



ACHARYA INSTITUTE OF TECHNOLOGY

Affiliated to VTU



- Accredited, industry-aligned programs with expert faculty.
- Access to LinkedIn and high-performance laptops for seamless learning.
- In-demand certifications in EV, Cyber Security, and more for career advantage.
- Global exposure through partnerships and a diverse student body.
- Cutting-edge labs and a digital library for comprehensive resources.
- Collaborations with top corporations offering internships and projects.
- Vibrant clubs and activities focused on holistic development.
- Robust placement support with 550+ recruiting companies annually.



**B.E MECHATRONICS
ENGINEERING**

Specialization in Product Life Cycle
Management (PLM) powered by

SIEMENS

About

Mechatronics engineering combines elements of mechanical engineering, electronics, computer science, and control engineering. The program prepares students for careers in designing and implementing intelligent systems and products. Our collaboration with Siemens helps students stay updated on current industry trends and are informed about the latest advancements and practices in the field.

Career Scope

Multidisciplinary Expertise: Mechatronics engineers possess a unique skill set that combines knowledge from mechanical and electronics engineering, making them perfect candidates for interdisciplinary projects.

Robotics and Automation Opportunities: With a focus on robotics and automation, graduates can pursue careers in industries such as manufacturing, healthcare, and logistics, where intelligent systems are increasingly utilized.

Global Career Opportunities: The skills gained in mechatronics engineering are applicable worldwide. Graduates can explore job opportunities internationally, working on projects that involve advanced automation and intelligent systems.

Eligibility

Pass in 10+2 / Higher Secondary (HS) / Pre University (PUC) / 'A' Level (with 12 years of schooling) or its equivalent with English as one of the languages. Shall have secured a minimum of 45% marks in aggregate in Physics, Mathematics and any one of the following:

Chemistry, Biology, Computer Science, Electronics. AIT admits students as per prevailing rules and regulations of VTU.

Candidate must have completed 17 years by June - for the year of admission.

Duration
4 years

COURSE CONTENT

Semester 1

- Mathematics-I for Mechanical Engg Stream
- Applied Physics for ME Stream
- Elements of Mechanical Engineering
- Engineering Science Course-I
- Emerging Technology Course-I
- Programming language Course-I
- Communicative English
- Professional Writing Skills in English
- Samskrutika Kannada/ Balake Kannada
- Indian Constitution
- Innovation and Design Thinking
- Scientific Foundations of Health

Semester 3

- Mechanics of Materials
- Manufacturing Process
- Material Science and Engineering
- Basic Thermodynamics
- Introduction to Modelling and Design for Manufacturing
- ESC/ETC/PLC
 - Electric and Hybrid Vehicle Technology
 - Smart Materials & Systems
 - Internet of Things (IoT)
 - Waste handling and Management
- Social Connect and Responsibility
- Ability Enhancement Course/Skill Enhancement Course - III
 - Advanced Python Programming [0-0-2]
 - Fundamentals of Virtual Reality [0-2-0]
 - Spreadsheet for Engineers [0-0-2]
 - Tools in Scientific Computing [0-0-2]
- National Service Scheme (NSS)
- Physical Education (PE) (Sports and Athletics)
- Yoga

Semester 2

- Mathematics-II for Mechanical Engg Stream
- Applied Chemistry for ME Stream
- Computer-Aided Engineering Drawing
- Engineering Science Course-II
- Programming Language Course-II
- Emerging Technology Course-II
- Professional Writing Skills in English
- Communicative English
- Indian Constitution
- Samskrutika Kannada/ Balake Kannada
- Scientific Foundations for Health
- Innovation and Design Thinking

Semester 4

- Applied Thermodynamics
- Machining Science & Metrology
- Fluid Mechanics
- Mechanical Measurements and Metrology lab
- ESC/ETC/PLC
 - Non Traditional Machining
 - Environmental Studies
 - Micro Electro Mechanical Systems
 - Robotics and Automation
- Ability Enhancement Course/Skill Enhancement Course- IV
 - Introduction to AI & ML
 - Digital Marketing
 - Introduction to Data Analytics
 - Programming in C++
- Biology For Engineers
- Universal human values course
- National Service Scheme (NSS)
- Physical Education (PE) (Sports and Athletics)
- Yoga



Semester 5

- Industrial Management & Entrepreneurship
- Turbo machines
- Theory of Machines
- CNC Programming and 3-D Printing lab
- Professional Elective - I
 - Mechatronics
 - Automation in manufacturing
 - Supply chain management & Introduction to SAP
 - Energy Engineering
- Mini Project
- Research Methodology and IPR
- Environmental Studies
- National Service Scheme (NSS)
- Physical Education (PE) (Sports and Athletics)
- Yoga

Semester 7

- Finite Element Methods
- Hydraulics and Pneumatics
- Control Engineering
- Professional Elective-III
 - Additive manufacturing
 - Product Design and Management
 - IC Engines
 - Cryogenics
- Open Elective- II
 - Non Traditional machining
 - Hydraulics and Pneumatics
 - Operations Research
 - Non-Conventional Energy Resources
- Major Project Phase-II

Semester 6

- Heat Transfer
- Machine Design
- Professional Elective - II
 - Total Quality Management
 - Refrigeration and Air Conditioning
 - MEMS and Microsystem Technology
 - Design for Manufacturing and Assembly
- Open Elective -I
 - Project Management
 - Renewable Energy Power plants
 - Mechatronics
 - Modern Mobility
- Major Project Phase - I
- L Design lab
- Ability Enhancement Course/Skill Development Course V
 - Basics of Matlab
 - Fundamental of Virtual Reality ARP Development
 - Simulation and Analysis using Ansys workbench [0-0-2]
 - Introduction Augmented Reality
- National Service Scheme (NSS)
- Physical Education (PE) (Sports and Athletics)
- Yoga

Semester 8

- Professional Elective -IV (Online Courses)
 - Quality Design & Control (Available in NPTEL)
 - Machinery Fault Diagnosis and Signal Processing (Available in NPTEL)
 - Modelling & Analytics for Supply Chain Management (Available in NPTEL)
 - Strategies for Sustainable Design (Available in NPTEL)
- Open Elective - III (Online Courses)
 - Fundamentals of Automotive systems (Available in NPTEL)
 - Product Design and Manufacturing (Available in NPTEL)
 - Computer Integrated Manufacturing (Available in NPTEL)
 - Business Planning & Project Management (Available in Swayam Portal)



Acharya Legacy

Founded in 1990, Acharya aims to revolutionize education. With over 12,000 students and 100+ academic programs annually, it stands among the global education elite. Located in India's technical hub, Bangalore, Acharya prioritizes innovation and knowledge. The institution fosters experiential and collaborative learning, shaping well-rounded individuals, evident in its diverse student population from 75+ countries.

11 Institutions

15 Research Centers

100+ Programmes

75+ Nationalities

12000+ Students

1000+ Eminent Faculties

120 Acres State-of-the-Art Campus

B Premnath Reddy
Founder Chairman
Acharya Group

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Collaboration



Center of Excellence



Clubs



Digital Library



Laboratories



Research



Sports



Hostels



Habba



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