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

MIT-WPU
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Faculty of Engineering
and Technology

B.Tech

Education as it should be
For Mind, Body and Soul

2023 - 24

+ Department of Civil Engineering
+ Civil Engineering in Smart Infrastructure & Construction
+ Department of Mechanical Engineering
+ Mechanical Engineering in Robotics and Automation
+ Department of Chemical Engineering
+ Bioengineering
+ Department of Material Science Engineering
+ Department of Electronics and Electrical Engineering
+ Electronics and Communication Engineering
+ B. Tech Electronics & Communication Engineering (Artificial Intelligence and Machine Learning)
+ Electrical & Computer Engineering
+ Department of Computer Engineering and Technology
+ B.Tech Computer Engineering and Technology
+ CSE with specialization in Artificial Intelligence & Data Science
+ B.Tech Computer Science and Engineering with specialization in Computer Science and Business Systems (CSBS)
+ CSE with specialization in Cyber Security & Forensics
+ Department of Petroleum Engineering
+ B. Tech Petroleum Engineering (Artificial Intelligence & Machine Learning)
+ B.Tech (Direct Lateral Entry in Second Year) - After 3 Years of Diploma in Engineering

REACH US @

WE LIVE
IN AN ERA OF
CREATIVE
PROGRESS

MIT-WPU School of
Engineering and Technology

With a rich legacy of 40 years in fostering world-class academic excellence and over 100,000 alumni across the globe, MIT World Peace University is one of the premier centers of higher learning in India.

The Faculty of Engineering and Technology at MIT-WPU provides an ideal blend of practical knowledge with problem-based, experiential and collaborative learning. The academic fraternity of MIT-WPU is highly experienced and prides itself on its strong industry-academia connections that enable students to acquire the best theoretical knowledge with proper industry exposure through application-oriented pedagogies, guest lectures, seminars, workshops, national and international tours, and more. Students also gain relevant experience from multiple Capstone Projects that focus on brainstorming and problem-solving, encouraging innovation at every step. Moreover, the Centers of Excellence in collaboration with multiple MNC's prepare students for bright careers ahead.

Highlights

- Case-based learning pedagogy
- Hands-on training in technologies and tools like iOS Training using Swift, Mobile Application Development (using Kotlin), Full stack Development, Internet Technologies, Internet of Things, Data Science, Cyber Security, etc.
- Industry visits, guest lectures, seminars, and workshops by eminent researchers and industry practitioners from Cybage, Inteliment, Xpansion International, Barclays, CISCO among others
- Minor in Computer Engineering for non-Computer Branches for a competitive edge and added expertise
- State-of-the-art lab facilities equipped
- Dedicated Centre for Industry-Academia partnerships for internship and placement assistance
- Skill enhancement courses such as business communication, effective presentation and more
- Six-month industry internship for work experience
- MoUs with 231+ corporates for training, research, and development
- Encouraging entrepreneurship in students through funding, mentoring, and network connection in MIT - Pune Technology Business Incubator (TBI)
- National and international immersion programmes

Dr. Dinesh Seth

Ph.D, ME, BE
Professor & Dean,
Faculty of Engineering and Technology

Dean's Message

Dear Students and Parents,

Having won accolades nationally, evident from our NIRF and TIMES Rankings, we are striving hard to be recognized at the international level as well. In this endeavor, 'Industry-Readiness at The Global Level" and "Research & Innovation" are our key focus areas.

There is a huge demand for industry-ready manpower that is conversant with the latest technologies adopted by the industry. Therefore, it is necessary, as academicians, that we contribute to the growth of our nation by grooming professionals, who are conversant with the current advances and practices in the industry.

Building a strong industry-academia connection is a priority for the Faculty of Engineering and Technology. My team of faculty members is continuously revising the engineering curriculum in consultation with the top industry experts. Keeping the latest technological advancements in mind, we are introducing the following important courses in our B. Tech curriculum for the benefit of all students enrolled in engineering, irrespective of their chosen branch in engineering: Python Programming, Basic IoT Laboratory, Data Science for Engineers, Artificial Intelligence and Machine Learning, and Probability and Statistics.

To add to this significant change in our curriculum, the Faculty of Engineering and Technology has done another path-breaking change in the structure of its engineering education with the introduction of a Minor in Computer Science for all engineering students, except for those already pursuing Computer Science or Computer Engineering. This change has been made in view of the surge in demand for professionals with a background in Computer Engineering along with domain knowledge of other subjects in fields like Civil, Chemical, Mechanical, Polymer, etc.

I firmly believe that our nation needs research-oriented education that pushes our young minds toward innovation that can provide solutions to real-life problems. This will truly make the dream of Atma Nirbhar Bharat a reality.

As the Dean of the Faculty of Engineering and Technology, providing infrastructural support and encouragement to my team of faculty members, along with their bright young engineering students, is a priority for me. It gives me immense pleasure to inform you that this team is currently working on a number of innovative, interdisciplinary projects across various domains.

With the above-mentioned impactful changes that align us further with the industry and with innovative practices, I am confident that the Faculty of Engineering and Technology at MIT-WPU will produce global professionals, leaders and lifelong learners with holistic personalities, who will contribute to the well-being of mankind.

Department of
Civil Engineering

The Department of Civil Engineering at MIT-WPU is committed to creating ethical civil engineers of the future who are well-versed in planning, conceiving, designing, building, monitoring, operating, and maintaining infrastructure, transportation, and public utility projects. Our students develop an aptitude for research and a keen knowledge of various civil engineering materials and learn to integrate them into developing infrastructure which effectively meets the users' objectives and needs. The two B.Tech programmes offered by the Department build a solid foundation in the domain of Civil Engineering and instill analytical, technical, professional & management skills in our students.

Let Your Passion
Be your Career

Civil Engineering

The B.Tech Civil Engineering programme at MIT-WPU trains our students to design and develop a wide variety of infrastructural facilities through interdisciplinary knowledge of mathematics, physics, mechanics, geotechnics, materials science, hydraulics, and statistical analysis. The students are trained to apply the knowledge of engineering and management principles to govern a project in a multidisciplinary environment while considering environmental, legal, financial, and ethical constraints. The students are exposed to design thinking and developing critical problem-solving abilities in the field of civil engineering. They learn to apply their knowledge through multiple hands-on projects, assignments, and internships in industry-oriented fields like sub-sea engineering, structural engineering, and construction management. These projects and internships make the students ready to step confidently into the industry ecosystem.

Core Specializations

- Infrastructure Construction Engineering & Management

- Structural Analysis & Design Materials

- Geotechnical and Foundation Engineering

- Transportation (Roads, Bridges, Railway, Airport, Docks, and Harbors)

- Environmental Engineering
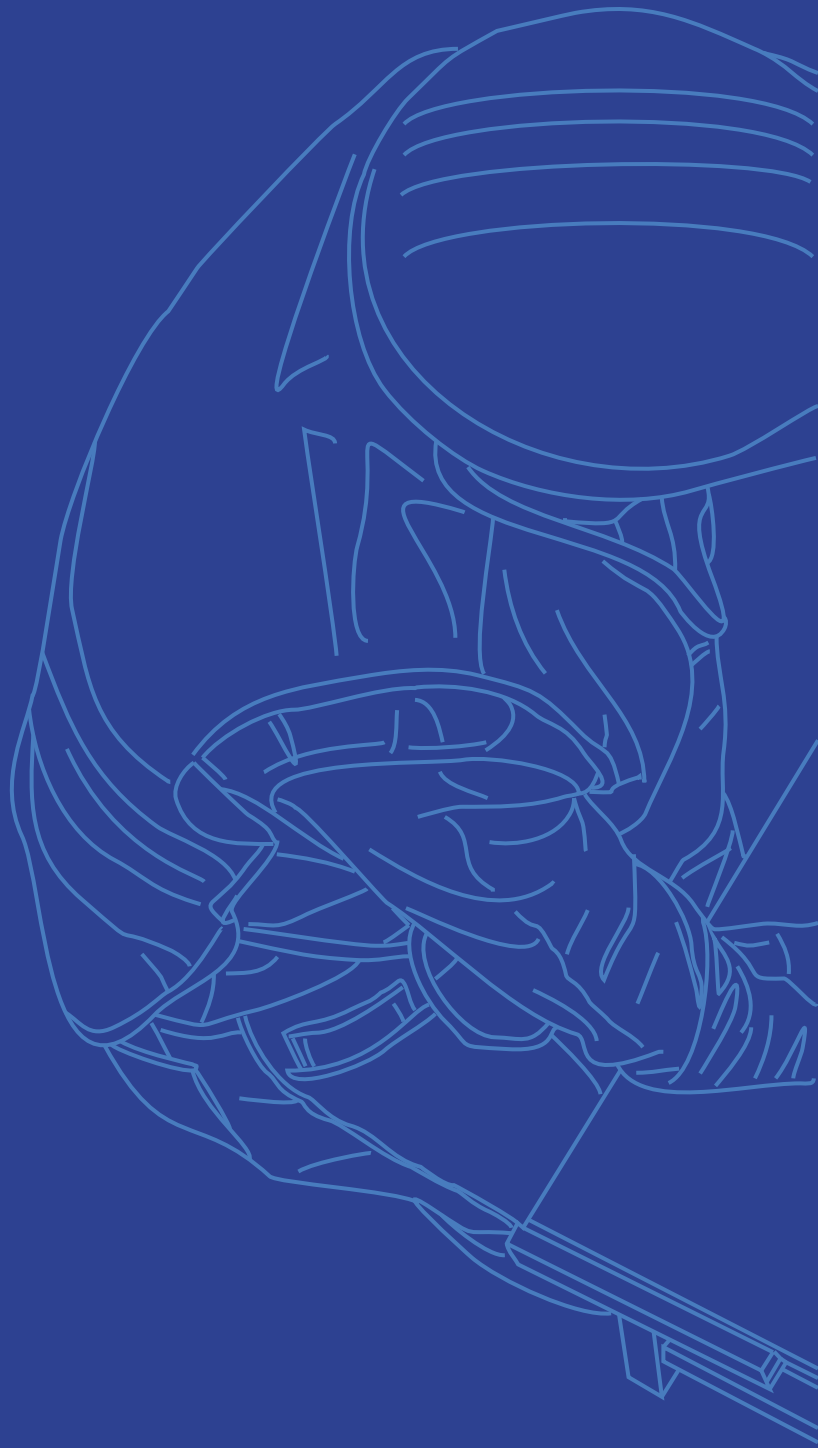
The Department of Civil Engineering has a dedicated Centre of Excellence for `Innovative Design and Construction Technologies', in collaboration with the Building Science department of the Politecnico De Milano of Italy.

