MIT-WPU

॥ विश्वशान्तिर्ध्रुवं ध्रुवा ॥

SHAPING INNOVATORS OF TOMORROW

BIOSCIENCES & TECHNOLOGY

WPU SCHOOL OF SCIENCE & ENVIRONMENTAL STUDIES

ADMISSIONS 2024

mitwpu.edu.in

MIT World Peace University (MIT-WPU)

MIT World Peace University (MIT-WPU) is a prestigious world-class institution for higher education in India, boasting a remarkable 40-year legacy dedicated to fostering excellence in academics. With a global alumni network comprising over 100,000 professionals, MIT-WPU has consistently delivered outstanding educational outcomes. The institution offers over 150 undergraduate and postgraduate programmes that are thoughtfully designed to strike a balance between theoretical foundations and practical application. The pedagogical approach prioritises experiential learning, empowering students to translate knowledge into real-world skills. This is facilitated through immersive internships and invaluable mentor-mentee insights that serve as catalysts for personal and professional growth.

University Highlights

- 100,000+ Alumni Globally
- 1600+ Companies visited for placement
- International Students from 30 countries
- Merit-Based Scholarship worth Rs. 50 Cr.
- Highest University Package: Rs. 51.36 Lakhs CTC
- Outcome based learning aligned with Bloom's taxonomy.
- Experiential learning through Rural, National & International Immersion and Co-creation Programmes.
- Lateral learning through events like RIDE (Research, Innovation, Design, Entrepreneur-ship), SLDP (Social Leadership Development Programmes) & more.
- The curriculum is taught by international academicians, industry practitioners, and alumni.
- Practical and real-life experience with Industry sponsored Capstone projects, Internships, & Seminars.
- Holistic development through participation in Yoga, Patriotism, Peace, Agriculture & Spiritual programmes.

Why Degree in Biotechnology and Mircobiology Programmes from MIT-WPU?

Biotechnology and Microbiology take a central role in academic journey of a bioscience student greatly influencing research and innovations on local, national, and global scales. It's a truly interdisciplinary field, spurring significant socio-economic progress. Recent years have seen biotechnology transform into socio-economic development, impacting healthcare, medicine, agriculture, veterinary science, environmental management, energy, and more. This involves the biological engineering of systems at molecular, cellular, and organic levels to create innovative products and processes.

The post graduate and undergraduate biotechnology programmes at MIT-WPU harness core biotechnological principles to develop controlled processes or products for healthcare, biopharmaceuticals, industry, and sustainable biotechnology. Covering biochemistry, genomics, proteomics, stem cell technology, nanobiotechnology, biomimetics, bioanalytics, pharmacovigilance, computational biology, systems biology, and synthetic biology. The curriculum is shaped in collaboration with leading researchers, biomedical experts, clinicians, and industry specialists. The emphasis is on industry exposure, innovation, entrepreneurship, and life skills, including a dedicated course in entrepreneurship and innovation, preparing students for success in the dynamic realm of biotechnology.

Programmes Offered

- Integrated B.Sc M.Sc in Biotechnology
- M.Sc Biotechnology
- M.Sc Microbiology
- Doctoral Programmes in Biochemistry, Microbiology and Biotechnology

WPU School of Science & Environmental Studies

The MIT-WPU School of Science and Environmental Studies epitomises an unwavering commitment to delivering excellence in the realm of natural sciences education. It encompasses the Departments of Mathematics and Statistics, Physics, Chemistry, Biosciences and Technology, and Environmental Studies, offering a comprehensive array of undergraduate, postgraduate, and doctoral programmes. Central to its educational philosophy is a meticulously designed curriculum that imparts students with a robust foundation in the fundamental principles of these disciplines. This curriculum seamlessly blends theoretical insights with hands-on practical learning, including classroom lectures, enlightening guest seminars, laboratory work, engaging projects, and extensive research opportunities. The distinguished faculty members, comprising eminent academicians and accomplished industry leaders, enrich the educational experience with their wealth of knowledge and experience, upholding the highest teaching standards. The school places a strong emphasis on nurturing interdisciplinary and multidisciplinary research, empowering students to explore their passions and develop academic, professional, and research skills demanded by today's dynamic workplaces. Graduates emerge as dynamic and capable leaders, poised to make significant contributions within their chosen fields and society at large. The School of Science and Environmental Studies equips them with intellectual prowess, professional acumen, and research proficiency essential in today's competitive workforce, paving the way for transformative change.

Department of Biosciences & Technology

The Department of Biosciences and Technology at the School of Science and Environmental Studies is equipped with state-of-the-art laboratories, including microbial culture laboratory, an animal tissue culture laboratory, bio-analytical laboratory, plant biotechnology laboratory, electrochemical analysis, and molecular and cell biology laboratory. These facilities provide students with the opportunity to gain hands-on experience and develop technical skills. The department offers industry-oriented undergraduate, postgraduate, and doctoral programmes that focus on contemporary and future-oriented technical and scientific knowledge in the fields of biological sciences, biotechnology, and microbiology. The curriculum is according to national education policy, promotes self-directed learning, independent learning, industry-focused education with critical thinking, project-based learning, problem-solving, experiential training, and research. In addition, the department offers internships, industry visits, and immersion programmes at local, national, and international locations, as well as regular interactions with practising professionals and researchers. The department also has industry collaborations and skill development training programmes to help students become industry-ready professionals. These opportunities allow students to gain real-world experience and prepare for careers in the industry.

Programme Highlights:

At MIT-WPU School of Science and Environmental Studies, the programmes stand out for their exceptional offerings that empower students with a unique set of skills and expertise:

Expert Faculty

Faculty with extensive industry, academic, and research expertise.

Practical Learning

Case studies-based pedagogies for real-world applications.

Global Exposure

Immersion programmes at rural, national, and international levels.

Alumni Network

A robust global alumni network for invaluable connections.

Vibrant Campus

Over 100 student-led clubs catering to diverse interests.

Cutting-edge Curriculum

Aligned with the New Education Policy (NEP 2020)

Industry Insights

Regular guest lectures, seminars, and workshops by industry leaders.

Career Support

A dedicated Centre for Industry Academia partnerships for internships and placements.

Entrepreneurship Drive

Encouraging entrepreneurship through funding and mentoring via MIT-WPU Pune Technology Business Incubator (TBI).

