



Department of **BIOTECHNOLOGY**

About Us

The Department of Biotechnology was established in the year 2005, with the vision to raise Bio-technocrats and Entrepreneurs who develop processes and products for the betterment of the community and the environment. The Program B.Tech. Biotechnology was accredited by NBA in 2019 and the M.Tech program in 2022. Our programs B.Tech, M.Tech. & M.Sc. are also approved by AICTE and UGC.

The Department offers a multidisciplinary curriculum which includes Trending Technologies such as Genetic Engineering, Gene Transfer, Metabolic Engineering, Cancer Management, Downstream Processing, Thermodynamics, Tissue Engineering, Phyto-therapeutics, Plant & Animal Tissue Culture and Nanobiotechnology.

The Department aims at raising students with academic excellence, professional competence and good ethics to find solutions to human problems in areas relating to Food, Water, Health Care and Energy through scientific, social and technological research.

The graduates are well equipped to meet with the requirements of the Industry and Research organizations to pursue a career in Biotechnology.

Programs Offered

- **B.Tech.** Biotechnology (4 years / FT)
- **M.Tech.** Biotechnology (2 years / FT)
- **M.Sc.** Biotechnology (2 years / FT)
- **Ph.D.** Biotechnology (FT / PT)

As per the new education policy NEP 2020, the following major specializations are offered with additional 18 credits. Merit based scholarships are also available.

- **B.Tech.** Biotechnology (Hons.) (Specialization in Genome Engineering & Technology) - 4 Years / FT
- **B.Tech.** Biotechnology (Hons.) (Specialization in Drug Engineering) - 4 years / FT
- **B.Tech.** Biotechnology (Hons.) (Specialization in Precision Health Technology) - 4 years / FT

Eligibility for B.Tech Biotechnology:

A pass in HSC (10 + 2) or equivalent with Physics and Mathematics and any one of the following subjects: Chemistry / Biotech / Biology / Technical Vocational Subject / Computer Science / Information Technology / Information Practices / Agriculture / Engineering Graphics / Business Studies with a minimum aggregate of 50% (overall) marks from a recognized Board. (or) A pass in HSC (10 + 2) or equivalent examination with Physics, Chemistry and Biology / Zoology / Botany / Computer

Science / Agricultural Engineering with a minimum aggregate of 50% from a recognized Board.

Eligibility for B.Tech Biotechnology - Lateral Entry

Qualifying Diploma with a minimum of 50 % of marks (cumulative) or B.Sc. with a minimum aggregate of 50 % of marks.


Diploma in Chemical Engineering / Instrumentation / Food Technology / Pharmaceutical Technology / B.Sc. Life Sciences / Physics / Chemistry / Microbiology / Biotechnology / Biochemistry or Equivalent Diploma / B.Sc. Degree

Components of the Curriculum

As prescribed by the AICTE, curriculum includes Program Cores, Professional Electives, Soft Cores, Project Oriented Learning, Industrial Visits and Industry Internships to attain the required academic credits. The students appear for MOOC certification programs offered by NPTEL, Swayam and Courseera which forms an Integral part of the curriculum.

Significant Courses aligned to the vision of the department:

- Molecular and Genetic Engineering
- Cell Biology and Immunotechnology
- Plant and Animal Tissue Culture
- Bioprocess Engineering
- Chemical Reaction Engineering
- Chemical and Bio-thermodynamics
- Pharmaceutical Technology
- Recombinant DNA Technology
- Entrepreneurship, IPR and Bioethics
- Food and Agricultural Biotechnology
- Algae Biotechnology

The entire curriculum / syllabus of the Department can be viewed from the link given below <https://www.karunya.edu/academics>  Click here

Laboratories / Facilities

The department is equipped with state-of-the-art laboratories and uses the latest technology to pursue cutting edge research in Microbiology, Immunology, Biochemistry, Molecular Biology, Genetic Engineering, Plant and Animal cell culture, Bioprocess Technology & Downstream Processing.