The Department also offers a collaborative programme with Burton and South Derbyshire College (BSDC), UK

Department has signed Memorandums of Understanding (MoUs) for collaborative research with organizations like Pune Construction Engineering Research Foundation (PCERF), Builders Association of India (BAI), KL Structures USA, BSDC College UK., Aberdeen University, AKER solutions Pune, Ajay Kadam Associates, CWPRS, among others.

Active MoUs with organizations like PCERF IGS. IBE. BAL KL Structures USA, BSDC College UK, Plymouth University UK, AKER Solutions, and more facilitate collaborative research opportunities for our students.

The Department is funded by the MODROB scheme to assess the seismic response of various infrastructures. It facilitates two-dimensional earthquake response and simulates all major earthquake situations from past centuries.
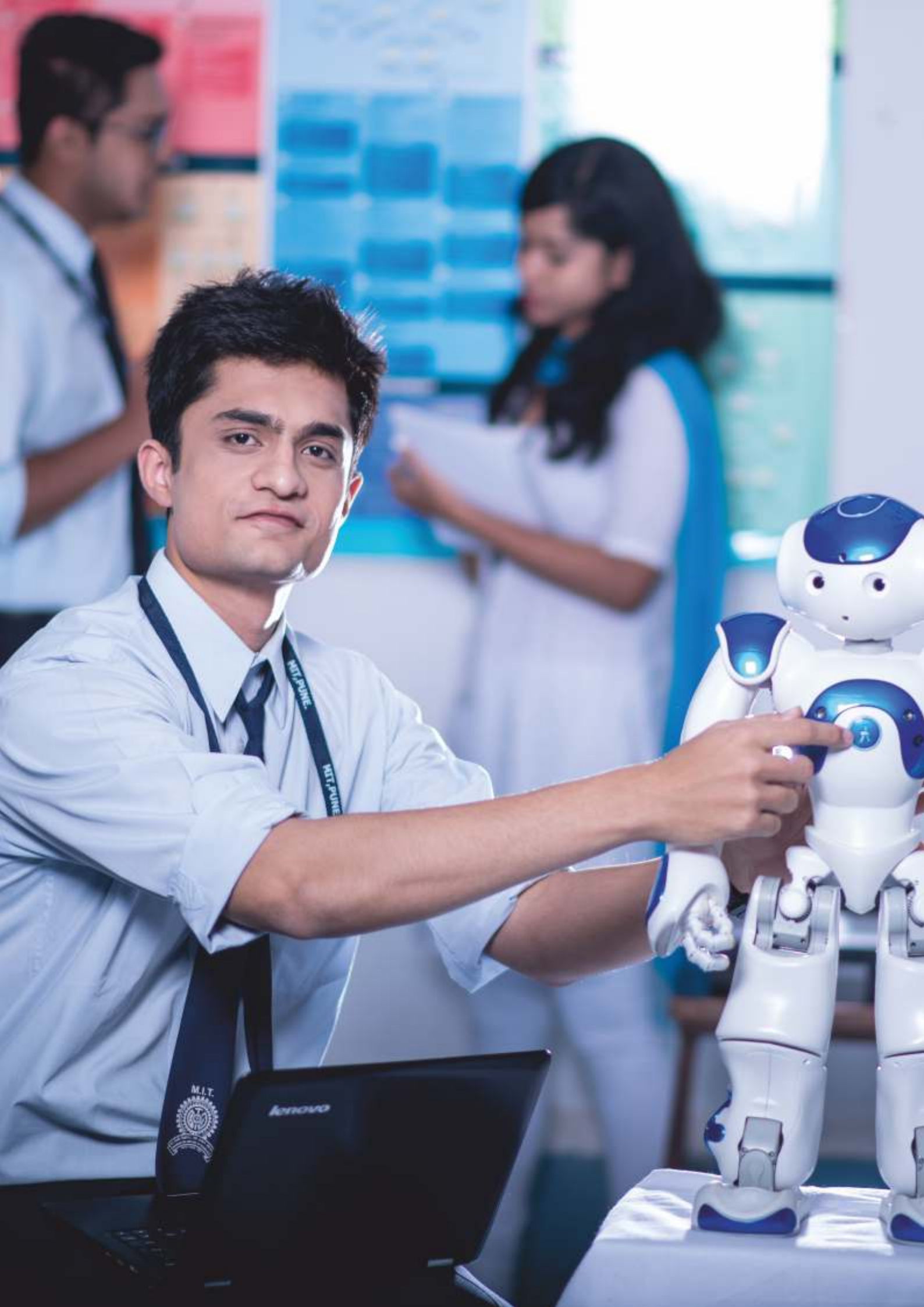
Civil Engineering
(Smart Infrastructure & Construction)

The B.Tech in Civil Engineering in Smart Infrastructure and Construction programme at MIT-WPU trains students to combine physical infrastructure assets and construction processes with digital technologies-also termed smart technologies to construct infrastructures that effectively meet the user's requirements. The students learn to utilise smart technologies like sensors and citizen science, actuators, data transmission, the internet of things, big data analytics, data visualization, and blockchain for effective infrastructure management.

The course curriculum of this specialised course includes Artificial Intelligence and Machine Learning (AI & ML), data science, dimensional building modeling and simulation, drone technology, and more. The students who complete the B.Tech course make successful careers as Site Engineers, Structural Consultants, Construction Management Consultants, Project Managers, Government Engineers post-IES, JE Surveying consultants, etc.

Core Specializations

- Intelligent Transport System

- Sustainable Construction Materials & Management

- Intelligent Irrigation Technologies

- Robotics & Automation in Civil Construction

STUDY ABROAD OPPORTUNITY (Accelerated Masters Programme)

The students of the Department of Civil Engineering at MIT-WPU get the pathway to complete their Master's degree from Nottingham Trent University, UK in a single year. They can choose from one of the following programmes offered by NTU's School of Architecture, Design, and Built Environment.

- M.Sc. in Construction Management

- M.Sc in Structural Engineering with Management

- M.Sc in Project Management (Construction)

- M.Sc in Structural Engineering with Materials

- M.Sc in Quantity Surveying

- M.Sc in Civil Engineering

Let Your Passion
Be your Career

Department of Mechanical Engineering

Mechanical Engineering involves the design, development, and manufacturing of products, systems, and processes in a wide range of sectors like automation, aerospace, conventional and non-conventional power generation, robotics, biomedicine, and more.

The Department of Mechanical Engineering at MIT-WPU offers world-class theoretical education and hands-on training in various machinery, equipment, and software. Students learn to develop sustainable solutions to a variety of real-world industrial and societal problems within the constraints of the economy and environment. The department aims to produce ethical engineers who can meet the ever-changing needs of society and build smarter machines for the future. The students can opt for flourishing careers in the fields of manufacturing, automotive, maintenance, control and instrumentation, and more.

