



**Department  
of  
Bioengineering  
Faculty of Engineering  
Integral University  
Lucknow**



**Summer Training 2021-22**

Dear All,

We are glad to announce that the Department of Bioengineering, Faculty of Engineering, Integral University, Lucknow is offering Summer Training on various domains of Biotechnology, Food Technology and Bioinformatics **from 4th July 2022.**

The Department of Bioengineering under the Faculty of Engineering is committed to apply engineering principles to biological sciences in order to develop systems and processes that will prove to be beneficial for the society. The department offers undergraduate and post graduate courses in engineering viz. B. Tech Biotechnology, B. Tech-M. Tech Biotechnology (Dual Degree), M. Tech Biotechnology (Full Time 2 Year Course), M. Tech Biotechnology (Evening 3 Year Course), M. Tech Bioinformatics, B. Tech Food Technology and PhD in various areas of specialization under the Faculty of Engineering. The department is working in the area of genetic engineering, infectious diseases, targeted drug delivery systems, nanobiotechnology, cancer biology, molecular immunology, bioinformatics, plant biotechnology, computational and system biology, animal biotechnology, microbiological engineering, fermentation technology, mathematical modelling and simulation, bioprocess engineering and controls etc. We have a wide array of sophisticated laboratories and instruments and a pool of experienced expert faculty members with diverse specializations. The objective of this training program is to make the students industry ready by providing hands on training and practical session involving the application of basic to sophisticated instrumentation. The training program is committed to skill development to bridge the industry academia gap and enhance employability in Biotechnology and Food Industry engaged in R&D quality control & analysis, production & manufacturing, marketing.

**Eligibility:** The course is open for students of UG (B. Sc/ B.Tech) and PG Level (M.Sc./M.Tech) with the background of Biological Sciences (Biotechnology, Food Technology, Bioinformatics, Lifesciences, Microbiology, Biochemistry and allied disciplines)

**Registration form:** Attached with the brochure

**How to Apply:** **1.** Fill the registration form **2.** Get the form signed by supervisor selected and Head of the department **3.** Make the payment in the **Account section**, Integral University Lucknow **4.** Submit the form and fee receipt to the concerned supervisor **5.** Start the training under allotted supervisor by 4<sup>th</sup> July 2022.

**\* Last date of registration: 1<sup>st</sup> July 2022**

**Note: Certificate will be issued after successful completion of the training (75 % attendance is mandatory)**

**For Any Query:** Dr. Archana Vimal, Dr. Ashish and Dr. Reena Vishvakarma  
Assistant Professor, Department of Bioengineering  
Mobile: +91-6388520482, 7042757830  
Email: avimal@iul.ac.in, ashish@iul.ac.in, reenav@iul.ac.in

# MODULES BEING OFFERED

## **Module 1: Culturing of Blue Green Algae and Growth Standardization**

Name of Supervisor: **Dr. Alvina Farooqui**, Head and Associate Professor

Module Content: Isolation of Blue green Algae from Paddy, Purification and microscopic identification, Growth curve standardization

Duration: 30 Days

Fees: Rs. 3000

No. of seats: 5

## **Module 2: Animal Cell Culture Techniques**

Name of Supervisor: **Prof (Dr.) Iffat Zareen Ahmad**, Professor

Module Content: Briefing about Equipments for the Cell Culture Laboratory training, Cell Types & Culture Characteristics, The Cell Environment (including types of culture medium), Basic Cell Culture Techniques, Protein quantification and Chemi documentation

Duration: 30 Days

Fees: Rs. 5000

No. of seats: 4

## **Module 3: Nanoformulations: Synthesis and Characterization**

Name of Supervisor: **Prof (Dr.) Iffat Zareen Ahmad**, Professor

Module Content: Extraction of Plant extract through soxhlet apparatus, Synthesis of nanoemulsions, synthesis of nanostructured lipid nanoparticles from plant extracts, Characterization by UV-Vis spectrophotometer, zeta sizer, Microscopy, FTIR spectrophotometer, Preparation of Pseudo ternary phase diagram

Duration: 30 Days

Fees: Rs. 5000

No. of seats: 4

## **Module 4: Computational Biology & Bioinformatics**

Name of Supervisor: **Dr. Salman Akhtar**, Associate Professor

Module Content: Screening of molecules, Molecular docking studies, Physiochemical properties prediction and analysis

Duration: 30 Days

Fees: Rs. 4000

No. of seats: 3

### **Module 5: Microbial Bioplastic Production Techniques**

Name of Supervisor: **Dr. Roohi**, Associate Professor

Module Content: Basic of microbiology concept for media preparation, Sterilization techniques, Solid/liquid media preparation, Serial dilution technique, Isolation of bacteria/fungus from different sources, Various method for streaking and spreading for inoculation methods, Different staining techniques for screening- Gram staining, endospore staining, Nile-red staining, Sudan Black B staining, Biochemical and Physiological characterization of microbes, Well diffusion test of different antibiotics against isolated bacteria, Growth kinetics of microbes at different parameter, Isolation of Bioplastic producing microbes from different sources, Screening of bioplastic microbes using Nile-red and Sudan Black B staining, Production of bioplastics from microbes using different agro-wastes