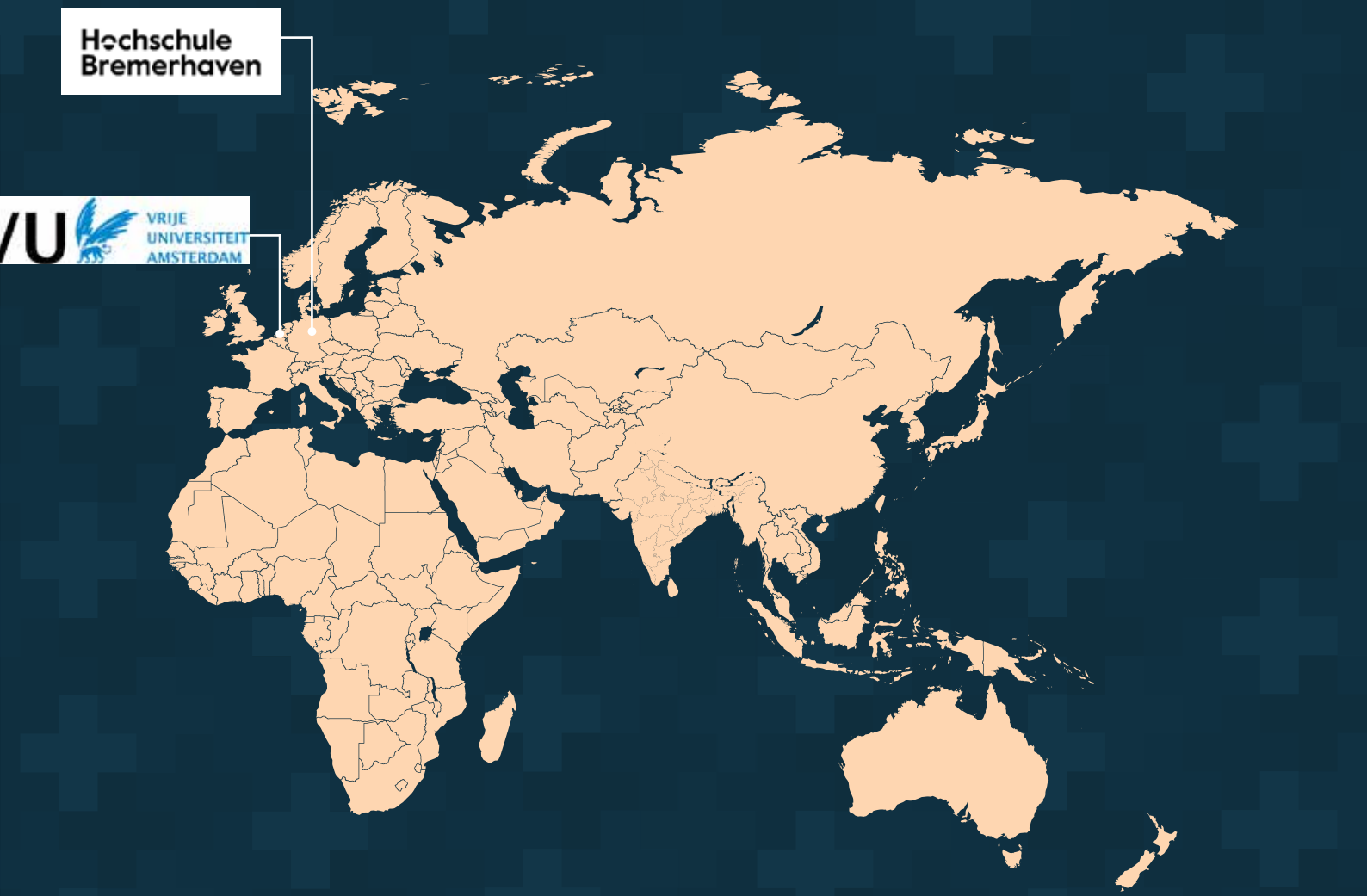
Industry Integration

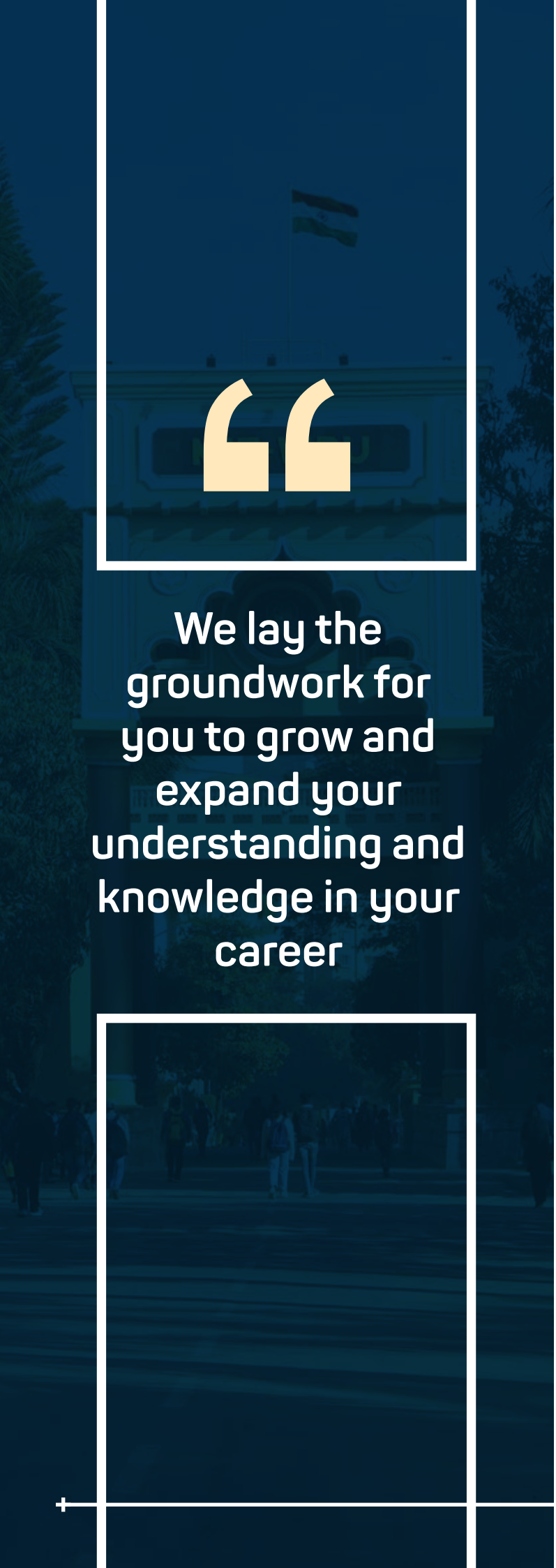
Mandatory 6-month full-time industry internships with renowned MNCs.

Academic Partnerships:
Making Learning Global

The School of Science and Environmental Studies at MIT-WPU is renowned for its steadfast commitment to providing a truly global education. Through strategic partnerships with top international universities, the school exemplifies its dedication to transcending geographical boundaries. These collaborative programmes promote the cross-pollination of international disciplinary approaches, significantly enhancing the educational experience for students. The institution's dedication to global engagement extends through a diverse array of initiatives, including student and faculty exchange programmes, immersive summer and winter programmes, active research associations, enriching extra credit offerings, and an array of stimulating activities. These initiatives not only celebrate cultural diversity but also provide students with invaluable international exposure, fostering well-rounded global citizens. The School takes immense pride in its collaborations with esteemed international universities, amplifying its academic environment and offering students a broader global perspective. This commitment underscores the institution's belief that a global outlook is integral to educational excellence, consistently demonstrated in its pursuit of fostering a global perspective.