The Department boasts specialised laboratories including Tribology, Noise Vibration Harshness, Advanced Material Testing and characterization, Renewable Energy, Advanced Heat Transfer, Refrigeration Research laboratory, Computational Fluid Dynamics, E-Vehicle and Mobility Laboratory, Advanced Manufacturing Engineering Laboratory, Biomaterials Laboratory, Advanced Additive Manufacturing Laboratory, Research Software Laboratory, and Robotics-Automation Laboratory.
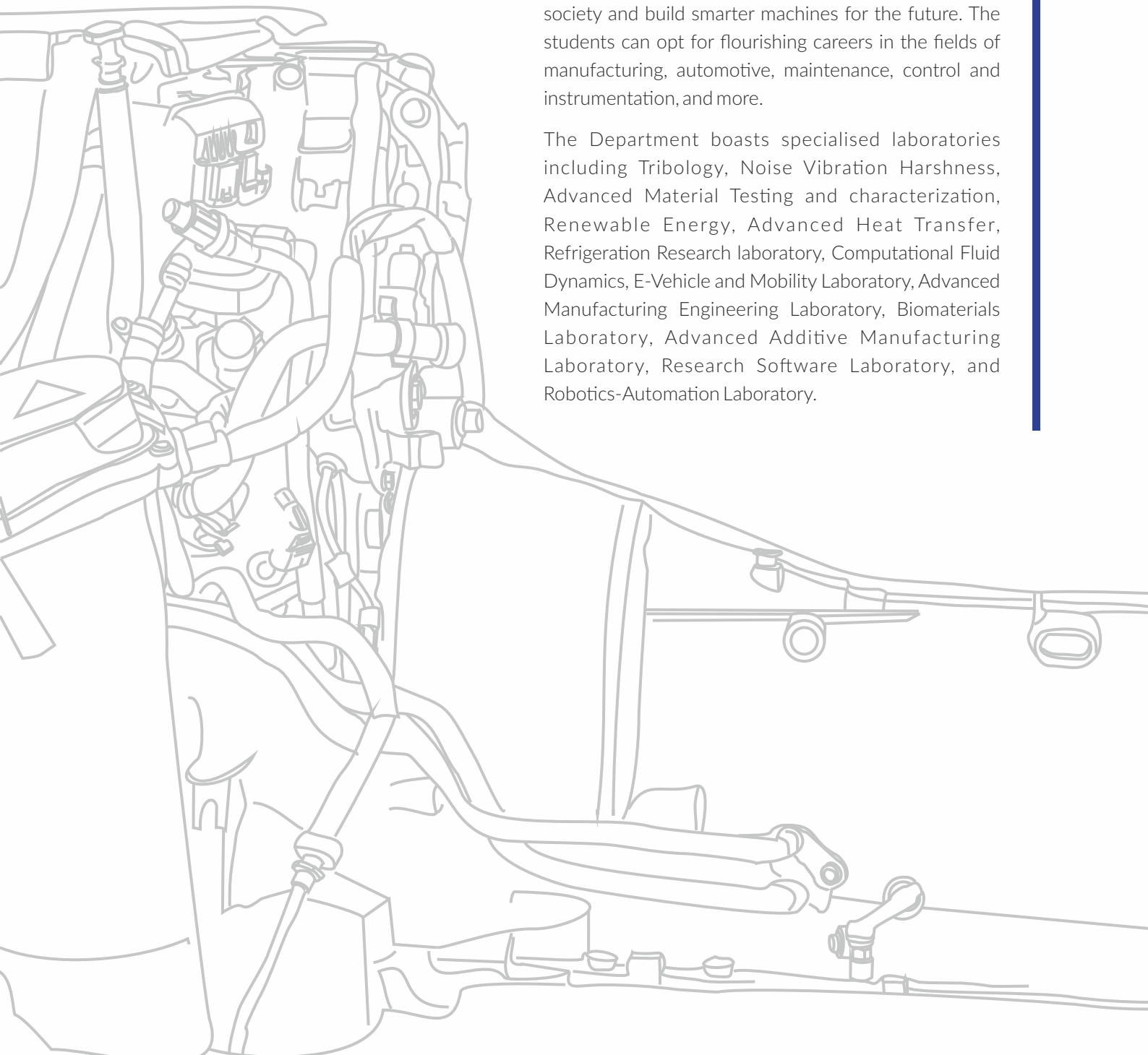
Mechanical Engineering

Mechanical engineers design numerous devices of everyday utility like batteries, athletic equipment, medical devices, personal computers, air conditioners, automobile engines, and electric power plants. The B.Tech in Mechanical Engineering programme at MIT-WPU trains students to design, manufacture and maintain complex mechanical systems in a variety of fields like E-mobility, Biomedicine, Aircraft, Energy, etc. The students are taught via research and industry projects along with industry tours and rural immersion programmes. They can find opportunities in a variety of domains like manufacturing, automation, industry, the internet of things, and artificial intelligence.

Core Specializations

- Design and Simulation
- Robotics and Automation
- Energy
- Manufacturing and Automation
- Automotive Engineering

OUR CENTRES OF EXCELLENCE

The Technology & Visualization Centre of Excellence in association with Tata Technologies Pvt. Ltd. was established at the Department of Mechanical Engineering, MIT-WPU in October 2019. Our students are trained in advanced software platforms like Hyperworks, NASTRAN. And Abaqus among others in this CoE.

The Centre of Excellence for Advanced Manufacturing Engineering with state-of-the-art manufacturing facilities in line with Industry 4.0 was established in October 2019 at the Department in association with Tata Technologies Pvt. Ltd. The centre is equipped with an advanced 3D Printing machine, industrial robots, laser cutting machine, and other hi-tech pieces of equipment. Our students gain sound training in these pieces of equipment through various hands-on projects throughout their B.Tech degree.

The Micro-Forming Research Center was established at the Department of Mechanical Engineering, MIT-WPU in collaboration with ARDB DRDO, New Delhi in November 2020. This center provides opportunities for students to carry out investigations on micro-forming on various grades of materials for aerospace, automotive, and biomedical applications.

**A career
that is
sparkling
with
opportunities**
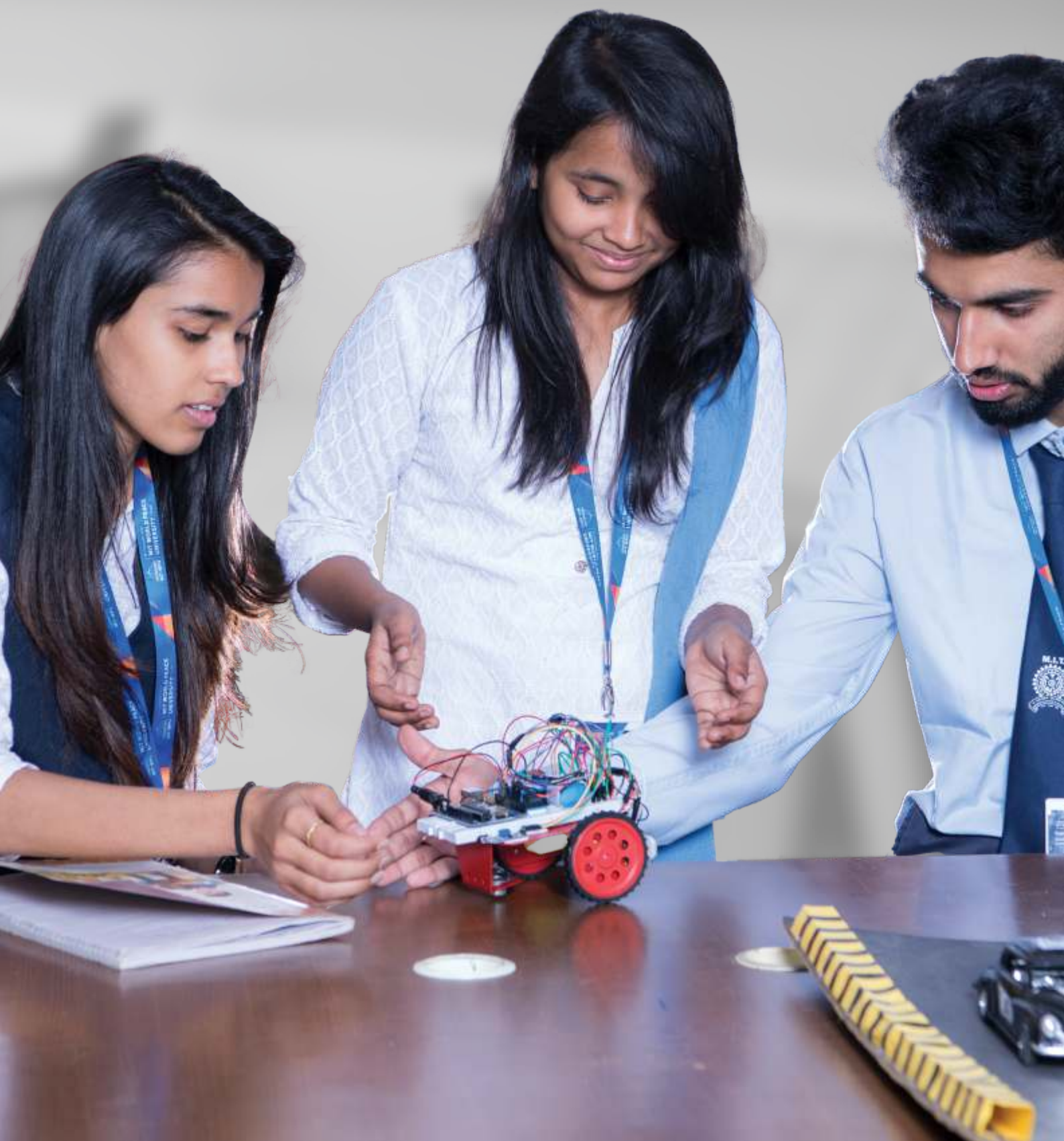
Mechanical Engineering in Robotics and Automation

The B.Tech Mechanical Engineering programme in Robotics and Automation is an interdisciplinary programme that cumulates the knowledge of mechanical, electronics, robotics, and computer science. The programme trains the students in the design and development of robots and intelligent control systems. Students learn to build and customize robotic components by integrating design tasks, algorithms, and control. They are trained to solve real-life industrial problems in automation by applying the principles of electromechanical and computer engineering. They can work in varied domains like industrial automation, manufacturing, mining, aerospace, healthcare, defense, etc.