The Department also hosts a CPCSEA approved animal house facility (1537/PO/ReBi/S/11/CPCSEA) which conducts preclinical research on experimental animals such as chicken, mice, rat, rabbit & hamster with a Small Animal Breeding Facility.

Thrust Areas of Research

The thrust areas of research include Bioprocess Modeling, Biomass and Bio-energy, Nutraceuticals, Phyto-therapeutics, Anticancer Research, Drug Discovery and Modeling, Bioremediation, Bio-film technology and Environmental Engineering.

Funded Research Projects

The Department received research funds to the tune of Rs.3.4 crores from funding agencies like DBT (Department of Biotechnology), DST (Department of Science and Technology), DRDO (Defense Research and Development Organization), SERB (Science and Engineering Research Board), UGC (University Grants Commission), NTRF (National Tea Research Foundation) and ICSSR (Indian Council of Social Science Research) resulting in Publications and Patents.

Career Prospects & Higher Studies

Recruiters of our Graduates are from Pharmaceutical, Bio-processing, Food and allied industries and Core Giants which includes Biocon, Zifo R&D solutions, Nestle, Dr. Reddy's Laboratories, Fruzyme, Bioscience Research Foundation, Steril-Gene, VWR labs, Quintiles, IQVIA, Microbiological Laboratory Pvt. Ltd, Novozymes, Bhat Biotech, Biozeen, Biozyme, Molecular Connections, Bharat Serums, Plant Lipids and MedSource Ozone Pvt. Ltd.

The students also opt for higher studies in reputed institutions in India and abroad such as Indian Institute of Technology, National Institute of Technology, Ben Gurion University, Israel; Swinburne University, Australia; University of Sheffield, UK; Katz School of Science, New York, USA and Zuckerberg Institute of Water Research, Israel ; New York Film Academy, Los Angeles, USA.

Institutions of Repute for Higher Studies:

Our graduates availed opportunities to pursue their Post-graduation in the fields of Environmental Biotechnology, Systems Biology, Food Biotechnology, Pharmaceutical Biotechnology, Industrial Biotechnology, Medical Technology as specializations in M.Tech / MS Programs.



MoU's / Collaborations / Internships

Leading industries are tied up with department to equip faculty and students with Industrial skill sets through training and internships.

- National Dong Hwa University, Taiwan for Students / Faculty exchange.
- Mahasarakham University, Thailand for Students / Faculty exchange.
- Bhat Biotech, Bengaluru for internships and projects.
- M/s. Microbiological Laboratories Pvt. Ltd. for Research / Training and Placements.
- M/s. Parry Agro Industries Ltd. for Training & Research.

Testimonial



Mr. Kevin Sujosh
(2017-2021 batch)

I, working as Research Associate at Azenta Inc, Maryland, USA on a Research project in the field of Biobanking Management with the company. I got an offer of 47000\$ per annum (INR ~ 32, 90,000/-).

As a fresher in Research field it's a great experience to work with different people and bring up innovative ideas.

During those four years in the Department of Biotechnology at Karunya University, I experienced a wonderful learning environment in the college as well as in my department. The freedom that I enjoyed around the laboratory of my department helped me develop an insight in scientific research. The teaching methodologies backed by practical skills and the professional interface has given me the confidence to pursue my career ahead. No words to describe the faculties who taught me, they were encouraging, supportive and motivational thus contributing significantly to my career. I wish my best to all the candidates joining the department in the year 2022!

Noteworthy Recognition

The Department holds the highest number of patents, a notable achievement indeed!

The IAESTE-Student Exchange Program has enabled a total of 20 students to pursue research / research internships / training programs in premier institutions in Germany, Brazil, Poland, Athens, Thailand and British Columbia.

The Department has recently launched a CPCSEA approved Small Animal Breeding Facility for breeding and research. A prestigious facility!

We encourage students to take part in Research Innovation contests like Hacathon / Innovation challenges conducted Nationally. A team of students won cash prize of Rs.1,00,000/- for Innovation, Science, Engineering & Arts on the theme "Role of Second Green Revolution in India"

Major Recruiters



The Head of the Department
Department of Biotechnology

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