The School of Science and Environmental Studies has collaborations with international universities, including:





We lay the groundwork for you to grow and expand your understanding and knowledge in your career

Associate Dean's Message

We welcome young minds to the School of Science and Environmental Studies at MIT World Peace University (MIT-WPU). The number of career options available to science students has grown exponentially as technology and industries have advanced. With vast opportunities in research, innovation and technology, the science stream provides a dynamic work environment rich in specialisations to explore. With recent pandemics and international conflicts, the importance of being self-sufficient in science and technology has become clearer than ever. This is where a science graduate can make a difference in our country's economic growth.

The School of Science and Environmental Studies offers 11 undergraduate and postgraduate programmes in Chemistry, Physics, Mathematics & Statistics, Biosciences and Environmental Studies, as well as doctoral programmes in these disciplines. The faculty members at the School of Science work hard to achieve the mission of imparting innovative skills and value-based quality education through academic excellence and research experience at leading institutions in India and abroad.

Science and technology, as a broad field, encompasses a wide range of interdisciplinary domains, including biotechnology, microbiology, physics, photonics, chemistry, polymers, mathematics, statistics, data science, bioinformatics, and tissue engineering. These fields are the backbone of the economic growth of any country. Professionals in science and technology are needed in almost every industry, from government to manufacturing to healthcare. We provide undergraduate, postgraduate, and doctoral degree programmes, as well as employment opportunities in science and technology. By developing their skill sets, we make our students highly competitive and ready for industry in the major areas of opportunity

through our unique teaching and learning process.

Understanding the industry and how to excel in it after earning a degree are critical components of future success. This is where we help our students improve their skills and domain knowledge. This has resulted in our students being placed in top companies with competitive salaries in all areas of Mathematics, Statistics, Biotechnology, Chemistry, Physics and Environmental Studies. At MIT-WPU, we lay the groundwork for you to grow and expand your understanding and knowledge in your career. We provide our students with six-month industry internships as well as in-house research projects based on current industry and societal challenges. Our students publish research articles and present their work at international conferences on a regular basis. Furthermore, we train and mentor our students in the areas of innovation and entrepreneurship. This has resulted in successful university-sponsored projects in Hackathons, which have resulted in start-ups and patents.

Welcome to MIT-WPU!

Prof. Dr. Anup Kale
Associate Dean, School of Science and Environmental Studies

Academic Programmes in Biotechnology

The Degree in Biotechnology programmes offered by MIT-WPU represent a gateway for students to enter the dynamic world of biotechnology. These comprehensive programmes cover a wide spectrum of subjects, providing students with a strong foundation in biochemistry, genomics, proteomics, stem cell technology, nanobiotechnology, biomimetics, bioanalytics, plant biotechnology, pharmacovigilance, computational biology, systems, and synthetic biology. Developed in collaboration with eminent researchers, biomedical experts, clinical practitioners, and industry leaders, these programmes are tailored to equip students with specialised knowledge and practical skills vital for success in the biotechnology field. They prepare students for promising careers in healthcare, biopharmaceuticals, industrial sectors, and related domains. These programmes adopt a hands-on approach, placing emphasis on research projects and industrial internships. This practical exposure enables students to apply their theoretical understanding to real-world situations, fostering the development of industry-relevant skills. With a commitment to interdisciplinary learning, a diverse range of elective courses, and an unwavering dedication to excellence, these programmes provide students with the foundation to excel and contribute significantly to the constantly evolving biotechnology landscape.

Integrated B.Sc M.Sc in Biotechnology

Duration: 5 Years

Fee: INR 1,05,000/- PA

The Integrated M.Sc in Biotechnology is a five-year programme that imparts students with the techniques, skills, and knowledge employed in applied biology and its diverse branches. The programme provides comprehensive training in all basic sciences and interdisciplinary fields during the initial four years. Throughout the programme, students receive practical training, along with guest lectures and guidance from experts at esteemed institutions.These experiences serve to cultivate a robust foundation in the field and ready students for advanced studies or professional careers in biotechnology and related domains.

In the final two years of the programme, students can opt for specialisations in the following areas:

- **Tissue Engineering and Stem Cell Technology**
- **Clinical Research and Pharmacovigilance**
- **Bioinformatics and Data Analytics**
- **Agriculture and Food Technology**

In the concluding year of the programme, students are encouraged to pursue a research internship and project, further augmenting their experience and knowledge. The programme's emphasis on practical skills and hands-on learning, coupled with a wide range of elective courses, equips students for versatile and prosperous careers in the field.

Semester 1

- Biochemistry and Metabolism
- Biostatistics
- Fundamentals of Cell & Molecular Biology
- Microbiology
- Integrated Laboratory - 01
- Learning to Learn
- Effective Communication
- Indian Constitution
- Environment and Sustainability
- Critical Thinking
- Digital Literacy
- Yoga - I

Semester 2

- Bioanalytical Techniques
- Bioinformatics
- Genetics
- Immunology
- Recombinant DNA Technology
- Integrated Laboratory – 02
- Financial Literacy
- Foundations of Peace
- Yoga - II
- Co-creation

Semester 3

- Bioprocess Technology
- Computational Biology
- Food Chemistry and Microbiology
- Plant and Animal Biotechnology
- Integrated Laboratory - 03
- Spiritual and Cultural heritage: Indian Experience
- Rural Immersion
- Research Innovation Design
- Entrepreneurship (RIDE)
- Project Based Learning - I
- University Electives - I

Semester 4

- Environmental Biotechnology
- Fundamentals of Metabolic Engineering
- Genomic Data Science
- Genomics and Proteomics
- Bioethics, Biosafety and IPR
- Integrated Laboratory - 04
- Project Based Learning - II
- University Electives - II

Semester 5

- Introduction to Stem cell
- Biology
- Pharmaceutical Technology
- Research Methodology
- Integrated Laboratory-05
- Project Based Learning - III
- Managing Conflicts Peacefully:
- Tools and Techniques
- University Electives - III
- Programme Elective - I

Semester 6

- Innovation and Bio
- entrepreneurship
- Biologue: A Scientific Discourse
- Research Project
- Project Based Learning – IV
- National Academic Immersion
- Programme Elective - II