Core Specialisations

- Mechanical Design & Simulation

- Control Engineering

- Materials, Manufacturing & Automation

- IoT & Artificial Intelligence

- Robot System Building

The success of MIT-WPU in ABU Robocon

Robocon is a contest organized by Asia Pacific Broadcasting Union (ABU) and its member countries. The MIT-WPU team has participated in this competition since 2008 and represented India on many international platforms. MIT-WPU's tech team has to its name the highest rank secured by any Indian team- 5th International Position in the year 2012. MIT-WPU's team has qualified 5 times at the international level to date. The team of students from MIT-WPU's DoME won the competition at the national level and represented India on the international platform in Fiji in 2020.

Research and Innovations

• IP Australia on behalf of the Australian government has granted six patents to faculties of DoME

• DoME also has 18 patents from the Indian Patent Office to its credit.

• The Department has to its name over 500 research papers, with 2000 citations, and research funding of more than 1 crore

Driving the
future
world of
Robotics &
Automation

Department of
Chemical Engineering

The Department of Chemical Engineering at MIT-WPU offers the perfect blend of experimental research, industrial training, and experiential projects to train students in industry-relevant fields like Data Analytics for Predictive Process Solutions, Smart Manufacturing Technologies, Process Automation, and Control, Process Modeling Simulation and Optimization, Green Energy, Artificial Intelligence and Machine Learning, etc. The Department boasts of numerous research funding from national funding agencies which facilitate and promote research at the Department.

B.Tech in Chemical Engineering at MIT-WPU grooms students to design, develop, produce, operate and manage industrial processes that convert chemicals and materials into useful products. The programme covers key subjects like fluid mechanics, heat transfer, mass transfer, chemical design engineering, plant design, and process control. The programme equips our students to take up numerous challenging roles in several fields like pharmaceuticals, healthcare, petrochemicals, specialty chemicals, polymers, biotechnology, etc.

Core Specialisations

- Water and Wastewater Treatment
- Polymer Technology
- Biochemical Engineering
- Chemical Process Modeling and Simulation
- Refining and Petrochemical Technology

Achievements & Awards

The Department of Chemical Engineering, MIT-WPU is associated with the international AIChE (American Institute of Chemical Engineers) Student Chapter. This student chapter has won the Global Outstanding Student Chapter Award for 3 consecutive years 2019, 2020, and 2021.

The department has to its name several prestigious awards, namely:

- Donald F. Othmer Sophomore Academic Excellence Award presented by AIChE
- AIChE- Southern Asia Regional Liaison
- International Position of Regional Liaison at the Executive Student Committee- AIChE
- Freshman Recognition Award by AIChE
- Project Based Learning hackathon by IUCEE. (Indo Universal Collaboration for Engineering Education)

This student chapter also helps the students to effectively engage in co-curricular and social activities which develop communication skills, team-building skills, and leadership skills among our students.

Bioengineering

The field of bioengineering combines the best of biology and engineering to advance research and innovations in human healthcare. The B.Tech in Bioengineering is a multidisciplinary programme that integrates principles of biological, physical, chemical, mathematics, and life sciences along with different aspects of chemical, mechanical, electrical, and computer engineering. The cirriculum of the programme covers a number of areas of bioengineering like bioinformatics, biomechanics, bioenergy, bionanotechnology, biopolymers, and biomedical electronics. Students can become microbiologists, biochemists, research analysts, biomedical engineers, project managers, biomedical managers, and biomedical technicians after completing the programme.

Core Specializations

- Biomechanics
- Biomedical Instrumentation
- Bioprocess Engineering
- Bioinformatics
- Genetic Engineering

Department of
Electronics and
Electrical Engineering

Electronic and electrical engineering is concerned with the practical application of electricity, its generation, transmission, and distribution. It deals with the real-time problems of operation, maintenance, and control of power systems and electrical machines. At the Department of Electronics and Electrical Engineering, specially curated programmes are taught in tandem with critical industry requirements. Hands-on projects, industry visits, and internships organized by the Department prepare students to enter the professional world confidently.

Electronics and Communication Engineering

The B.Tech Electronics and Communications Engineering at MIT-WPU acquaints the students with the concepts, technologies, hardware and software utilised in domains of telecommunications, electronics, and energy. Equipped with the knowledge of latest tools and software, our students learn to tackle the challenges in research and development of electronic materials, devices and circuits, microcontrollers and their interfacing devices, communication technologies, etc. With the drastic growth in electronics, communication, and computing in the past three decades, electronics and communication engineers find opportunities in multiple sectors like automation, control, core manufacturing, transport, water, food processing, pharmaceuticals, disaster management, smart cities etc.

Core Specializations

- Communication Engineering - IoT

- Signal and Image Processing – Computer Vision

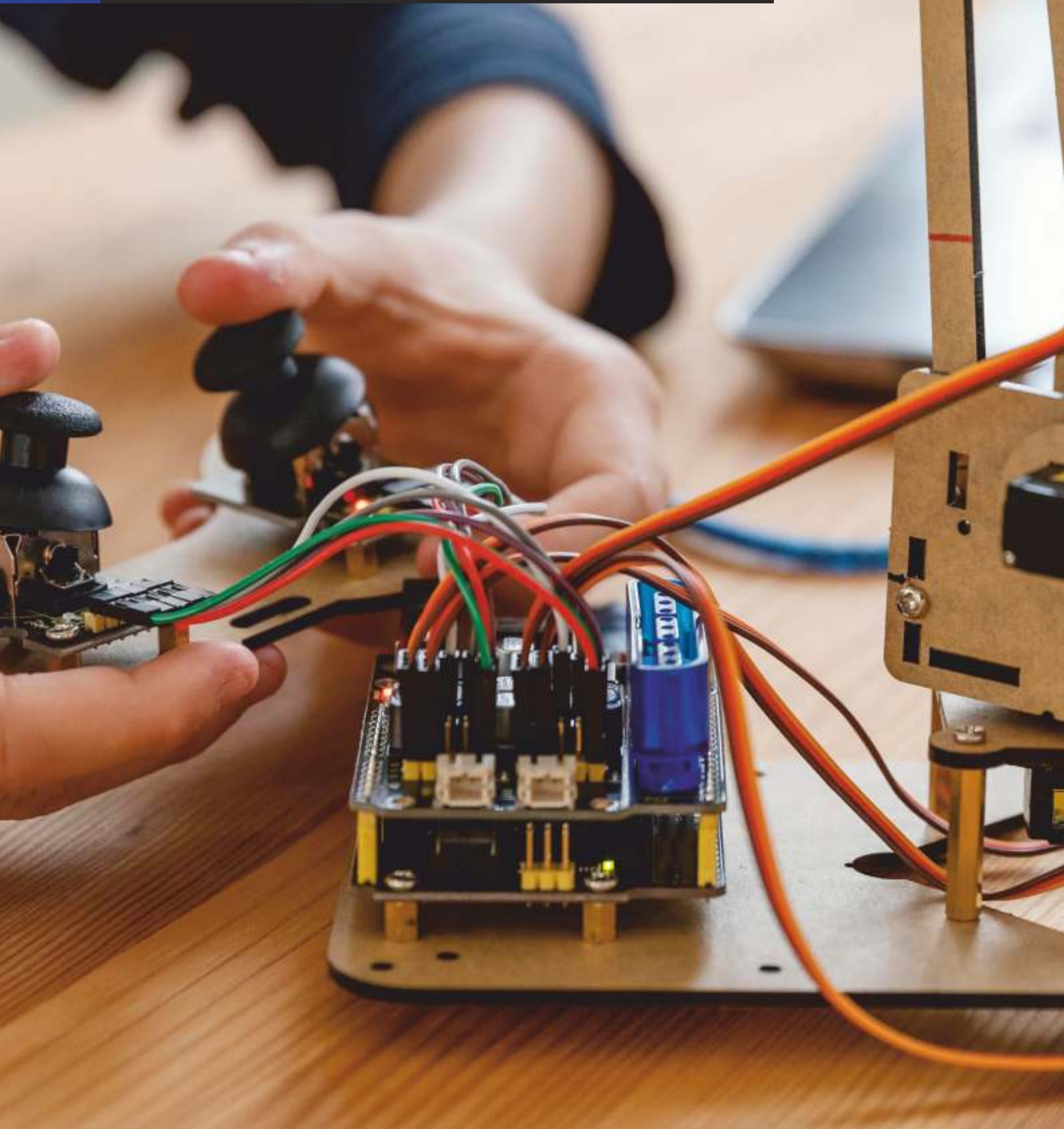- Artificial Intelligence

- VLSI & Embedded

- Applied Electronics

Achievements in Research

The Department has received funds over Rs 2 Crore from DST and ISRO for the following projects:

