PLACEMENT BROCHURE 2021-22

M.TECH MECHATRONICS

Indian Institute of Technology Patna

भारतीय प्रौद्योगिकी संस्थान पटना

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ABOUT MECHATRONICS DEPARTMENT

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 designed for Mechanical Engineers, Electronics Engineers, Instrumentation Engineers 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 mottos 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 Electrical, Electronics, Mechanical and Computer Science Engineering

Dr. Mohd. Kaleem Khan
Head, Department of Mechanical Engineering

"THE PROGRAM HAS GAINED POPULARITY AMONG MECHANICAL, ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERS AND HAS BECOME ONE OF THE MOST SUCCESSFUL MASTERS' DEGREE PROGRAM AT IIT PATNA"

HOD'S MESSAGE

Dear recruiters,

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, among Mechanical, Electrical, Electronics and Instrumentation Engineers and has become one of most successful masters' degree program at IIT Patna. Indian Railways has signed an MoU with IIT Patna which allows its employees to register in this program every year. The curriculum is designed to include 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, many of our alumni are pursuing higher studies and research in prominent national and international universities and laboratories.

Looking forward to see you at our campus. Season's greetings and warm regard

COURSE WORK

CORE COURSES

Fundamental of Mechatronics
Sensor and Actuators
Modelling and Simulation
Advanced Engineering Mathematics

ELECTIVE COURSES

Advanced Biomedical Signal Processing
Applied Time Series Analysis.
CNC Machine Tools
Deep Learning in Video Surveillance System
Digital Image Processing
Embedded Systems
Fundamentals of Machine Learning
Introduction to Deep Learning
Microfluidics and Microsystems
Robotics: Advanced Concepts and Analysis
Robot Motion Planning
Vehicle Dynamics and Multi-body Systems

LAB COURSES

Sensors
Actuators
PLC
Pneumatic and Hydraulic
Microprocessors
Micro-controllers
Data Acquisition System
Computer Vision
Robotic Manipulator
PCB Prototyping
3D Printing, Laser Cutting
CNC Machining

TECHNICAL SKILLS

CURRENT PROJECT

- Knowledge-Grounded Conversation using Multimodal Machine Learning
- Deep Learning the sound of boiling for advance prediction of boiling crisis using Supervised Learning
- Unsupervised approach for cyberbullying detection in code-mixed Indian language
- Magnetic gear drive for EV/hybrid
- Chatbot development using NLP
- Underwater Robotics
- Exoskeleton control system
- Exoskeleton design and analysis
- Deep Learning (GNN), NLP, Computer vision based Multimodal Misinformation Detection
- Iot based condition monitoring of induction motor
- Iot based condition monitoring of gearbox
- Underwater Simultaneous Localization and Mapping (SLAM)
- Hybrid Electric Vehicle
- Personality Prediction using Deep Learning
- Deep Learning based Surveillance System
- Application of natural processing and reinforcement learning
- Federated Learning using Machine Learning and Deep Learning

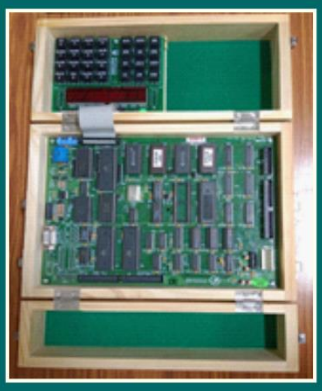
STUDENT'S ACHIEVEMENTS

- Start-up - Robo Bionics for Prosthetic Arm
- Shortlisted in Top 30 out of 640 ideas for BOSCH
- Hackathon for Road Safety at IIT Guwahati
- Students pursuing PhD at McMaster University, Italian Institute of Technology, NUS, and NTU
- Published paper in various top journal

LABORATORY

MECHATRONICS, INSTRUMENTATION AND CONTROL LABORATORY

This research lab is focused on path-planning and control of various stationary and mobile robots



The lab is equipped with

- KUKA KR3 R50 E 2.5 Axis CNC Machine
- Laser Cutting Machine
- PCB Rapid Prototyping
- Festo Industrial Automation Kit
- Nikon Inverted Microscope
- Data Acquisition System by National Instruments

ROBOTICS AND AUTOMATION LABORATORY

The lab is equipped with

- 6 Axis Aristo Robot
- 4 Axis Scara Robot
- 5 Axis Scorbot Robot
- Fire Bird Xi
- Smart Materials Testing Equipment

DYNAMICS OF MACHINERY

Research in this lab is focused on topics like fault simulation in bearings and gear box, motor, stator and rotor, visco-elastic materials and mathematical modelling of soft-bio mechanical tissues

The lab is equipped with

- Motorized Gyroscope
- Centrifugal (Watt) Governor
- Active Mass Suspension System
- Machinery Fault Simulator

AI-ML-NLP RESERCH LAB

It is dedicated to explore the frontiers of Artificial Intelligence, Machine Learning and Natural Language Processing.

1st in India for Natural Language Processing research in terms of publications during the last 5 years (2015-2020).

It has a setup for Elsevier Centre of Excellence for Natural Language Processing.

Several industry sponsored projects are currently being undertaken.

PREVIOUS RECRUITERS

CURRENT BATCH

Mr. Abhishek Singh

Mr. Priyesh Hemrom

Mr. Aditya Shah

Mr. Romit Raj

Mr. Ajayan

Mr. Santan Suman

Mr. Akash Gupta

Mr. Shubham Wasnik

Mr. Arushi Kumar Prakash

Mr. Shubhranshu Ranjan Sharma

Mr. Ashutosh Kumar Trivedi

Mr. Sonu Kumar

Mr. Durgesh Vikram Yadav

Mr. Shukla Aditya Manishbhai

Mr. Manohar Kumar

Mr. Vipin Gupta

Mr. Ninad Pradeep Kuware

CONTACTS US

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