Semester 7

Specialisation: 01 Tissue Engineering and Stem Cell Technology	Specialisation: 02 Clinical Research and Pharmacovigilance	Specialisation: 03 Bioinformatics and Data Science	Specialisation: 04 Agriculture and Food Technology
Cell Signalling and Communications	Biopharmaceutics and pharmacokinetics	Algorithms for Bioinformatics	Advanced plant physiology and phytochemistry
Principles of Regeneration and Developmental Biology	Clinical Trial Design and Statistical Analysis	Genome Informatics and Big Data Science	Biotechnological tools for Crop and Seed Improvement
Systems Biology	Drug discovery	Protein Bioinformatics and Molecular Dynamics	Food and Dairy Biotechnology
Tissue Engineering and Translational Medicine	Molecular Mechanisms of Drug Action	Systems Biology	Plant pathology and Integrated pest management
Tissue Engineering and Stem Cell Technology Lab 01	Clinical Research and Pharmacovigilance Lab 01	Bioinformatics and Data Analysis Lab 01	Agriculture and Food Technology Lab 01

Semester 9

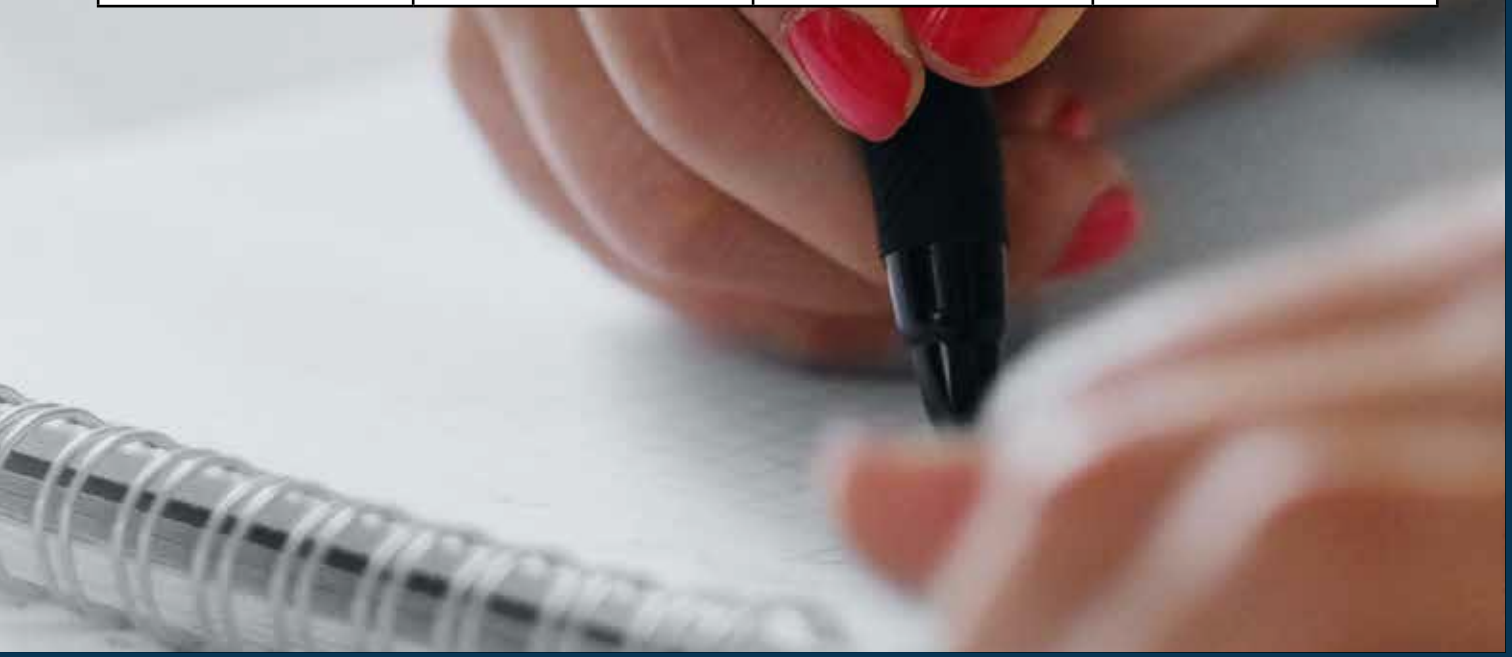
- Research Project

Semester 10

- Research Project

Semester 8

Specialisation: 01 Tissue Engineering and Stem Cell Technology	Specialisation: 02 Clinical Research and Pharmacovigilance	Specialisation: 03 Bioinformatics and Data Science	Specialisation: 04 Agriculture and Food Technology
Biomaterials and Mechanobiology	Clinical Data Science	Applications of R and MATLAB in computational biology	Agrometeorology and crop weather forecasting
Regulatory Affairs in Tissue Engineering and Stem Cell Technology	Clinical Trial Management and Drug regulatory affairs	Computational Drug Discovery and Development	Instrumentation and process control in food and dairy technology
Stem Cells and Translational Medicine	Medical Writing and Coding	Phylogenetic Analysis	National and International standards for food quality assurance
Translation of Nanobiotechnology in Medicine	Pharmacovigilance	Programming Languages in Bioinformatics	Post-harvest processes and technology
Tissue Engineering and Stem Cell Technology Lab 02	Clinical Research and Pharmacovigilance Lab 02	Bioinformatics and Data Science Lab 02 (Data Science Laboratory)	Agriculture and Food Technology Lab 02



Programme Electives and Tracks

	Track 1	Track 2	Track 3	Track 4
Semester	**Bioinformatics and Data analysis**	**Tissue engineering and stem cell technology**	**Clinical Research and Pharmacovigilance**	**Agriculture and Food Technology**
Semester V	Introduction to Health Informatics	Molecular Diagnostics	Pharmaceutical Toxicology	Soil and Water Management
Semester VI	Introduction to Computing Languages	Metabolomics in Health and Disease	Good Clinical Practices	Agri-Food Management and Economics
Semester VII	Biological Database Architecture	Experimental and Transgenic Animal Models	Systematic Review and Meta-analysis	Principles of food preservation and technology for fruits, vegetables, meat, fish and poultry
Semester VIII	Mobile Applications Development for Android Platform	Drug Delivery System	Advanced Programming and Simulation	Omics Technologies for Agri-Food Technology

M.Sc Biotechnology

Duration: **2 Years**

Fee: **INR 1,30,000/- PA**

The M.Sc in Biotechnology programme at MIT-WPU encompasses a diverse array of subjects, including biochemistry, genomics, proteomics, stem cell technology, nanobiotechnology, biomimetics, bioanalytics, pharmacovigilance, computational biology, and systems and synthetic biology. The meticulously crafted course structure is developed in close collaboration with prominent researchers, biomedical experts, clinical practitioners, and industrial leaders. This collaborative effort ensures that students acquire the specialised knowledge and practical skills essential for excelling in the dynamic field of biotechnology. This programme is precisely designed to equip students for rewarding careers in healthcare, biopharmaceuticals, industrial applications, and related sectors. As a vital component of the programme, students engage in two research projects, working alongside esteemed researchers from our school and collaborative organisations. This hands-on research experience not only provides valuable insights but also fosters the development of industry-relevant and academic skills. Through a holistic approach that integrates academics, internships, and entrepreneurial opportunities, the M.Sc in Biotechnology programme empowers students to emerge as well-rounded professionals poised for success in the ever-evolving landscape of biotechnology.