- Yield Prediction and Quality Assessment of Grapes in Vineyard Using LIDAR Technology (Department of Science and Technology (DST) under the Women Scientists Scheme KIRAN)

- Design and Development of Multisensory Smart Assistive Technology for the Blind (Department of Science and Technology (DST), Govt. of India)

- Development of an Algorithm for the Analysis of Vegetation Dynamics (ISRO)

- Modification of TW3 RUS for Bone Age Assessment (Department of Science and Technology (DST), Govt. of India)

Department of
Electronics &
Communication Engineering
(Artificial Intelligence and Machine Learning)

The B. Tech Electronics & Communication Engineering (Artificial Intelligence and Machine Learning) is designed to equip our students with comprehensive knowledge of electronics and communication and AI-ML to match the current and future needs of the industry. The students learn to identify, formulate and design intelligent solutions catering to various fields like computer vision, robotics, automotive electronics, biomedical signal processing, health care, human-computer interface, and business solutions, etc. They are trained in the effective use of various tools and technologies by industry experts. The students can pursue successful careers as AI architects, Data Scientists, Business Analysts, ML engineers, Product Analysts and more after completing the degree.

Core Specializations

- Edge Intelligence

- AI in Healthcare

- AI Computing Platform

- Deep Learning Architectures

- Augmented and Virtual Reality
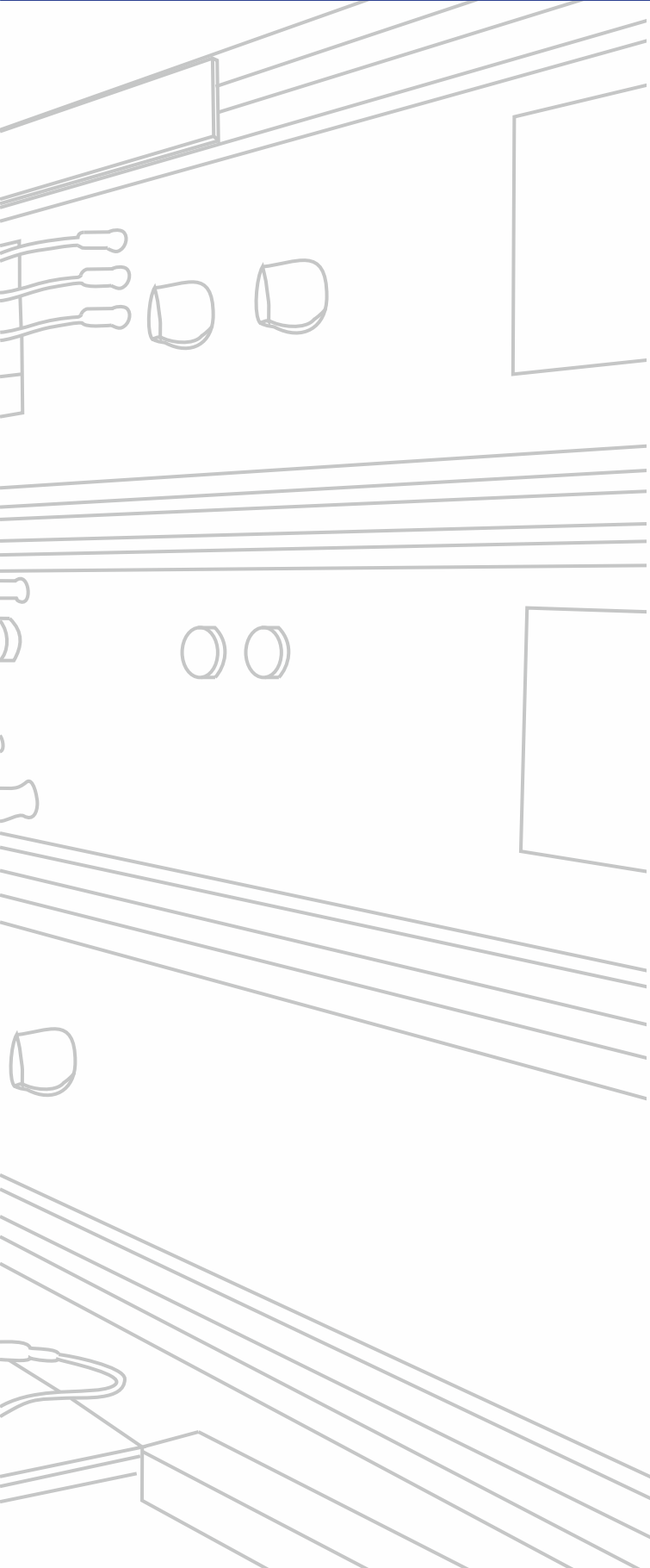
Center of Excellence in AI and ML

The Department of Electronics and Electrical Engineering has a dedicated Center of Excellence in AI and ML which facilitates and promotes research among our students. The Center has a well-equipped laboratory that consists of facilities like AI, NVIDIA, LIDAR, RoboEX and Dell Poweredge R440 which provide computing support to our students to model, simulate and optimize algorithms to develop a variety of applications like video surveillance, self-driving cars, etc.

The centre also offers an immersive and interactive environment for the development of IoT-based applications. The laboratory is equipped with state-of-art hardware and software platforms required for the design of connected devices and cyber-physical systems.

AI for
Future

Electrical & Computer Engineering

B. Tech Electrical & Computer Engineering programme prepares our students in the theory and application of the knowledge of computer, electrical, and electronics engineering in a variety of areas like electric vehicles, smart grids, automation, algorithms, software programming, data science, artificial intelligence, Internet of Things, cloud computing, cybersecurity, and others. The programme offers multiple tracks and electives for successful careers in a number of fields. After completing the programme successfully, our students can make careers as Computer Hardware Engineers, Communication Engineers, Machine Learning Engineers, Information Systems Managers, Data Scientists, etc.

Core Specializations

- Smart Electric Mobility
- Robotics & Industrial Automation
- Artificial Intelligence
- Data Analytics
- Smart Grid & Energy Systems
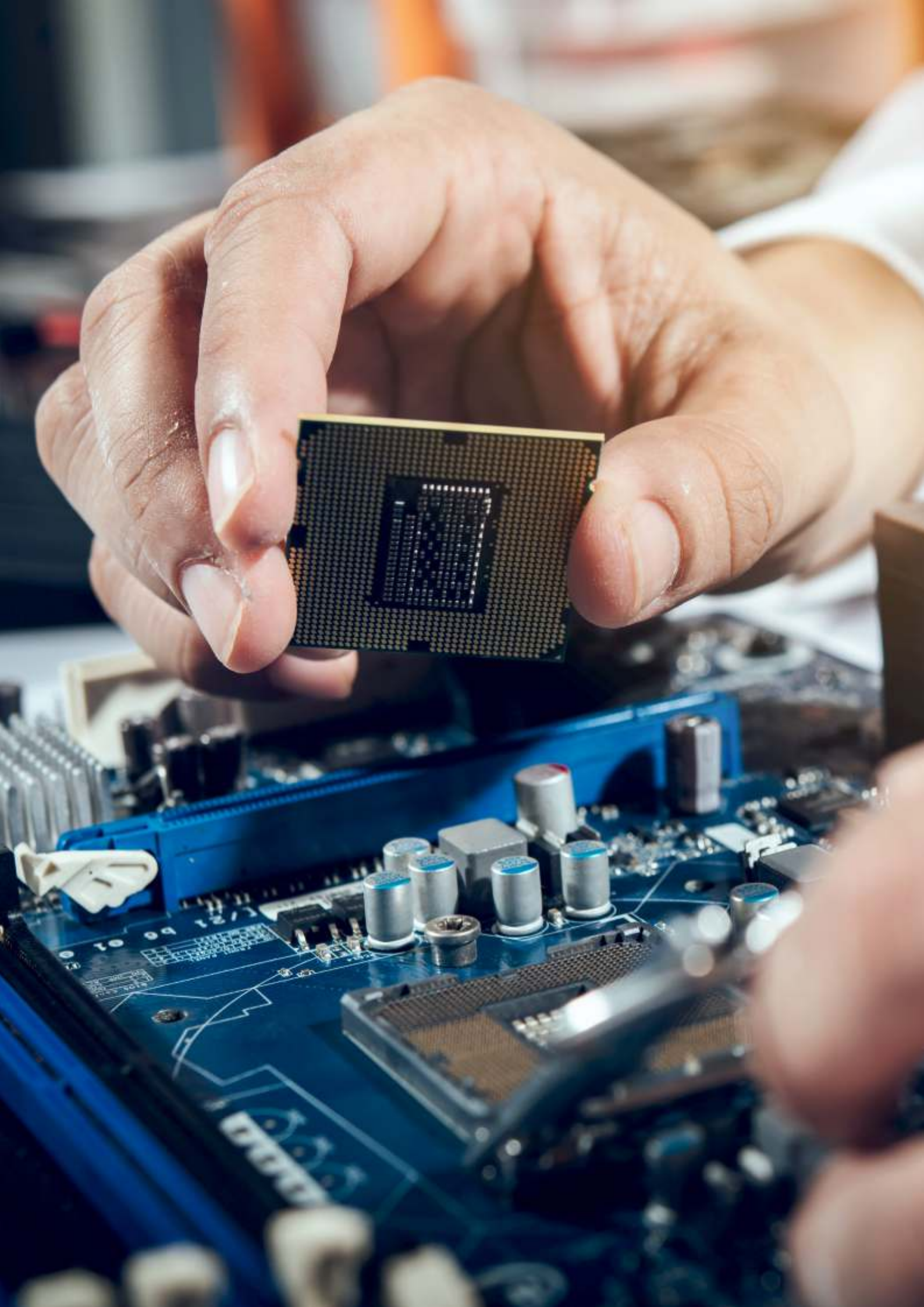
Department of
Computer Engineering and Technology

