

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

- PEO 1** : To provide a sound exposure to students about the theory and practical of microbiology for attaining academic excellence in the field of microbiology
- PEO 2** : To develop the research skills to conduct research in the thrust areas of microbiology to benefit the society. The student shall be able to analyze and interpret scientific data to solve technical, conceptual and abstract scientific problems
- PEO 3** : To develop effective communication skills to disseminate technical information and ability to write effective reports and reviews for scientific journals.
- PEO 4** : Students shall be able to create and develop thought process for environmental preservation by developing environmentally sustainable technologies.
- PEO 5** : To equip students with adequate research knowledge and techniques for successful career in the field of academics, research and industries, and for pursuing higher education.
- PEO 6** : To inculcate entrepreneurship among the students so as to start their own ventures in the field of microbiology and shall be able to develop networking and entrepreneurship skills and establish links with industry and alumni.
- PEO 7** : To develop overall personality and character with team spirit, professionalism, integrity and moral values to serve for the humanity.
- PEO 8** : To make students able to attain leadership skills and perform responsibly as an individual, and as a member in diverse teams in multidisciplinary settings.
- PEO 9** : To make students able to interpret principles of ethics and apply them to develop sensitivity towards various social and cultural issues of the society
- PEO 10** : To make students able to integrate various aspects of microbiology to achieve holistic and societal development

PROGRAMME OUTCOMES (POs)

- PO 1** : Student will be able to apply knowledge to develop critical thought and practical understanding in the field of microbiology to find solutions for human benefits.
- PO 2** : Student will be able to identify, formulate, research literature, review existing knowledge and analyze complex molecular and biochemical problems to reach substantiated conclusions using principles of biology.
- PO 3** : Students will be able to employ and implement their knowledge base in premium processes and applications which will profoundly influence or utilized for existing paradigm of agriculture, industry, healthcare and restoration of degraded environment to provide sustainable competitive edge to present society.
- PO 4** : Students will be able to elect and apply appropriate techniques, resources and modern microbiology tools to indentify and improve beneficial microbes for the humane welfare and sustainable agriculture, with an understanding of the limitations.
- PO 5** :The student will demonstrate the ability to work independently as individuals and flexibly within a team with effectiveness and responsibility
- PO 6** : Students will be able to communicate effectively and write effective reports and design documentation, make effective presentations and give and receive clear instructions related to microbiological research and developmental.
- PO 7** : The student will develop sensitivity to environmental issues and concerns and shall understand principles of ethics within the framework and apply these principles for environmentally and culturally sensitive issues.
- PO 8** : The student shall be able to comply to ethical principles associated with microbiology and society.
- PO 9** : The student will organize the role of personal development, self-directed study and discovery in learning to develop life-long learning.
- PO 10** : The student shall be able to apply microbiological learning to societal issues.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

(A)

- PSO 1 Higher Education-** Master in Microbiology will be eligible for pursuing higher education (M.Phil, Ph.D) in the different field of life science in order to attain research positions. Various examinations such as CSIR-NET, ARS-NET GATE, ICMR, DBT-BET and many other opens channels for promising career in research.
- PSO 2 Problem Solving Skills** – