

**Post Graduate Diploma Course in
MICROBIAL BIOTECHNOLOGY**

(NSQF Level 8 and NHEQF Level 6)

Offered by:

**Department of studies and Research in Biotechnology and Microbiology,
Tumkur University**

Duration of the Course: 1 YEAR (2 Semester)

**Mode of delivery: Hybrid (Online/Offline) On-campus/Off-
campus/Internships/Regular/Evening**

Maximum Number of admission: 20

Fee for the complete course: Rs. 18,000/-

Eligibility Criteria:

Candidates who have passed a B.Sc. degree (Life sciences) and other allied subjects as core/cognate subject from any University recognized by UGC and other statutory bodies all over the country with 50 % aggregate for general students and 45 % for SC/ST/OBC/CAT1 students are eligible for Post Graduate Diploma Course in Microbial Biotechnology.

About the programme:

The Postgraduate Diploma in Microbial Biotechnology is a specialized skill-oriented two-semester program designed as an alternative for student who do not wish to pursue a masters degree/ those who wish to augment their skills in the field of microbiology and biotechnology. The curriculum covers a wide range of topics, including cell biology, microbial genetics, biochemical technology, and advanced areas like industrial microbiology, enzyme technology, and bioprocess engineering. It emphasizes microbial applications in various industries such as agriculture, healthcare, and environmental sustainability. The program integrates both theoretical knowledge and practical laboratory skills, allowing students to explore microbial diversity, fermentation processes, genetic manipulation, and the role of microbes in biotechnology. Advanced techniques like genetic engineering, bioinformatics, and bioproduct development are also key components of the course, ensuring comprehensive training in modern microbial biotechnology practices across two structured semesters. The highlight of the programme is opportunity to undertake two project-based dissertation in-house or in industries.

Who will benefit from the course?

The PG Diploma in Microbial Biotechnology benefits a wide range of individuals. Life science graduates/ post graduates/ employed professionals/ startup entrepreneurs can gain specialized knowledge in microbial systems, providing a competitive edge in research and industrial applications. Professionals in biotechnology and pharmaceuticals can upskill to advance in areas such as drug development, fermentation technology, and bioprocess engineering. Researchers and academics can enhance their expertise in microbial techniques, supporting doctoral studies or research roles. Additionally, entrepreneurs aiming to start biotech ventures in areas like bioproducts, or agriculture can acquire the technical and business skills needed for success.

Job Opportunities:

Job Opportunities after PG Diploma in Microbial Biotechnology:

- Industrial Microbiologist
- Quality Assurance Officer
- Lab Technician (Microbiology/Biotechnology)
- Production Manager (Biotechnology/Pharma industries)
- Enzyme Technologist
- Fermentation Scientist
- Bioprocess Engineer
- Agricultural Biotechnologist
- Healthcare Biotechnologist
- Bioinformatics Analyst
- Research Scientist
- Patent Analyst (Biotechnology)
- Bio-entrepreneurs

PG Diploma in Microbial Biotechnology

Course structures and Credits

I SEMESTER

Semester	Paper	Instruction Hours per Week	No. of credits	Duration of the Exam	Marks		
					Internal Assessment	Semester End Exam	Total Marks
I	Microbial Cell and Biology Molecular genetics	4	4	3	30	70	100
	Biochemical Technology	4	4	3	30	70	100
	Bioproduct Development and Intellectual Property Protection	2	2	2	15	35	50
	Project dissertation	4	4	3	30	70	100
	Practicals based on Microbial Cell Biology and Molecular genetics	4	2	3	15	35	50
	Practicals based on Biochemical Technology	4	2	3	15	35	50
	Practicals based on Project Dissertation	4	2	3	15	35	50
	Total	26	20		150	350	500

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II SEMESTER

Semester	Paper	Instruction Hours per Week	No. of credits	Duration of the Exam	Marks		
					Internal Assessment	Internal Assessment	Internal Assessment
II	Advanced Microbial Biotechnology - I	4	4	3	30	70	100
	Advanced Microbial Biotechnology - II	4	4	3	30	70	100
	Artificial Intelligence and Bigdata in Biological Process Discovery	2	2	2	15	35	50
	Project Dissertation	4	4	3	30	70	100
	Practicals based on Advanced Microbial Biotechnology - I	4	2	3	15	35	50
	Practicals based on Advanced Microbial Biotechnology - II	4	2	3	15	35	50
	Practicals based on Project dissertation	4	2	3	15	35	50
	Total	26	20		150	350	500