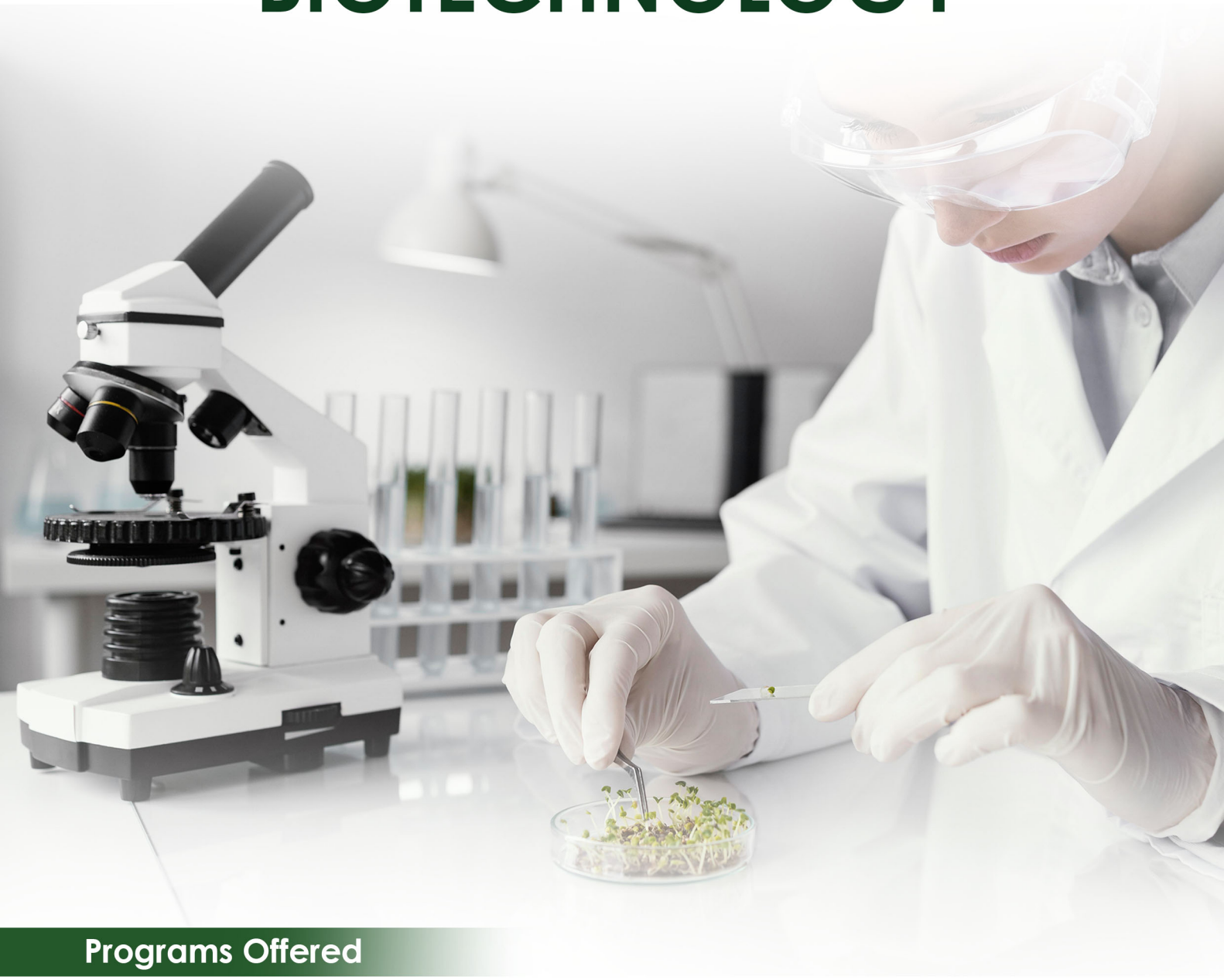
CMS COLLEGE KOTTAYAM (AUTONOMOUS)