The programme offer specialisation tracks in

1. Bioinformatics
2. Medical Biotechnology
3. Industrial Biotechnology
4. Bioprocess Engineering

Semester 1

- Biochemistry
- Microbiology
- Molecular and Cell Biology
- Biostatistics
- Biotechnology Lab – 01
- Research Methodology
- Programme Elective-01
- Scientific Studies of Mind, Matter, Spirit and Consciousness
- Yoga

Programme Electives for Specialisation Tracks

Bioinformatics	Medical Biotechnology	Industrial Biotechnology	Bioprocess Engineering
Programming languages for Biologists	Stem cell biology	Plant Biotechnology	Enzyme Technology

Semester 2

- Bioanalytical Techniques
- Bioprocess Technology
- Biotechnology Lab – 02
- Genomics & Genetic Engineering
- Immunology
- Programme Elective-02
- Peace Building: Global Initiatives

Programme Electives for Specialisation Tracks

Bioinformatics	Medical Biotechnology	Industrial Biotechnology	Bioprocess Engineering
Design and analysis of algorithms in biology	Tissue engineering and Biomaterials	Food Biotechnology	Advanced Bioprocess Technology

Semester 3

- Computational Biology & Bioinformatics
- Regenerative Biology & Stem Cell Technology
- Systems and Synthetic Biology
- Programme Elective-03
- On Job Training (OJT)/Internship Project
- Biotechnology Lab-03

Programme Electives for Specialisation Tracks

Bioinformatics	Medical Biotechnology	Industrial Biotechnology	Bioprocess Engineering
Genomics and Proteomics	Cancer Biology	Pharmaceutical Biotechnology and Pharmacovigilance	Downstream Processing

Semester 4

- Bio-entrepreneurship, IPR & Bioethics
  Biomimetics & Nanobiotechnology
- Scientific Communication
- Programme Elective-04
- Project/Industrial Internship

Programme Electives for Specialisation Tracks

Bioinformatics	Medical Biotechnology	Industrial Biotechnology	Bioprocess Engineering
Computational structural Biology	Molecular Diagnostics and therapeutics	Environmental Biotechnology	Microbes for energy and fuels

M.Sc Microbiology

Duration: **2 Years**

Fee: **INR 1,05,000/- PA**

The M.Sc Microbiology programme at MIT-WPU is designed to provide students with a comprehensive understanding of microbiology, including its fundamental principles, contemporary techniques, and cutting-edge research. The curriculum encompasses a wide spectrum of modules, covering microbial biotechnology, bioinformatics and data analytics, food and dairy microbiology, agricultural microbiology, brewery sciences, and food technology. In addition to the core subjects in microbiology, the programme takes a holistic approach by offering interdisciplinary courses in essential areas such as communication skills, peace and yoga, interview preparation, and research writing. These supplementary courses aim to equip students with a well-rounded skill set, preparing them not only for technical excellence but also for effective communication and professional development. This programme places a strong emphasis on practical learning and hands-on experience. In the second year, students undertake a research project and an industrial internship. These invaluable components of the programme provide students with real-world exposure, enabling them to apply their theoretical knowledge in practical settings and further develop their skills and expertise. Through this well-structured M.Sc Microbiology programme, MIT-WPU empowers students to become well-rounded professionals who are not only well-versed in microbiology but also possess the practical skills and interdisciplinary knowledge needed to excel in their careers and contribute to the field of microbiology.

The programme offers elective tracks in

1. Bioinformatics
2. Bioprocess Engineering
3. Medical Microbiology

Semester 1

- Advanced Microbiology
- Microbial Physiology and Metabolism
- Biostatistics
- Evolution and Ecology
- Microbial Technology Lab-01
- Research Methodology
- Programme Elective-01
- Scientific Studies of Mind, Matter, Spirit and Consciousness
- Yoga

Programme Electives for Specialisation Tracks

Bioinformatics	Bioprocess Engineering	Medical Microbiology
Programming languages for Biologists	Tissue engineering and Biomaterials	Immunology and Immunotechnology

Semester 2

- Bioanalytical Techniques
- Bioinformatics and Omics Technologies
- Bioprocess Technology
- Environmental Microorganisms: Scope and Applications
- Microbial Genetics and Gene Manipulation
- Microbial Technology Lab-02
- Programme Elective-02
- Peace Building: Global Initiatives

Programme Electives for Specialisation Tracks

Bioinformatics	Bioprocess Engineering	Medical Microbiology
Design and Analysis of Algorithms in Biology	Advanced Bioprocess Technology	IMicrobial Pathogenesis

Semester 3

- Industrial and Food Microbiology
- Nanobiotechnology and Biomimetics
- Synthetic Biology and Metabolic Engineering
- Programme Elective-03
- On Job Training (OJT)/Internship Project

Programme Electives for Specialisation Tracks

Bioinformatics	Bioprocess Engineering	Medical Microbiology
Genomics and Proteomics	Downstream Processing	Molecular Diagnostics and Clinical Research

Semester 4

- Bio-entrepreneurship, IPR and Bioethics
- Microbial Biotechnology
- Scientific Communication
- Programme Elective-04
- Project / Industrial Internship

Programme Electives for Specialisation Tracks

Bioinformatics	Bioprocess Engineering	Medical Microbiology
Computational Structural Biology	Microbes for Energy and Fuels	Infectious diseases and therapy

Career Opportunities in the Field of Biotechnology and Microbiology

- Professionals in Biotechnology Industries
- Biomedical Research Assistants
- Environmental Microbiologists
- Quality Assurance Technologists
- Clinical and Veterinary Microbiologists
- Medical Technologist
- Biochemists
- Biotechnologists
- Process Development Scientists
- Biomanufacturing Specialists
- Biotechnology Researchers
- Regulatory Affairs Associates
- Scientists in Government and Private Industries
- Quality Controllers
- Biotechnology Business Consultants
- Biotechnology Process Analysts
- Sales Managers
- Entrepreneurs in emerging domains of life sciences
- Academicians

Doctoral Programmes in Biochemistry, Microbiology, and Biotechnology

The Department of Biosciences and Technology offers prestigious research programmes leading to the coveted Doctor of Philosophy (Ph.D.) degree in three distinct disciplines:

- Biotechnology
- Biochemistry
- Microbiology

These meticulously designed Ph.D. programmes serve as a robust foundation for aspiring research scholars, preparing them for rewarding careers in both academia and industry. Spanning a duration of 3 to 6 years, these programmes are dedicated to fostering innovation and advancing research excellence in the field of biology and its related domains. The initial six months of the Ph.D. journey are dedicated to coursework and intensive training, aimed at honing the scientific acumen of students and fostering interdisciplinary research perspectives.

