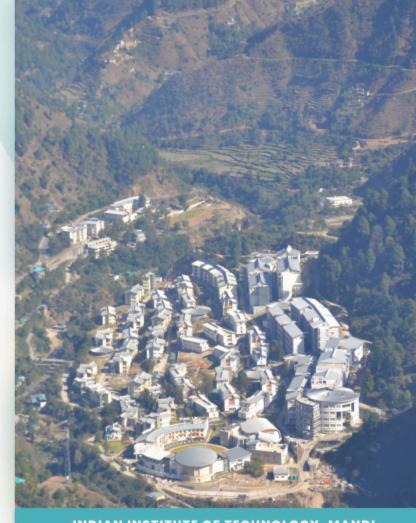
## **IIT MANDI**

PLACEMENT BROCHURE M.Tech. Biotechnology 2025-26





INDIAN INSTITUTE OF TECHNOLOGY, MANDI

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INDIAN INSTITUTE OF TECHNOLOGY, MANDI

## The School of Biosciences and Bioengineering (SBB)



Prof. Tulika P Srivasatava Chairperson

### **Empowering Innovation in Biosciences and Bioengineering**

The School of Biosciences and Bioengineering (SBB) at IIT Mandi is a center of excellence for interdisciplinary research in biotechnology and life sciences. Established in 2016, SBB brings together biology, engineering, and computational approaches to tackle pressing challenges in healthcare, industrial biotechnology, environmental sustainability, and agriculture. The school hosts over a dozen research-active faculty and nine specialized labs engaged in areas such as nanomedicine, immune engineering, tissue regeneration, proteomics, systems biology, and computational genomics. Research at SBB is supported by competitive grants from national agencies including the Department of Biotechnology (DBT), the Science and Engineering Research Board (SERB), and the Department of Science and Technology (DST). Several faculty also collaborate with institutions in Europe, Singapore, and North America. Students in the M.Tech Biotechnology program are embedded in these labs and gain hands-on experience in real-world research and problem-solving using cutting-edge infrastructure. The school's focus on translational application-oriented training makes its graduates uniquely prepared for both industry and academic careers.

# SBB Faculty and Research Expertise

#### Prof. Tulika P Srivasatava

Systems Biology Lab

Systems Biology and Multi-OMICS, Applications for Health and Environment, Next Generation Sequencing Applications, Computational Biology, Microbiology

#### Dr. Baskar Bakthavachalu

Baskar Lab

Genetics and Molecular Neuroscience, Cell and Molecular Biology, Biochemistry, Insect Biology

### Dr. Amit Jaiswal

AJ Lab nanoBio

Nanobiotechnology, Materials Chemistry, Sensors, Biomaterials

### Dr. Ekta Makhija

Mechanobiology of cells and tissues

#### Prof. Shyam K Masakapalli

Metabolic Systems Biology Lab

Metabolic Systems Biology, Fluxomics, Metabolomics, Biochemistry, Cellular Bioprocessing Technology, Smart Agriculture

#### Dr. Amit Prasad

Immune Engineering lab

Immunology, Neuro inflammation, Neuro infection, Parasitology, Microbiology

#### Dr. Prasad Kasturi

Prasad Kasturi Lab

Protein quality control, Stress response, Aging, C.elegans

#### Dr. Kharerin Hungyo

Hungyo lab

Computational and Physical Genomics

#### Dr. Trayambak Basak

Proteomics Lab

Cardiometabolic diseases, Mass-Spectrometry based Proteomics & Metabolomics, Extracellular Matrix

#### Dr. Sumit Murab

Murab Group

Tissue Engineering, Biomaterials, 3D printing/ bio-printing, Disease models, Intellectual property rights

#### Dr. Lokesh Pisaram Ramteke

Water & Wastewater Treatment, Lake Rejuvenation and Restoration, Membrane Separation.

### Dr. Sanjeev Nara

Biomedical Signal and Image Processing



# Systems Biology & Multi-Omics Lab

### Prof. Tulika Prakash Srivastava

Focuses on host-microbiome interactions and regulatory networks using metagenomics, transcriptomics, and systems-level data integration. Students work on Illumina-based sequencing and build analytical pipelines using R, Python, and bash.

- Trained in next-gen sequencing, microbiome analytics, and biological data science
- Hands-on with multi-omics workflows and predictive modeling
- Prepared for roles in bioinformatics, microbiome therapeutics, and Al-driven healthtech

## Metabolic Systems Biology Lab

## Prof. Shyam Kumar Masakapalli

Focuses on metabolomics, flux analysis, and microbial bioprocess optimization using Thermobifida fusca. Students are trained in NMR, GC-MS, <sup>13</sup>C fluxomics, and fed-batch process development.

- Skilled in pathway modeling and metabolite quantification using advanced instrumentation
- Project experience in biomass valorization and microbial strain optimization
- Well-suited for roles in bioprocess R&D, industrial biotechnology, and fermentation-based production systems

## NanoBio Lab

### Dr. Amit Jaiswal

Develops polymeric, hybrid, and metal-based nanostructures for targeted drug delivery, photothermal cancer therapy, point-of-care diagnostics, and antimicrobial applications. Students are trained in nanoparticle synthesis, drug loading, surface functionalization, and characterization using SEM, DLS, and zeta potential.

- Trained in theranostic systems integrating photothermal therapy and SERS-based diagnostics
- Skilled in antimicrobial nanoformulations and responsive drug delivery platforms
- Well-prepared for roles in nanopharma, diagnostic development, and biomedical materials R&D

# Immune Engineering Lab

### **Dr. Amit Prasad**

Focuses on host-pathogen interactions and immune signaling in infectious and inflammatory diseases, including neurocysticercosis and H. pylori-induced inflammation. Students work with immunoassays, in vivo models, and diagnostic development.