ESTD:1817

DEPARTMENT OF BIOTECHNOLOGY



Programs Offered

B.Sc. Botany and Biotechnology (Double Major)

M.Sc. Biotechnology

NAAC A+ Accredited with Grade 4th cycle Grade Point 3.49

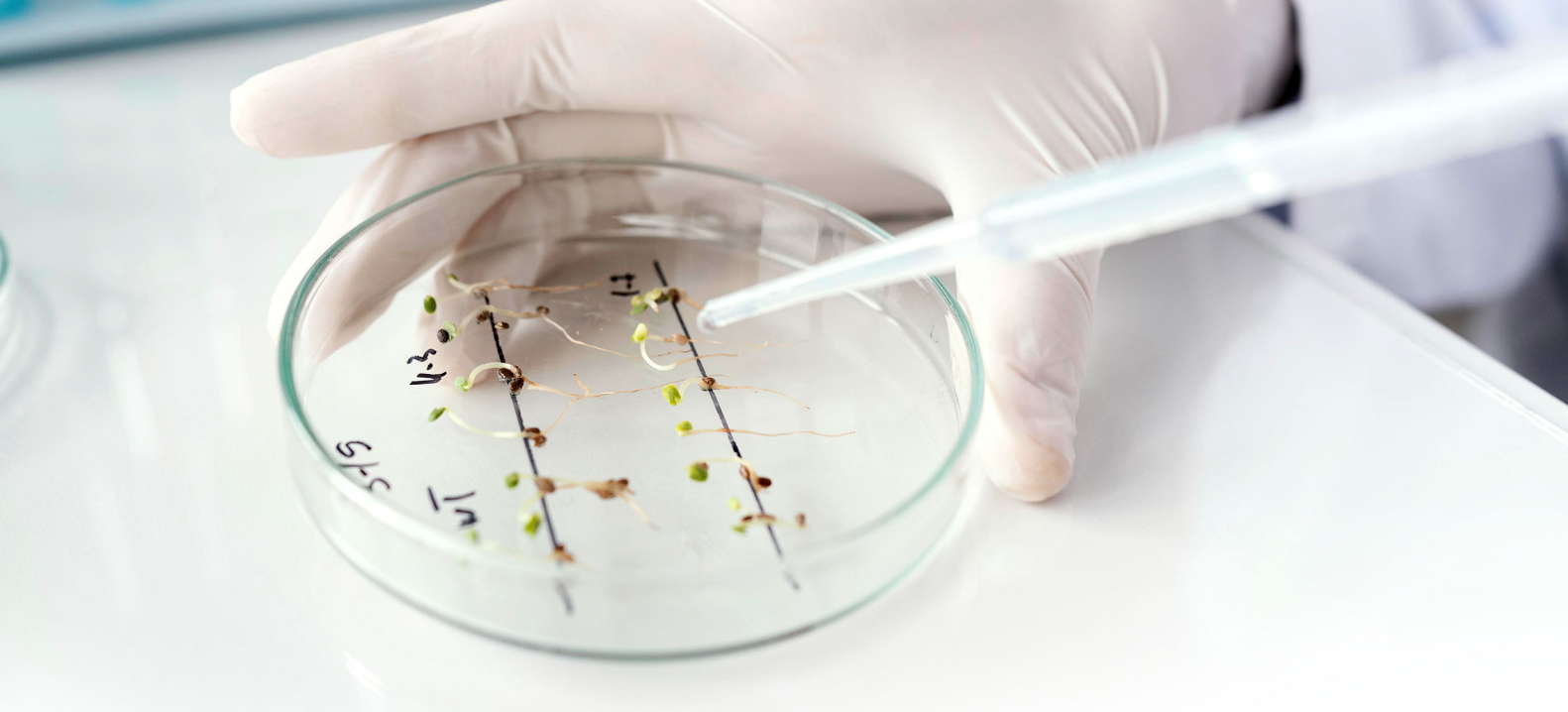
86th RANK NIRF RANKING 2025

13th RANK KIRF RANKING 2025

ISO 9001 CERTIFIED

Highlights

- **State-of-the-Art Facilities** – Well-equipped laboratories for hands-on learning and research.
- **Expert Faculty** – Experienced PhD. educators actively engaged in research and teaching.
- **Innovative Learning** – Emphasizes independent thinking, research, and practical training.
- **Strong Academic Foundation** – Prepares students for careers in research, academia, and industry.
- **Collaborations & MoUs** – Partnerships with national institutes, state, and private organizations.
- **Career Development** – Hands-on training, research internships, faculty and alumni mentorship.
- **Student Association** – Professional upskilling, networking, and extracurricular growth.



Why one choose B.Sc. Botany and Biotechnology (Double major) ?

- **Interdisciplinary Excellence** – Gain expertise in both Botany and Biotechnology, bridging traditional plant sciences with modern innovations.
- **Hands-on Learning** – Experience cutting-edge lab techniques, bioinformatics tools, molecular biology and sustainable research practices in plant sciences.