The field of Computer Engineering and Technology presents an unprecedented demand for innovation, design, development, deployment, usability and presentation. At the Department of Computer Engineering and Technology, a perfect blend of academics, industrial exposure, research opportunities, and a multitude of co-curricular and extracurricular activities hone competence and hands-on skills in budding engineers to meet this demand. The Department also organizes a number of workshops and skill enhancement courses for hands-on experience in software and applications such as Linux, Python, IoT and Data Science.

The department is equipped with more than 27 modern laboratories, including Cloud Computing Laboratory, Web Technology Laboratory, IoT Laboratory, and laboratories pertaining to individual specialization subjects. The Department has multiple MoUS with academic and research partners like NVIDIA, Sigma, Mobiliya, IZealiant technologies, C-DAC, and Carenx to name a few. The Department has a Center of Excellence established by MNCs like IBM, AMDOCS, NVIDIA and IEEE Pune section (Affordable Agriculture Technology Laboratory) to prepare students to face the challenges of the industry through hands-on training.

Research Grants

The Department of Computer Engineering and Technology has received grants from AICTE, IEEE, and IBM for setting up laboratories and research projects.

- So far more than 191 companies have offered internship opportunities to our students.

- The Department has received a total grant of INR 12,66,800/- from various governmental agencies like MODROBS, AICTE, etc.

- The Department has received funding worth INR 10 lakhs from IBM for the project "Detection of Pre-dementia". It is an interactive system that performs various cognitive function tests to assess a person's cognitive functions (memory, attention span, speed, language, Visio-spatial, executive function, etc.)

- The Department has received a grant under the IEEE affordable agriculture lab for the project titled "Autonomous Bot for Future Farming" - an agricultural robot capable of fertilizing crops with minimal human intervention and reduced effort.

B.Tech
Computer Engineering and Technology

The B.Tech in Computer Science and Engineering at MIT-WPU trains students in the fundamentals of hardware and software, the analysis of algorithms, and the knowledge of mathematics and sciences. The programme equips the students with strong theoretical and practical knowledge of programming and engineering and develops research and innovation abilities in computer engineering. The course curriculum includes cutting-edge technologies like Artificial Intelligence, Machine Learning, Data Analytics, Cloud Computing, High-Performance Computing, Internet of Things, Network and Cyber Security, Computer Forensics, etc. taught by experienced and eminent faculties. The course opens career opportunities as Software Developer, Testing Engineer, System Analyst, Technical Support Engineer, IT Technical Content Developer, System Database Administrator, etc.

Core Specializations

- Data Science

- Software Design & Development

- Multimedia & Computer Vision

- Information & Cyber Security
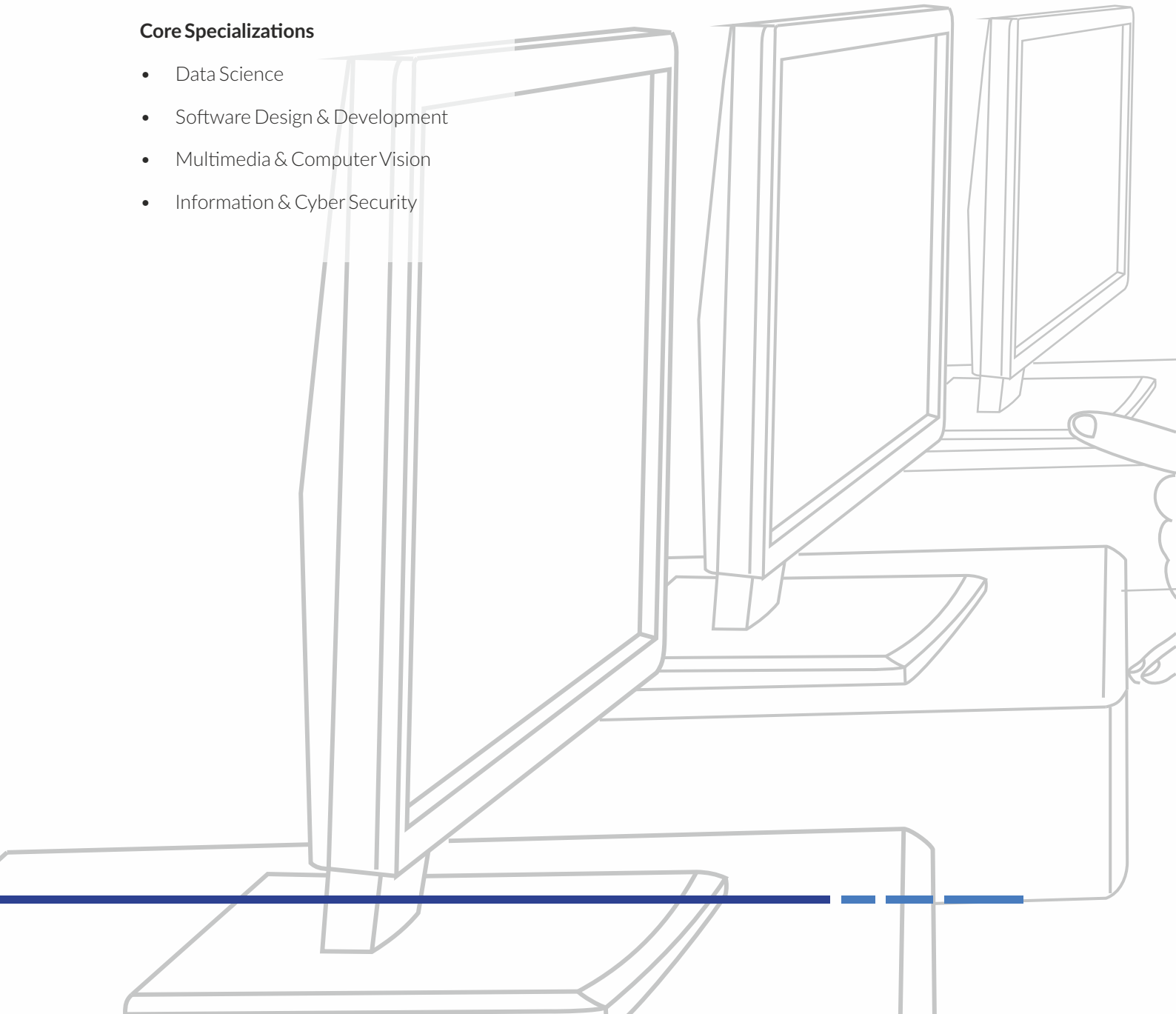
CSE with specialization

Artificial Intelligence & Data Science

The domain of Artificial Intelligence and Data Science (AI & DS) can solve problems in multiple interdisciplinary realms owing to cutting-edge technologies such as Statistics, Big Data Analytics, Machine Learning, Cognitive Computing, Data Visualization, Deep Learning, etc. The CSE with specialization in Artificial Intelligence & Data Science programme grooms our students to tackle real-world challenges in the field of Machine Learning, Statistics, Knowledge Discovery, and Data Visualization. The graduates can pursue careers such as Data Scientists, Business Analysts, Researchers, etc

Facets of Professional Electives under AI & DS:
- Edge AI
- Business Intelligence
- Bio Inspired Computing
- Medical Image Processing
- Human Computer Interface
- Augmented Reality & Virtual Reality
- Time Series Analysis & forecasting
- Quantum Computing

Cyber Security & Forensics

Cybersecurity plays a crucial role across multiple sectors such as corporate, healthcare, e-commerce, education, research, and government organizations in protecting important data from theft and damage. Cybersecurity professionals work in protecting business data, customer data, and other sensitive proprietary data from the alarming increase of cyber-attacks globally. Cybersecurity is now one of the strongest assets for any organization due to its pivotal role in defence against a myriad of threats.