Full-time Ph.D. scholars are entitled to monthly fellowships in accordance with prevailing government regulations. Throughout the entirety of the Ph.D. programme, students benefit from access to an extensive network of seasoned researchers, providing invaluable support for their academic and research development. Expert faculty within the department guide students in selecting and effectively completing their thesis topics.

Moreover, students are strongly encouraged to actively participate in national and international conferences, where they can showcase their original research papers, further enriching their academic journey. At the Department of Biosciences and Technology, the Ph.D. programmes are committed to nurturing the next generation of research leaders, empowering them to contribute significantly to the scientific community and make profound strides in their chosen fields.

The Department of Biosciences and Technology Laboratories

The Department boasts a multitude of state-of-the-art laboratories, each dedicated to specific areas of research and practical exploration.

These laboratories include:

- Microbial Culture Laboratory
- Animal Tissue Culture Laboratory
- Bioanalytical Laboratory
- Bioinformatics Laboratory
- Molecular Biology Laboratory
- Plant Biotechnology Laboratory

In addition to these well-equipped facilities, the Department of Biosciences and Technology has forged robust research collaborations at both national and international levels. Notable partners include esteemed institutions such as the Department of Biotechnology, the Department of Science and Technology at DRDO, and ICMR (Indian Council of Medical Research).

The faculty at the Department of Biosciences and Technology exhibit a diverse range of research interests, reflecting their profound expertise in various domains.

These encompass molecular microbiology, genomics, cell biology, plant biotechnology, proteomics, nanobiotechnology, biosensors, biomimetics, complexity biology, applied microbiology and biotechnology, metabolomics, biofertilizers, biocontrol, and integrated nutrient management.

Furthermore, the department's focus extends to advanced interdisciplinary translational research, delving into cutting-edge areas such as point-of-care biosensors, diagnostic tools, multiplexed detection methodology, lab-on-chip devices, nutraceuticals, and bioactive production. This broad spectrum of research interests and activities underscores the Department of biosciences and technology commitment to pushing the boundaries of scientific knowledge and driving innovation in the field.

Revvity – MITWPU Centre of Excellence for Bioimaging Technologies and Innovation

Revvity – MITWPU Centre of Excellence for Bioimaging Technologies and Innovation is the result of a collaboration between industry and academia for fostering research, development, and innovation in the field of bioimaging and biophotonics. The CoE houses state-of-the-art imaging equipment such as confocal microscopes, flow cytometer, live animal imaging, microfluidics, gene extraction and advanced imaging software. Researchers from various disciplines such as life sciences, chemistry, physics, clinicians, pathologists, AI, engineering, and computer science would collaborate on projects aimed at developing novel imaging techniques and technologies. It will also offer training programs and workshops for students, researchers, and professionals to learn about the latest imaging technologies and methodologies.

Innovation and Technology Transfer: The center would facilitate the translation of research findings into practical applications, innovation and technology transfer. Partnership with Revvity and other related industry would enable the center to leverage resources and expertise for developing cutting-edge imaging technologies and bringing them to market. The research conducted at the center would focus on addressing key challenges in biotechnology, biomedical research and healthcare. Collaboration with other centers of excellence and research institutions globally would foster exchange of ideas, sharing of resources, and advancement of the field on an international scale.

The Centre of Excellence for Bioimaging Technologies and Innovation would play a crucial role in advancing the field of bioimaging, driving innovation, and ultimately improving our understanding of biological systems and human health.

Research at Department of biosciences and Technology

Faculty at Department of Biosciences & Technology is actively involved in collaborative, consultancy, funded research and academic projects leading to productive outcomes. The scientific contributions from our faculty members are reflected from their high impact research publications, citations, patents and products they have developed. They come with rich work experience from elite and reputed institutions within India and abroad. Together with their scholars, they conduct active research in frontier areas, which frequently results in highly reputed publications in international and national journals, as well as patents. The majority of the research findings are also presented at international and national conferences. Our faculty have received research grants from prestigious government grant funding agencies like Indian Council of Medical Research (ICMR), Department of Science and Technology (DST), Department of Biotechnology, Govt of India.

Department of Biosciences & Technology encompass diverse research areas of fundamental & applied biology like molecular microbiology, genomics, cell biology, Cancer biology, Stemcell and regenerative biology, Plant biotechnology, Proteomics, Nano biotechnology, Biosensors, Biomimetics, Complexity Biology, Applied Microbiology and Biotechnology, Metabolomics, Computational biology & Bioinformatics, Biofertilizers, Biocontrol and Integrated Nutrient Management. Advanced interdisciplinary translational research in the areas of Point-of-Care biosensors, diagnostic tools, multiplexed detection methodology, Lab-on-Chip devices, nutraceuticals and bio-actives production holds prominence at DoBT.

Eligibility, Admissions, and Selection Process

M.Sc. Biotechnology and M.Sc. Microbiology

- Minimum 50% aggregate score in 3/4-year graduation from UGC approved University or equivalent (at least 45% marks, in case of Reserved Class category candidate belonging to Maharashtra State only)
- Graduation should be in B.Sc. (Biotechnology / Biochemistry / Microbiology / Botany / Zoology / Life Sciences / Biomedical Sciences / Chemistry, B.Pharm., B.Sc. Agriculture, B. Tech. (Biotechnology and related streams) with minimum 50% in Biology subject.

Integrated M.Sc. Biotechnology

- Minimum 50% aggregate score in 10+2 / Class 12th in science stream with English subject from Govt. Approved Institution or equivalent (45% for Maharashtra Reserved category candidature) or Minimum 50% aggregate score in Diploma Course in Pharmacy from Govt. Approved Institution (45% marks in case of candidates of Reserved Class categories and Persons with Disability belonging to Maharashtra State only).

*Note: All International Baccalaureate (IB) students are required to score a minimum of 24 points for six subjects.

Selection Process:

The selection process for the programmes is based on MIT-WPU CET Life Sciences 2024 & Personal Interaction score.

Scholarships

MIT-WPU offers scholarships to meritorious students based on their performance in National/State Level Entrance tests and the MIT-WPU CET Examination for the academic year 2024-25. These scholarships are applicable throughout the programme*.