- **Diverse Career Opportunities** – Open doors to diverse fields like research institutions, biotech industries, pharmaceuticals, agriculture, food industries and environmental conservation.
- **Research & Innovation** – Engage in real-world projects, from micro-organisms to plant-based solutions for global challenges.

Why One Choose M.Sc. Biotechnology?

- Biotechnology is at the forefront of scientific advancements in healthcare, agriculture, environment, and industry. It is the rapidly growing sector with increasing global demand for skilled professionals.
- It offers an interdisciplinary & Future-Ready Curriculum, which combines biology, chemistry, genetics, and technology to solve real-world problems. It also provides hands-on training with modern lab techniques, research projects, and industrial exposure.
- It has diverse career prospects with pathways in research, academia, pharmaceuticals, healthcare, agriculture, bioinformatics, and entrepreneurship.

UG Programme:

Bachelor of science (Honours) Botany and Biotechnology (Double Major) Programme. Course duration: 4 Years (8 Semesters)

Key highlights:

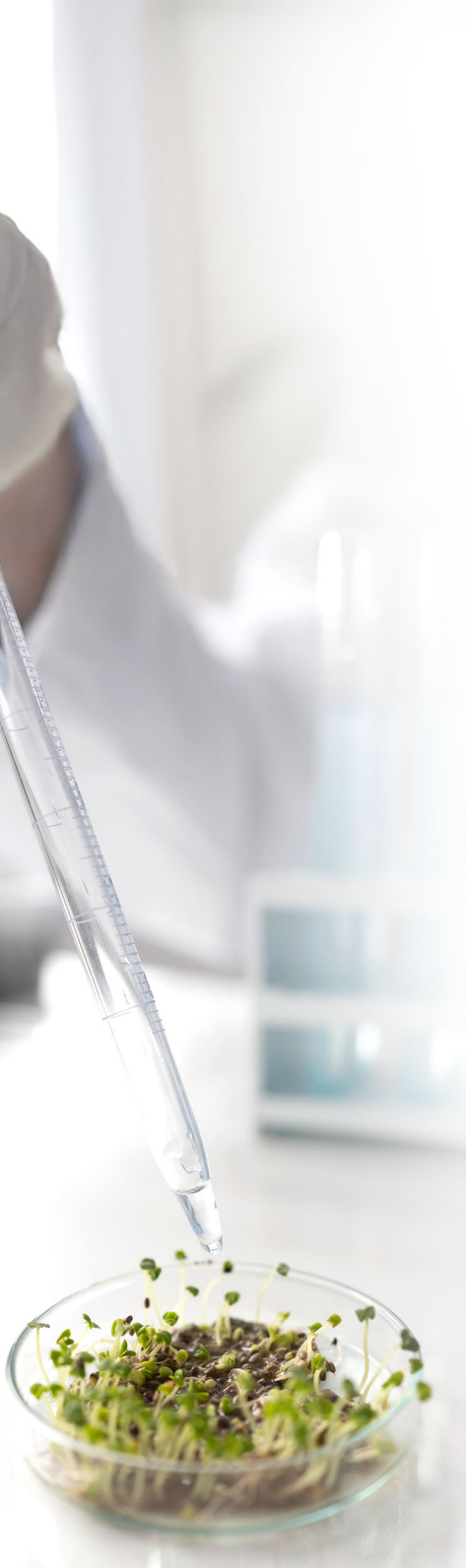
- **Integrated Learning** – Combines core and modern concepts of Botany and Biotechnology.
- **Hands-on Training** – Practical exposure to emerging techniques and research.
- **Innovation & Entrepreneurship** – Encourages inquiry, problem-solving, and startup potential.
- **Engaging Experience** – Makes learning interactive and enjoyable with field and industrial visits.

