



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 BIOTECHNOLOGY
ENGINEERING**

About

Biotechnology engineering combines technology and biological sciences to create or alter products to benefit human health and society at large. In addition to healthcare, biotechnology is also employed in agriculture, food production, environmental management, and industrial processes.

Career Scope

Addressing Global Challenges: A graduate in biotechnology engineering can implement solutions for worldwide challenges, including healthcare, agriculture, and environmental sustainability. A biotechnology engineering degree opens doors to careers in the development of new drugs, medical devices, and diagnostic tools.

Career Opportunities: Graduates can work in pharmaceuticals, healthcare, agriculture, food processing, environmental management, and more.

Sustainable Agriculture: Graduates have the opportunity to revolutionise the agricultural sector as well. They can contribute to crop improvement, pest resistance, and the development of bio-fertilizers.

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 Biotechnology Engg. Stream
- Applied Physics for BT Stream
- Principles of Programming Using C
- Engineering Science Course - I
- Emerging Technology Course - I
- Programming Languages 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

- Cell Biology and Genetics
- Unit Operations + Lab
- Biochemistry +Lab
- Microbiology
- Microbiology Lab
- Engineering Science Course
 - Python Programming
 - Human Anatomy and Physiology
 - R programming for Biologists
 - Plant Physiology and Phyto-hormones
- Social Connect and Responsibility
- Ability Enhancement Course /Skill Enhancement Course - III
 - Bio-Lab Management and Risk Assessment
 - Data presentation, Error Analysis and Inferences
 - Analysis Of Dairy Products Lab
 - Biodiversity and Conservation Law
- National Service Scheme (NSS)
- Physical Education (PE) (Sports and Athletics)
- Yoga

Semester 2

- Mathematics - II for Biotechnology Engg. Stream
- Applied Chemistry for BT 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

- Molecular Biology & Genetic Engineering
- Biostatistics and Tools + Lab
- Immunotechnology + Lab
- Molecular Biology & Genetic Engineering Lab
- Engineering Science Course
 - Biochemical Thermodynamics
 - Marine Bioresources and applications
 - Bioprocess Principles and Stoichiometry
 - Structural Biology and Biophysical Techniques
- Ability Enhancement Course / Skill Enhancement Course- IV
 - Hydroponics, Aquaponics and Aeroponics
 - Water Analysis Lab
 - Extraction methods and herbal products lab
 - Biopesticides and Biofertilizers
- Biology For Engineers (Dr VM, SCE)
- Universal human values course
- National Service Scheme (NSS)
- Physical Education (PE) (Sports and Athletics)
- Yoga



Semester 5

Bioeconomy and Entrepreneurship

- Enzyme Technology + Lab
- Genomics, Proteomics and Bioinformatics
- Bioinformatics Lab
- Professional Elective Course
 - Food Processing and Nutraceuticals (include nutrigenomics)
 - Medicinal Chemistry and Chemoinformatics
 - Forensic Biology
 - Bioprocess Equipment Design and CAED
- Mini Project
- Research Methodology and IPR
- Environmental Studies
- National Service Scheme (NSS)
- Physical Education (PE) (Sports and Athletics)
- Yoga

Semester 7

- Upstream Process Technology + Lab
- Downstream Process Technology + Lab
- Bioethics, Biosafety and Regulatory affairs
- Professional Elective Course
 - Clinical Research
 - Biological Data Management
 - Environmental Biotechnology
 - Agricultural Biotechnology
- Open Elective Course
 - Biomaterials and Medical Implants
 - Traditional Medicine And Health Management
 - Public Health and Community Medicine
 - Bioremediation Techniques
- Major Project Phase - II

Semester 6

- Bioprocess Control & Automation + Lab
- Biokinetics
- Professional Elective Course
 - Biopharmaceuticals
 - Synthetic Biology and Tissue Engineering
 - Biomedical Imaging and Health Informatics
 - Systems Biology and Rational Drug design
- Open Elective Course
 - Robotics in Healthcare and Agri-Tech
 - Food, Nutrition and Health
 - Nanobiotechnology
 - Ecology and Ecosystem
- Project Phase I
- Biokinetics Lab
- Ability Enhancement Course / Skill Development Course V
 - Bio-Innovation and Start-ups
 - Modelling and Simulations in Biology Lab
 - Bioinstrumentation and Servicing Lab
 - Good Manufacturing and Laboratory Practices
- National Service Scheme (NSS)
- Physical Education (PE) (Sports and Athletics)
- Yoga

Semester 8

- Professional Elective (Online Courses)
- Open Elective (Online Courses)
- Internship (Industry/Research) (14 - 20 weeks)



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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