Merit Scholarship Categories:

- Dr. Vishwanath Karad Merit Scholarship
- MIT-WPU Merit Scholarship
- Scholarships for Elite Sportspersons
- Scholarship for Wards of MIT-WPU/MAEER's Staff Members

*Terms and Conditions:

- Scholarships are granted on a First Come First Serve basis.
- Scholarships are awarded as fee adjustments.
- To maintain the scholarship throughout the programme, students must maintain a minimum academic score of 8.0 CGPA across all semesters, attendance of at least 80%, and a clean disciplinary record.

For more information, please visit: mitwpu.edu.in/scholarships

Department of Biosciences and Technology

Scholarship for AY 2024-25	Dr. Vishwanath Karad Scholarship (100%)	MIT-WPU Scholarship I (50%)	MIT-WPU Scholarship II (25%)
Name of programme / Specialisation	MIT-WPU CET CBT Score	MIT-WPU CET CBT Score	MIT-WPU CET CBT Score
Integrated B.Sc M.Sc in Biotechnology	90 & Above	85 & Above	80 & Above

Department of Biosciences and Technology

Scholarship for AY 2024-25	Dr. Vishwanath Karad Scholarship (100%)	MIT-WPU Scholarship I (50%)	MIT-WPU Scholarship II (25%)
Name of programme / Specialisation	MIT-WPU CET CBT Score	MIT-WPU CET CBT Score	MIT-WPU CET CBT Score
M.Sc. Microbiology	90 & Above	85 & Above	80 & Above
M.Sc. Biotechnology			

Internships & Placement: Paving Pathways to Success

The dedicated Placement Cell, which is the Centre for Industry-Academia Partnerships (CIAP) at MIT-WPU, opens doors to multiple career opportunities for graduates. With a consistent track record of high placements, the cell connects students with prestigious firms, providing career guidance and preparing them for the professional arena. Complementing this, the eight-week Summer Internship, from late April to mid-July, integrates classroom knowledge with hands-on experience. This mandatory programme propels students into professional ecosystems, providing practical insights crucial for their careers. Together, strategic placements and experiential learning define the institution's commitment to shaping well-rounded, industry-ready professionals.


Bharat Serum And Vaccines Limited
Cipla
GRG
ipca
A dose of life
IISER PUNE
praj
fmi
Future Market Insights
ncl
National Chemical Laboratory
CDFD
Kan biosys
Expanding horizons in biotechnology
Rajganga Biorefineries Pvt Ltd
Enriching sustainable Lives
L'ORÉAL
intox
an aragen company
VyasLife
GENNOVA
Reliance
LIFE SCIENCES
SERUM INSTITUTE OF INDIA
Cyrus Poonawalla Group
CADILA
PHARMACEUTICALS
LIMITED
Agharkar Research Institute

Faculty of Department of Biosciences and Technology

Pioneering Excellence at MIT-WPU

At MIT-WPU, excellence is a way of life. The Faculty of Biosciences and Technology embodies this ethos with unwavering commitment and dedication. Within its hallowed halls, a team of distinguished educators, researchers, and visionaries converge to shape the future of biotechnology, biochemistry, and microbiology. These academic stalwarts lead by example, fostering innovation, research, and holistic development in the field of life sciences.

With a legacy of pioneering excellence, the Faculty of Biosciences and Technology stands as a beacon of knowledge and discovery. Here, students are not just learners; they are future leaders, equipped with the skills, knowledge, and values to make a profound impact in the realm of biosciences and beyond. This is where pioneering excellence is not just a statement, but a living legacy.

Prof. Anup Kale
Associate Dean, FoSES,
PhD. Biochem (Nagpur Univ,
Rath Res Institute, USA)
Post.Doc. NCL, Univ. Alabama,
USA, SBIC, Singapore
Nanobiotech, biocensors and
bioimaging for tranlation to
Point-of-care diagnostics;
Experience: 17 yrs

Prof. (Dr.) Shilpa Chapadgaonkar
Programme Director
Associate Professor
Ph.D. IIT, Delhi
Bioprocess Technology,
Enzymology, Pharma BT
Experience: 16.8 yrs

Prof. (Dr.) Alex Hankey
Professor Emeritus
Ph.D. from MIT, US
Complexity Biology,
Systems Approach,
Biophysics
Experience: 50 yrs

Prof. (Dr.) Manasi Mishra
Associate Professor
Ph.D. Biotech, CSIR-NCL, Post.Doc.
EMBL Germany, IOCB, Prague,La
Trobe, Austria
Plant immunity proteins
and peptides, Synthetic biology
Experience: 10 yrs

Dr. (Mrs) Shikha Gaikwad
Assistant Professor
Ph.D. in Microbiology (GKU)
Applied Microbiology and
Biotechnology
Experience: 16 yrs

Dr. Shreeram Joglekar
Assistant Professor
Ph.D. Biotech (DIAT, DRDO)
Nanobiotech, Biochemistry,
Proteomics, Microfluidics
Experience: 7.3 yrs

Dr. Nithya N. Kutty
Assistant Professor
Ph.D. in Agri BT, IIT - KGP
Plant metabolism, Plant-microbe interactions.
Experience: 3.5 yrs

Dr. Rehan Deshmukh
Assistant Professor
Ph.D. in Biosen, BITS, Pilani
Post.Doc. IIT Madras
Biosensor development, Nanomaterials synthesis
Experience: 3.8 yrs

Dr. Neha Shintre
Assistant Professor
Ph.D. Microbiology (SPPU)
Marine microbial diversity, Natural product chemistry
Experience: 09 yrs

Dr. Mukul Godbole
Assistant Professor
Ph.D. Life Sciences, Post.Doc. ACTREC,
Cancer Biology
Experience: 9.6 yrs

Dr. Amruta Naik
Assistant Professor
Ph.D. Bionanotech, SPPU, Post.Doc. DST-WoS: A, NCCS Pune, Stem Cell Biology and Tissue Engineering
Experience: 10 yrs

Dr. Tejaswini Patchpor
Assistant Professor
Ph.D. Bioprocess Engg. SPPU, Post.Doc. UW - Madison, NCINIH USA
Bioprocess Engg. and Bioenergy
Experience: 12 yrs

Dr Arindam Deb
Ph.D. in Bioinformatics, University of Calcutta.
Awarded prestigious UGC-RFSMS fellowship, UGC, govt of India.
Experience: 10 yrs

Dr Neha Gaurao Bokey
Assistant Professor
Ph.D. Biotechnology
6 years of experience
Awarded with NIDHI—EIR fellowship from IITM HTIC MedTech Incubator.

