

IIT PATNA



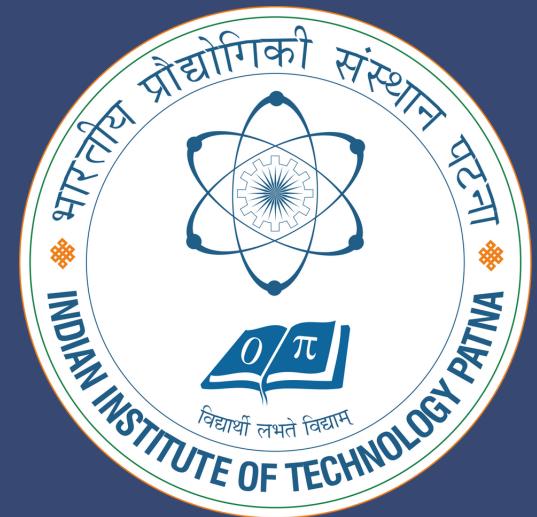
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MECHATRONICS PLACEMENT BROCHURE 2023-24

MECHATRONICS at IIT PATNA

About us

M.TECH IN MECHATRONICS IS OFFERED BY SCHOOL OF ENGINEERING & TECHNOLOGY(DEPARTMENT OF MECHANICAL ENGINEERING JOINTLY WITH DEPARTMENT OF ELECTRICAL ENGINEERING), IIT PATNA. THE PROGRAM IS EXACTLY DESIGNED FOR MECHANICAL,ELECTRONICS,PRODUCTION, INSTRUMENTATION AND ELECTRICAL ENGINEERS WHO ASPIRE TO BECOME STRONG CONTRIBUTORS TO MULTIDISCIPLINARY DESIGN AND PRODUCT DEVELOPMENT TEAMS. CONTRIBUTING TO GROUND BREAKING RESEARCH ACTIVITIES BY NURTURING THE BEST MINDS OF THE COUNTRY, IS ONE OF THE KEY MOTTO OF THE PROGRAM. IN THIS PROGRAM, ENGINEERS WITH A SOLID FOUNDATION IN THE CORE PRINCIPLES OF THEIR COMPLEMENTARY DISCIPLINE GETS AUGMENTED WITH FOCUSED STUDY IN MECHATRONICS AT THE INTERSECTION OF MECHANICAL ENGINEERING, COMPUTER SCIENCE ENGINEERING AND ELECTRONICS ENGINEERING.



HOD's Message



Dr. Mayank Tiwari
Head, Department of
Mechanical Engineering

Dear Recruiter's

Department of Mechanical engineering in collaboration with Department of Electrical Engineering launched its first masters program M. Tech. in Mechatronics in the year 2012 with an aim to provide a platform for interdisciplinary research. Consequently, the program has gained popularity among mechanical, electrical, Production, electronics and instrumentation engineers and has become one of the most successful master's degree program at IIT Patna. The curriculum is designed to inculcate in-depth knowledge of fundamentals of Mechatronics with ' learning by doing ' pedagogical approach. The success of the program can be gauged from the placement offers received by our students from companies such as TVS, TCS, Tata Motors , L&T, Amazon, Google, IBM, Indian Navy , DRDO among others . In addition, our alumni are either pursuing or have completed their higher studies in world-class universities like IITs, NUS, Istituto Italiano di Tecnologia, and Cornell in the areas aligned with mechatronics and robotics . Looking forward to see you at our campus .

Season' s greetings and warm regards ,

COURSE WORK

Core Subjects

- Fundamental of Mechatronics
- Sensors and Actuators
- Modelling and Simulation
- Advanced Engineering Mathematics

Electives

- Fundamental of Machine Learning
- Introduction to Deep Learning
- Natural Language Processing
- Digital Image Processing
- Industry 4.0
- Mobile Robotics
- Computer Numeric Controlled Machine Tools
- Control of Electric Drives

Lab Work

- Sensors and Actuators
- PLC
- Pneumatic and Hydraulic
- Microprocessors
- Micro- controllers
- Audio Processing
- Image Processing
- Data Acquisition System
- Computer Vision

Software / Languages

- C,C++
- Python
- CoppeliaSim
- FluidSim
- Autodesk
- Eagle
- Solidworks
- Catia

LABORATORY

Mechatronics, Instrumentation and Control Lab

This research lab is focused on path planning and control of various stationary and mobile robots such as aquatic robotic arm, micro-robots and haptics

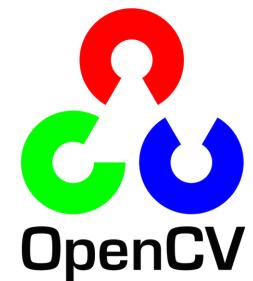


This lab is equipped with

- KUKA KR3 R50
- 2.5 AXIS CNC MACHINE
- LASER CUTTING MACHINE
- PCB RAPID PROTOTYPING
- FESTO INDUSTRIAL AUTOMATION KIT
- NIKON INVERTED MICROSCOPE
- DATA ACQUISITION SYSTEM BY NATIONAL INSTRUMENTS



TECHNICAL SKILLS



CURRENT PROJECTS

- Remote monitoring and maintenance planning for processes and machines using Artificial Intelligence
- Device development for automatic disease detection using DL/ML
- Controlled actuation of Electroactive Polymeric membrane for Soft Robotics
- Climbing Robots for Structural Health Monitoring
- Crop health monitoring using drone technology and Image processing
- AI enabled Gearbox Fault Diagnosis
- Simultaneous Localization and Mapping (SLAM) of 3D Workspace using Lizard-Inspired Robot Swarm

CURRENT PROJECTS

- Smart Fault Tolerant based inverter design for Electric Vehicle applications
- Development of Exoskeleton for Ameliorating Manual Work for Improving Safety and Dignity
- Defect analysis of rolling element bearing using Machine Learning Approach
- Industrial IoT based fault diagnosis of Gearbox
- Study of Radiofrequency ablation and magnetic hyperthermia system with PID controller for the treatment of cancerous tumors
- Design of stethoscope for computer added diagnosis by ML and DL
- Colorimetric Detection Sensor of Biomolecules

PREVIOUS RECRUITERS



Mercedes-Benz



ICICI Bank



TCS
Research &
Innovation

SIEMENS



JOHN DEERE

TVS



LARSEN & TOUBRO



BOSCH



FORCE
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