Department of Biotechnology, IIT Madras
MS (by Research) admissions Jan 2024

List of available MS (by Research) Project titles

1) CB- Computational Biology Stream

Faculty Name	No of vacancies	Project titles
Meiyappan Lakhmanan	1	Development of computational modeling and multi-omics analysis framework for biomanufacturing and healthcare applications
M. Hamsa Priya	1	Machine Learning Accelerated Conformational Sampling
Karthik Raman	1	Synthetic biology: ML and model-driven approaches to design biological circuits Microbiome systems biology: ML & Network science-driven approaches to identify key differences between microbiomes in varying environments
Richa Karmakar	1	Modelling cell surface dynamics and cell–cell interactions
Himanshu Sinha	1	Gestational age and preterm risk prediction models for the Indian population

2) BS- Biological Sciences Stream

Faculty Name	No of vacancies	Project titles
K Chandraraj	1	Bioremediation of mining industry wastes
Nitish Mahapatra	1	Post-transcriptional regulation of candidate genes for cardiovascular disease

3) BE- Biological Engineering Stream

Faculty Name	No of Vacancies	Project titles
K Chandraraj	1	Value added products from biorefinery effluents
Smita Srivastava	1	Bioreactor cultivation of plant stem culture of A. indica for sustainable production of Azadirachtin

1) CB- Computational Biology Stream

Faculty Name	No of vacancies	Project title(s)
Meiyappan Lakhmanan	1	Development of computational modeling and multi-omics analysis framework for biomanufacturing and healthcare applications
Michael Gromiha	2	1. Functional annotation of plant genomes 2. Explainable AI based method for detecting cancer using omics data
M. Hamsa Priya	1	Computational Modeling of Protein Aggregation and Phase Separation
Karthik Raman	1	Cancer genomics: ML approaches to identifying key mutations in cancer genomes responsible for radio-sensitivity Microbiome systems biology: ML and network science approaches to identify keystone species and network structure of environmental microbiomes Microbiome systems biology: Modelling the evolution of microbial communities (with applications to understand microbial succession and therapeutic strategies)
Richa Karmakar	1	Computational analysis of cell-cell interaction during chemotaxis
Himanshu Sinha	1	Gestational age and preterm risk prediction models for the Indian population
Vani Janakiraman	1	Virus infections and autoimmune responses

2) BS- Biological Sciences Stream

Faculty Name	No of Vacancies	Project title(s)
K. Subramaniam	1	Maintenance of germline stem cells in C. elegans
Meiyappan (Guide) Greeshma (Co-Guide)	1	Harnessing the potential of stem cells for smart proteins
Vani Janakiraman	2	• Understanding communication in bacteria and its relevance to antibiotic resistance. • Understanding novel bacterial small molecules and their influence on immune response

3) BE- Biological Engineering Stream

Faculty Name	No of Vacancies	Project title(s)
Athi Narayanan N	1	Understanding the Role of Protein Mutations in Disease Outcomes and Pathogenicity
K CHANDRARAJ	1	Integrated process development for bioethanol production from lignocellulosic feedstocks
Smita Srivastava	1	Rational Metabolic engineering of Santanum album for enhanced Santanols production
Vignesh Muthuvijayan	1	Multifunctional bioactive dressings to treat diabetic wounds