Testimonials

Here's What Our Students Have To Say

During my time at MIT World Peace University, Pune. I had an enriching and fulfilling experience that shaped me both academically and personally. I had a transformative educational experience that combined rigorous academics with practical application. The vibrant campus environment fostered a culture of innovation and collaboration, encouraging students to explore their passions and push the boundaries of their knowledge. The faculty members at MIT WPU were not only experts in their respective fields but also dedicated mentors who provided guidance and support every step of the way. The university's emphasis on practical learning through projects, workshops, and industry interactions equipped me with the skills and confidence needed to tackle real-world challenges. Moreover, the diverse student community enriched my learning experience, exposing me to different perspectives and ideas. The university's strong industry connections and dedicated placement cell ensured that I had access to a wide range of internship and placement opportunities, ultimately preparing me for a successful career post-graduation. My journey at MIT WPU was one of growth, discovery, and lifelong learning.

- Shivam Swami
M.Sc. Industrial Microbiology
Placed at Serum Institute of India,
Batch 2022-2024

I had a great time in the department pursuing my master's program in biotechnology. My research project carried out as part of the course resulted in high impact peer review publication. I am extremely grateful to my mentor and teacher for their constant support and guidance.

- Soniya Prakash
MSc Biotechnology
Presently working IQVIA,
Pune

It has been an unforgettable experience at MIT-WPU. It has been four months since I joined college and I have learnt a lot, not just academically but in a lot of other aspects. The course Integrated Msc Biotechnology has exposed me to various topics. My doubts and queries were always welcomed by the lecturers and sometimes led to healthy discussions which made me explore other topics as well.

- Meghna Kiran
Integrated B.Sc.M.Sc.
Biotechnology


MIT-WPU

Life @ MIT-WPU

Events @ MIT-WPU

Bharatiya Chhatra Sansad

Empowering Youth for Change

A brainchild of Shri. Rahul V. Karad and flagship initiative of MIT-WPU, Bharatiya Chhatra Sansad (BCS) is a nationally recognised initiative empowering youth in India's political landscape. Serving as a non-partisan platform, BCS engages young minds in debates, discussions, and addresses by distinguished personalities, fostering awareness of the socio-political landscape. Acknowledging the contributions of young leaders, sarpanches, and activists, BCS, with participation from 25,000 institutes nationwide, empowers youth to actively shape India's future in governance and administration.

R.I.D.E.

Igniting Innovation and Entrepreneurship

R.I.D.E. stands out as a unique educational initiative by MIT-WPU, fostering entrepreneurship beyond academics. This 5-day event, attracting over 10,000 students, showcases cutting-edge research, design thinking, and innovation across diverse domains. With 100+ startups and 50 venture capital experts, R.I.D.E. provides a real-world startup context, encouraging unconventional thinking and exposing participants to transformative dynamics and market trends.

Rural Immersion Programme

The rural immersion programme of MIT-WPU provides students with a unique educational experience. Through village visits, students engage in hands-on projects such as optimising irrigation, water conservation, waste recycling, and solar power integration. This immersive learning develop critical thinking, problem-solving skills, and community awareness, fostering a profound understanding of rural dynamics and innovative solutions.

Other MIT-WPU Events

- Design Xpo
- Aarohan
- Kala Mehfil
- Hackathon
- National Conference on Media and Journalism
- Abhivyakti
- TEXEPHYR
- Tesla
- Techogenesis
- RoboCon
- Science Expo
- World Parliament of Science, Religion and Philosophy
- Bharat Asmita National Awards
- National Women's Parliament
- International Symposium on Law and Peace
- Vidhi-Manthan
- Peace Marathon
- Sports Summit
- Social Leadership Development Programme (SLDP)

And many more...

MIT-WPU Student Clubs

MIT-WPU is a vibrant hub for student involvement, boasting over 100 clubs spanning cultural, social, sports, co-curricular, and NCC/NSS categories. Such student-led clubs provide students with a platform for active participation, connection-building, and leadership skills development.

- The Innovation Club is a hub for entrepreneurial and innovative events and workshops
- The Art and Photography Club brings together aspiring artists for creative expression
- The Sports Club, orchestrating spirited sporting events and activities
- The Cultural Club celebrates diversity and fosters cultural exchange
- Aatman- The sole Mental Health Club led by Psychology students, promoting well-being
- Team Dart- A motorsports team participating annually in the Rally Car Design Challenge (RCDC)

These clubs excel in national and international competitions, amplifying the dynamic MIT-WPU experience, nurturing leadership, and fostering holistic personal growth. Active participation in these diverse student clubs empowers students to optimise their time, enhance their skills, and contribute purposefully to the community.

CHALCHITRA

aatman

NINOX

Peace Studies: Fostering Holistic Growth

Understanding the importance of inner and social peace and conflict management skills is crucial in today's world. MIT World Peace University has adopted UNESCO's core vision of 'Building Peace in the Minds of Young Men and Women' as its guiding ethos.

The university offers a mandatory course of peace studies that lays the foundation for spiritual peace and harmony. It explores new ideas and practices from various cultures to tackle the challenges of global peace and sustainable development. The university also plans to introduce an advanced postgraduate degree programme in Peacebuilding and Conflict Management that offers state-of-the-art learning opportunities to study traditional and contemporary pedagogies of peacebuilding and conflict management. The main objective of this course is to prepare students to become agents of social change and genuine global citizens. It trains them in non-violent communication to promote peace and prevent violence in communities and workplaces. Furthermore, the peace studies module also acquaints students with diverse yoga practices that enrich their cognitive prowess and information base, refining critical thinking and enhancing their overall personality. This interdisciplinary course, developed with input from scholars and practitioners worldwide, helps students build knowledge of India's spiritual and cultural ethos. Additionally, the course covers essential conflict management knowledge and skills that are in high demand in today's corporations.

Admission Process

The admission process at MIT-WPU is thoughtfully designed to identify and nurture talented individuals, creating a vibrant and diverse community of learners. This section will guide prospective students through the necessary steps and requirements to become part of the MIT-WPU family, where a commitment to knowledge, innovation, and personal growth is at the forefront of our educational mission.

1. Start application at admissions.mitwpu.edu.in by filling enquiry
2. Receive Login ID and Password
3. Fill Application Form and submit form till last page (Pay application fees for entrance examination- Rs.1500)
4. Receive relevant Link for MIT-WPU CET process
5. Appear for MIT-WPU CET process (Date will reflect on Student Dashboard/Website)
6. Check result on Application Student Dashboard, once results are declared (Dates notified on email)
7. Receive provisional offer of admission (if selected, on registered email)
8. Complete Programme Fee Payment (1st Instalment)
9. Complete all sections of Registration Portal (Payment/Personal/ Education/Documents)
10. Receive Student PRN (Permanent Registration Number) on registered email
11. Original Document Submission
12. Welcome to MIT-WPU!

MIT-WPU
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Dr. Vishwanath Karad
MIT WORLD PEACE UNIVERSITY | PUNE
TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

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WhatsApp: +91 9881492848 (Message only)
Email: admissions@mitwpu.edu.in
Website: mitwpu.edu.in
Address: MIT-WPU, Kothrud, Pune.

Scan to Apply