Duration: 30 days

Fees: Rs 4000

No. of seats: 4

### **Module 6: Plant Tissue culture**

Name of Supervisor: **Dr. Aisha Kamal**, Associate Professor

Module Content: Course will cover hands-on experience in a variety of plant tissue culture Techniques like media preparation, sterilization, explants preparation, aseptic inoculation, Callus induction, shoot induction, multiplication,

Time: 30 days

Fees: Rs 5000

No. of seats: 4

### **Module 7: Microbiological Techniques**

Name of Supervisor: **Dr. Mohammed Haneef**, Assistant Professor

Module Content: Isolation of microorganisms from soil, pour plating, spreading and streaking techniques, isolation of pure culture, staining of microorganisms, media preparation, culture characterization, sterilization techniques

Duration: 30 days

Fees: Rs 5000

No. of seats: 4

### **Module 8: Biochemistry**

Name of Supervisor: **Er. Soban Ahmad Faridi**, Assistant Professor

Module Content: Estimation methods and their comparison for Proteins, fats, carbohydrates, etc.

Time: 30 days

Fees: Rs 3000

No. of seats: 4

### **Module 9: Protein Informatics**

Name of Supervisor: **Er. Soban Ahmad Faridi**, Assistant Professor

Module Content: Protein structure prediction, Application of bioinformatics tools to study molecular interactions.

Duration: 30 days

Fees: Rs 3000

No. of seats: 4

### **Module 10: Fermentation Technology**

Name of Supervisor: **Er. Soban Ahmad Faridi**, Assistant Professor

Module Content: Fermentative production of metabolites.

Time: 30 days

Fees: Rs 3000

No. of seats: 4

### **Module 11: Downstream Processing**

Name of Supervisor: **Er. Soban Ahmad Faridi**, Assistant Professor

Module Content: Separation and purification of different products from raw materials.

Duration: 30 days

Fees: Rs 3000

No. of seats: 4

### **Module 12: Data analysis**

Name of supervisor: **Er. Khwaja Osama**, Assistant Professor

Module content: Python Basics, Python Data Structures, Python Programming Fundamentals, Working with Data in Python, Data Wrangling, Exploratory Data Analysis, Model Development, and Model Evaluation

Time: 30 days

Fees: Rs 3000

No. of seats: 4

### **Module 13: Product development, waste utilization, and edible film formation**

Name of Supervisor: **Dr. Kaiser Younis**, Assistant Professor

Module content: The first 20 days will be devoted to product development and waste utilization techniques. The last 10 days will be conducted on the analysis of products.

Duration: 30 days

Fees: Rs 3000

No. of seats: 10

#### **Module 14: Food shelf-life extension, new product development, and food waste vaporization**

Name of Supervisor: **Er. Poonam Sharma**, Assistant Professor

Module Content: The first 20 days will be devoted to explore shelf-life extension of fruits and vegetables using food waste, then 10 days for new product development, and waste vaporization. The last 15 days will be conducted on the analysis of products.

Time: 45 days

Fees: Rs 4000

No. of seats: 10

#### **Module 15: Microbiology and Fermentation Technology**

Name of Supervisor: **Dr. Archana Vimal**, Assistant Professor

Module Content: Isolation of endophytic fungi from different plants, Characterization of isolated fungi, Production of bioactive compounds from the endophytic fungi

Duration: 30 days

Fees: Rs 3000

No. of seats: 10

#### **Module 16: Solid State Fermentation and Downstream Processing**

Name of Supervisor: **Dr. Reena Vishvakarma**, Assistant Professor

Module Content: Isolation of endophytic fungi from different plants, Production of biosurfactants through solid state fermentation

Duration: 30 days

Fees: Rs 3000

No. of seats: 10

#### **Module 17: Extraction of bioactives from agro industrial waste**

Name of Supervisor: **Dr. Rahul Singh and Er. Gazia Nasir**, Assistant Professor

Module details: Extraction of bioactives from selected agro industrial wastes structural characterization by FTIR, SEM, XRD, Physicochemical, Functional and engineering characteristics of selected agro waste

Duration: 30 days

Fees: Rs. 5000

No. of seats: 4



**Department of Bioengineering  
Faculty of Engineering  
Integral University, Lucknow**

Paste your recent Passport Size Photograph

**Application Form for Summer Training  
Under the  
Biotechnology Research Trust Fund (BRTF)**

Name:.....

Roll Number: .....

Program:.....Branch:.....

Year:.....Semester:.....

Corresponding Address:.....  
.....

Tel.:.....Mobile:.....

E-mail:.....

Module of Interest (Refer the Advertisement Brochure)  
.....

Signature of Student

Name of Supervisor: (I<sup>st</sup> Choice).....Sign. of Supervisor .....

Name of Supervisor: (II<sup>nd</sup> Choice).....Sign. of Supervisor .....

Signature of H.O.D