This perpetuates an ever-increasing demand in the industry for skilled Computer Engineers competent to deal with real-world problems surfacing in one or more of the domains of Cybersecurity including – physical, information, cognitive and social. The B.Tech Computer Science and Engineering (Cyber Security and Forensics) is a specialized course that intends to imbue the core knowledge of Cybersecurity and equip the students to become industry-ready. The students can opt for careers like Cyber Security Analysts, Network Security Analysts, Information Security Crime investigators, etc.

Facets of Professional Electives under Cyber Security & Forensics
- Big Data Technologies
- Secure Software Design and Enterprise Computing
- Cyber-Physical and Enterprise Security
- Incident Response and Malware Analysis
- Blockchain and Cryptocurrency Technologies
- Mobile Device Threats and Investigations
- Artificial Intelligence
- Data Science for Cybersecurity and Forensics

B.Tech Computer Science and Engineering with specialization in Computer Science and Business Systems (CSBS)

The B.Tech in Computer Science and Engineering (Computer Science and Business Systems) is a unique course that trains students in multiple fields namely Engineering, Computer Science, and Business Systems. The course is designed by TCS to make students ready to meet the challenges of Industry 4.0. The programme focuses on creating engineers well-versed in the core topics of Computer Science, Technology Abstraction, Business Principles, Business Discipline, and Service Orientation along with an eye for innovation and entrepreneurship. The course offers internship opportunities based on their performance. The students can pursue successful careers as Database Administrators, Software Architects, Data Scientists, Big Data Engineers, Machine Learning Engineers, Computer Hardware Engineers, Web Developers, and more after completing the programme.

Core Specialisations
- Computer Science (CS)
- Digital Technology & Systems (DTS)
- Innovation, IP & Entrepreneurship (IE)
- Data Science (DS)
- Management Science (MS)
- Sciences & Humanities (SH)

Department of
Petroleum Engineering

The Department of Petroleum Engineering offers specialized B.Tech courses with a curriculum designed by industry experts which acquaint the students with the production and processing of hydrocarbons like natural gas or crude oil. The courses acquaint the students with various disciplines essential in this interdisciplinary field like geophysics, petroleum geology, formation evaluation, drilling, economics, reservoir simulation, reservoir engineering, well engineering, artificial lift systems, etc. The comprehensive programs prepare our students to become reservoir engineers, drilling engineers, and production engineers in the future.
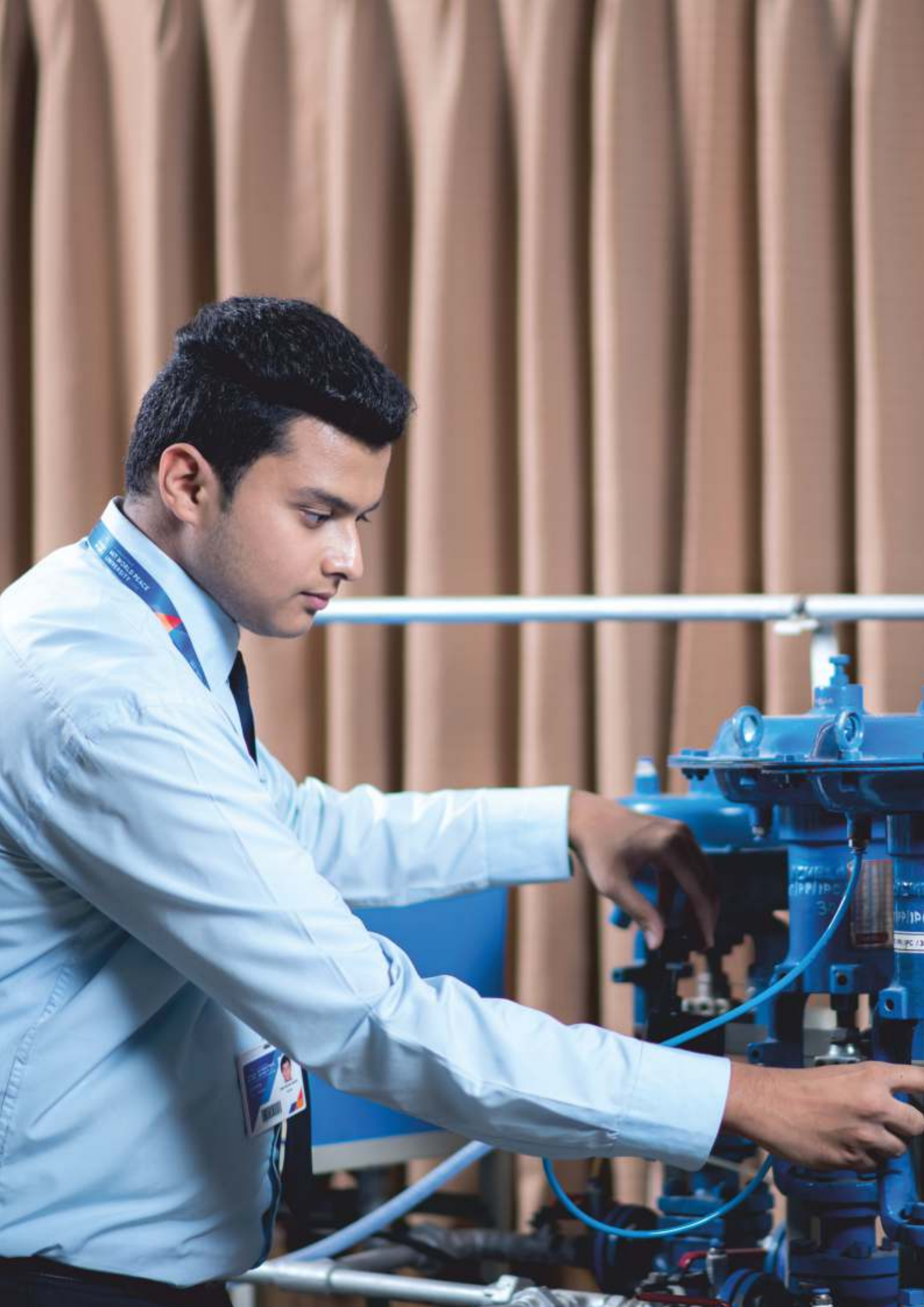
B.Tech
Petroleum Engineering
(Artificial Intelligence & Machine Learning)

Over the last century, a huge amount of data on the exploration and production of oil and gas has been created. Oil companies gain a competitive edge by identifying, aggregating, storing, and analyzing this vast data. The industry is thus on the lookout for engineers who possess knowledge of not only Petroleum Engineering but also of Data Science and Artificial Intelligence. These multiskilled petroleum engineers are crucial in streamlining systems across downstream, midstream, and upstream sectors of the Oil and Gas industry.

The B. Tech Petroleum Engineering (Artificial Intelligence & Machine Learning) at MIT-WPU is a specially curated course that offers not only the core knowledge of petroleum engineering to the students but also the essential grounding in Big Data, Artificial Intelligence, and Machine Learning. The students can become subsurface data engineers, production data analysts, petroleum data analysts, petroleum data consultants, etc.

The Department offers the following majors:

- Production Engineering

- Exploration & Economics

- Reservoir Engineering

- Drilling Engineering

- Data Analytics

The Subsea Lab

It is estimated that the energy demand in developing nations will rise by 65 percent between 2010 and 2040. Oil will remain the primary global fuel, while natural gas will overtake coal for the second spot. A large country like India needs energy and one of the potential sources is subsea reserves.

Globally, Subsea Oil and Gas development has seen steady growth in the last few decades. This growth is expected to continue. Like with other engineering industries, the availability of skilled resources to manage the growth is a challenge. There is a need for skilled personnel in India to explore the local and international markets

Aker Solutions has embarked on an education initiative with MIT to introduce subsea engineering as a subject and support the development of subsea knowledge and skills.

Subsea Technology consists of advanced systems to extract oil and gas from the depths of the ocean. While a huge repository of these fuels occurs in the seas and oceans, the possibility and risk of human intervention are very high. Hence, advanced mechanisms are employed in the entire process, right from fabrication, logistics, installation, and commission to the supply chain.

Subsea Engineering Laboratory at MIT Pune:

Aker solutions and MIT-WPU have jointly established the Subsea Engineering Laboratory at the Faculty of Engineering. This state-of-the-art prototype demonstrates and conducts deep-water offshore production operations.

Aker Solutions has supported MIT-WPU on this project from concept to completion including the laboratory's design, procurement, fabrication, installations, assembly, and equipment testing. Aker Solutions is also actively involved in the commissioning of the project and its working modules. A combined group of MIT-WPU faculty members, students, and Aker Solutions engineers have conceptualized the laboratory's experiments on well performance and remote operating vehicles. The Center for Subsea Engineering Research (CSER)

serves as an extension to academic knowledge on various domains of petroleum engineering and encourages research, innovation, and entrepreneurship in the various fields of engineering.