- Trained in ELISA, cytokine profiling, and molecular immune analysis
- Experience with early vaccine targets and miRNA-based immune modulation
- Prepares graduates for roles in biologics R&D, infection diagnostics, and immunotherapy development

## Translational Tissue Engineering Lab

### **Dr. Sumit Murab**

Designs 3D-printed scaffolds and bioactive hydrogels for bone repair, wound healing, and implantable drug delivery. Students are trained in bioprinting, mechanical testing, and cell-material interaction studies.

- Skilled in scaffold design, hydrogel chemistry, and regenerative biomaterials
- Project experience aligned with orthobiologics, wound care, and implant R&D
- Ideal fit for roles in medtech, tissue engineering, and controlled drug delivery platforms

## Proteomics & Cardiometabolic Disorders Lab

### Dr. Trayambak Basak

Studies protein-level regulation in cardiometabolic diseases, focusing on extracellular matrix dynamics and signaling pathways. Students are trained in LC-MS/MS, 2D electrophoresis, and in vitro disease models.

- Skilled in proteomics, biomarker discovery, and posttranslational modification analysis
- Experience with clinical sample processing and translational disease modeling
- Aligned with roles in precision diagnostics, clinical bioanalytics, and pharma R&D

## Proteostasis & Aging Lab

### Dr. Prasad Kasturi

Investigates protein homeostasis, cellular stress response, and aging using C. elegans and human cell models. Students are trained in CRISPR/Cas9 editing, RNAi screening, live-cell imaging, and protein aggregation assays.

- Skilled in genetic manipulation, stress biology, and proteome regulation
- Experience in therapeutic screening for age-related protein misfolding disorders
- Suited for roles in systems biology, aging-focused R&D, and proteostasis-targeted drug discovery

## Molecular Neuroscience Lab

### Dr. Baskar Bakthavachalu

Explores RNA granule dynamics, protein aggregation, and translational control in neurodegenerative diseases like ALS and FTD. Students work with Drosophila and mammalian cell models, focusing on stress signaling and RNA-protein interactions.

- Trained in genetic manipulation, neurodegeneration modeling, and confocal imaging
- Skilled in RNA biology and screening for therapeutic modulators
- Well-suited for roles in neurobiology research, CNS drug pipelines, and RNA-targeted therapeutics

## Computational & Physical Genomics Lab

### Dr. Kharerin Hungyo

This lab combines computational biophysics and genomics to explore how chromatin folds and nucleosomes position across the genome. Students use bioinformatics, machine learning, and sequencing data (like MNase-seq) to model nucleosome dynamics and predict genome organization.

- Trained in ML-driven genomic modeling, MNase-seq data analysis, and simulation-based predictions
- Hands-on experience with structural genome insights and biophysical modeling
- Equipped for roles in genome informatics, epigenetics R&D, and data-driven biotech platforms

## Mechanobiology Lab

Dr. Ekta Makhija

Explores how mechanical forces and cellular organization shape tissue development, differentiation, and health. Students study pattern formation, cellular self-assembly, and tissue mechanics using imaging, force measurement, and cell-based assays.

- Trained in biomechanical analysis, cell-material interaction studies, and predictive modeling of tissue morphogenesis
- Skilled in applying biophysical markers and force-sensing techniques relevant to tissue engineering and regenerative medicine
- Prepared for roles in biotech R&D, medical device firms focused on mechanobiology, and diagnostic companies leveraging biophysical cell markers

# Biomedical Signal & Imaging Lab

Dr. Sanjeev Nara

Decodes brain activity using Al-driven models and neuroimaging data from EEG, MEG, and fMRI. Students develop pipelines for signal analysis, cognitive state prediction, and machine learning-based interpretation.

- Skilled in neural signal processing, feature extraction, and model building
- Experience with cognitive state decoding and real-world brain data
- Prepared for roles in neurotechnology, digital diagnostics, and Al in healthcare

# **Environmental Biotechnology Lab**

Dr. Lokeshkumar P. Ramteke

Works on bioremediation, membrane-based filtration, and waste-toresource systems for clean water and environmental restoration. Students contribute to projects like low-cost RO systems and lake rejuvenation.

- Trained in water treatment technologies and environmental system design
- Hands-on with phytoremediation, membrane processes, and sustainable engineering
- Ready for roles in clean-tech, wastewater R&D, and environmental biotech startups



 Career and Placement Cell (CnP), IIT Mandi sends formal invitation and relevant information regarding Campus Placement to the companies



**Placement** 

**Procedure** 

 The company can interview the shortlisted students and finally submit the list of selected students.



 Companies can register by filling Internship Notification Form (INF) / Job Notification Form (JNF).



Recruiters can conduct any kind of test or shortlist on the basis of resume before moving forward with the interviews.



 Any company, if interested in organizing a Pre-Placement Talk (PPT) can share their request along with relevant details.



 Interested students can apply for the recruitment process through the online portal and thereafter, their resumes are shared with the company.



 The CnP cell decides the final placement schedule of tests with companies after mutual discussion and consent.



 All the appropriate details regarding the company and opportunity offered is shared with students

## **A Note to Recruiters**

The M.Tech Biotechnology batch of 2024–26 from IIT Mandi brings together strong academic foundations with hands-on research experience. Each student has spent a year working on real-world challenges in areas such as diagnostics, therapeutics, and bioinformatics.

With exposure to advanced lab techniques and interdisciplinary training, they are well-prepared to contribute to research-driven and innovation-focused roles. We welcome you to connect with our students and explore how they can add value to your teams.

# | Contact Us

# Faculty Advisor (M.Tech Biotechnology) Dr. Kharerin Hungyo

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