PG Programme:

M.Sc. Biotechnology. Course duration: 2 Years (4 Semesters)

Key highlights:

- Expanding Biotechnology Sector – A rapidly growing field revolutionizing Research, Industry, Agriculture, Health, and Environment.
- Interdisciplinary Training – Designed to meet the future needs of academia, research, and industry.
- Application-Oriented Curriculum – Emphasis on practical skills and hands-on training in cutting-edge technology.
- Research Project – In-depth study and innovation in emerging biotechnology fields.
- Future-Ready Program – Equips students with skills for careers in research, academia, and biotechnology industries.



Higher options/career pathways
B.Sc. Botany and Biotechnology

Higher Studies:
PG or Integrated PhD in subjects related to Botany, Biotechnology, Microbiology, Bioinformatics, Genetics, Molecular biology, food technology, Forensic science and Environmental Science

Industry Jobs:
- Biotech Companies
- Pharmaceutical Industry.
- Agriculture & Agro-Tech
- Food & Beverage
- Environmental Sector

Research Roles:
- **Scientific Assistant** – Support lab research and data analysis.
- **Computational Biologist** – Analyze biological data using computational tools.
- **Molecular Biologist** – Study DNA/RNA and gene expression.
- **Environmental Consultant** – Advise on sustainable practices and conservation.
- **Horticulturist** – Focus on plant breeding and cultivation.

Career opportunities:
- **Biotechnology & Pharma** – Careers in drug development, genetic engineeringand bioinformatics.
- **Agriculture & Environment** – Roles in plant breeding, agro-biotech, and environmental conservation.
- **Food & Beverage Industry** – Opportunities in food safety, fermentation technology and quality control.
- **Entrepreneurship & Startups** – Bio-based product development, herbal industries, and sustainable innovations.
- **Government Opportunities** – Jobs in state and central agencies like FSSAI, ICAR, CSIR, ICMR, DRDO, DBT and pollution control boards.

Higher options/career pathways
M.Sc. Biotechnology

Research & Academia
- Ph.D. opportunities in leading universities and research institutions.
- Teaching & Lectureship
- Scientific Writing & Journalism

Biotechnology & Life Sciences Industry
- Biopharmaceuticals – Drug discovery, vaccine development, and clinical research.
- Industrial Biotechnology – Enzyme production and synthetic biology.
- Environmental Biotechnology – Waste management, bioremediation, and sustainable solutions.

Healthcare & Diagnostics
- Molecular Diagnostics – Roles in genetic testing and forensic science.
- Regulatory Affairs & Quality Control – Ensuring safety and compliance in biotech products.

Entrepreneurship & Innovation
- Biotech Startups – Developing innovative products and solutions.
- Consulting & Advisory Roles

Government & Public Sector
- Research Assistant/Scientist positions in CSIR, ICMR, DBT, and other government research bodies.

Apply through website:
www.cmscollege.ac.in

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