 2 (G + III)
37. OLD STAFF QUARTERS (G + III)
38. NEW STAFF QUARTERS (G + III)
39. NEW STAFF QUARTERS (G + III)
40. DIRECTOR'S RESIDENCE (G + I)
41. OLD STAFF QUARTERS (G + III)
42. GIRL'S HOSTEL - 3 (G + II)

### E. UTILITY & SERVICES BLOCK

43. ELECTRICAL ROOM
44. PUMP ROOM

### F. RECREATIONAL BLOCK

45. FOOTBALL GROUND
46. CRICKET GROUND
47. SWIMMING POOL
48. MULTI PURPOSE HALL
49. BASKETBALL COURT (3 NOS.)

### G. HEALTH BLOCK

50. MEDICAL UNIT