The extent of scope and utilization of the Subsea Engineering laboratory facility:

- Demonstration and performance of laboratory experiments of academic importance for UG and PG students of petroleum engineering
- Industrial Safety and Health Engineering (ISHE) and subsea engineering workshops and professional training programs jointly with the industry.
- Subsea engineering awareness programs and walk-in tours for industry professionals, and college and school students.
- Training on drilling and well control simulation facilities and experiments to be performed using a real-time drilling and well control system for delivering hands-on training.

Interdisciplinary Research Opportunities:

The Subsea laboratory facilitates interdisciplinary research in various domains of engineering including

- Vibration Analysis
- Robotics, ROVs in Subsea Engineering
- Fluid Dynamics
- Subsurface Production and Reservoir Engineering
- Surface Production Facilities Engineering
- Underwater Electronics and Fabrication
- Fluid Machineries
- Enhanced Oil Recovery
- Advanced Instrumentation and Process Control
- Flow Assurance
- Drilling and Well Control
- Pipeline Transportation
- Data Science and Analytics

Eligibility to any of the 4-year B.Tech courses

- JEE Mains 2023
- MHT-CET 2023
- MHT-CET B 2023
- NEET 2023
- PERA CET 2023
- All B.Tech Programs candidates should appear in JEE/ MHCET/ PERA.
- Candidate who has been selected through MIT-WPU-CET should submit their JEE/MHCET/PERA/ MHCET-B*/NEET* score. [*Applicable only for Bio-Engineering Programmes]
- Any other criterion declared from time to time by the appropriate authority as defined under the Act
- 50% & above aggregate score in PCM/ Physics, Mathematics Compulsory with Chemistry /Biotechnology/Technical Vocational Courses in 10+2 or equivalent examination (at least 45 % marks, in case of Backward class categories candidates belonging to Maharashtra State only)

B.Tech (Direct Lateral Entry in Second Year) -

After 3 Years of Diploma in Engineering

MIT-WPU offers several direct entry courses spanning 3 years. These courses allow direct entry into the second year of engineering. The students who have completed a three-year diploma after the 10th standard from any All-India Council for Technical Education OR Central OR State Government approved Institution OR an equivalent Institute are eligible for direct entry courses.

Eligibility

Completed the Diploma Course in the academic year 2022-23, 2021-22, & 2020-21 in Engineering and Technology with at least 60% marks in appropriate branch of Engineering and Technology from an All-India Council for Technical Education or Central or State Government approved Institution or its equivalent (at least 55 % marks, in case of Backward class categories candidates belonging to Maharashtra State only)

List of programmes in B.Tech (Direct Second Year Lateral Entry)
After 3 Years of Diploma in Engineering

- B.Tech Mechanical Engineering
- B.Tech Mechanical Engineering (Robotics and Automation)
- B.Tech Electronics and Communication Engineering
- B.Tech Electrical and Computer Engineering
- B.Tech Civil Engineering
- B.Tech Chemical Engineering
- B.Tech Computer Science and Engineering (Artificial Intelligence and Data Science)
- B.Tech Computer Science and Engineering (Computer Science and Business Systems)
- B.Tech Computer Science and Engineering (Cyber Security and Forensics)
- B.Tech Electronics and Communication Engineering (Artificial Intelligence and Machine Learning)
- B.Tech Civil Engineering (Smart Infrastructure and Construction)
- B.Tech Bio Engineering
- B.Tech Petroleum Engineering (Artificial Intelligence and Machine Learning)

Integrated B.Tech Lateral Entry After Class 12(HSC)

The Integrated B.Tech Lateral Entry Programs in Engineering by MIT-WPU are five-year courses after the 12th standard.
- Integrated B.Tech in Mechanical Engineering - Direct Entry in Second Year
- Integrated B.Tech in Mechanical Engineering (Robotics and Automation) - Direct Entry in Second Year
- Integrated B.Tech in Civil Engineering (Smart Infrastructure and Construction) - Direct Entry in Second Year
- Integrated B.Tech in Electronic and Communication Engineering (Artificial Intelligence and Machine Learning) - Direct Entry in Second Year

Eligibility Criteria

Internships

Experiential learning is an integral component of learning at MIT-WPU. The students of B.Tech pursue a six-month mandatory internship with renowned companies in their field. This internship aims to provide a platform to integrate classroom knowledge with related practical applications and skills in a professional ecosystem. The students get a chance to access real-world practical learning that instill critical perspectives for rewarding future career pathways.

Scholarship

Merit scholarships are proposed to reward and motivate meritorious students with financial assistance based on their academic performance, performance in requisite National Level Tests, and in MIT-WPU internal test- MIT-WPU CET for the AY 2023-24. These scholarships are applicable for the entire duration of the programme.

The categories of Merit Scholarships are detailed below
- Dr. Vishwanath Karad Merit Scholarship AY 2023-24
- MIT-WPU Merit Scholarship AY 2023-24
- Scholarships to Elite Sports person AY 2023-24
- Scholarship Awarded to Wards of MIT-WPU/ MAEER's Staff Members

For more information visit
https://admissions.mitwpu.edu.in/scholarship/

Placements

The Training and Placement Cell at MIT-WPU plays a crucial role in locating job opportunities for students by inviting reputed firms and industrial establishments for opportunities. MIT-WPU has been successful in maintaining high placement statistics over the years.

The Placement Cell organizes career guidance programmes for all the students. The cell also arranges training programmes like Mock Interviews, Group Discussions, Communication Skills Workshop etc.

Testimonials

>>>>> "We feel grateful to be a part of the Department of Electronics and Electrical Engineering at MIT-WPU. The curriculum is designed in a manner that it helps us to learn new things, theoretically as well as practically. It includes the latest developments in the field of engineering. Teachers help us in all the best possible ways and relate things with day-to-day examples so that we can learn faster. I especially loved the immersion programmes which connected us to the grassroot of the country. We could also visit a few national institutes."

Akshita Jain, Final Year B.Tech

>>>>> "I have witnessed an enormous growth curve in myself, not just in academics, but in every aspect of my life while studying in a positive, lively, and peaceful environment at the Department of Electronics and Electrical Engineering, MIT-WPU. Engagement in innovative projects at such an excellent infrastructure having great facilities for design and testing has been indeed a really life-transforming experience for me. These projects made me understand the application of the knowledge I was acquiring. Moreover, I loved the Peace Studies module which has contributed greatly in the development of my personality. "
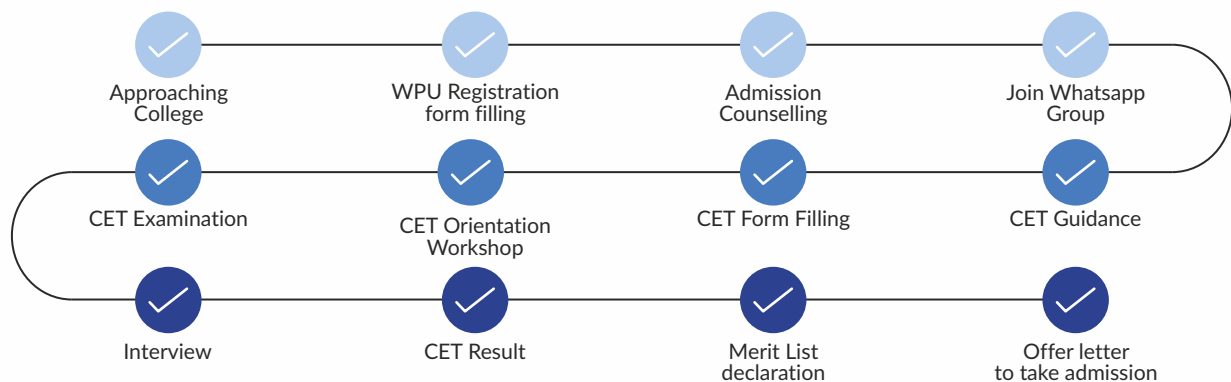
Aniruddha Atigre, Batch 2017-2021

>>>>> "A transformation from a shy boy to the confident prize winner representing the university at a national level is what I have experienced here. The faculty members at the Department of Electronics and Electrical Engineering supported me at all fronts to convert my theoretical ideas into a practical project and fuelled me with lifelong abilities and courage to face the competitive world. I loved how every aspect was connected with hands-on projects and assignments which enhanced my understanding of the subject. I am sure this will help me as I enter the job market."

Janak Kulkarni, Batch 2017-2021

Admission Process

Approaching College	WPU Registration form filling	Admission Counselling	Join Whatsapp Group
CET Examination	CET Orientation Workshop	CET Form Filling	CET Guidance
Interview	CET Result	Merit List declaration	Offer letter to take admission

Scan to apply

MIT-WPU
॥ विश्वशान्तिर्ध्रुवं ध्रुवा ॥

Dr. Vishwanath Karad
MIT WORLD PEACE UNIVERSITY | PUNE
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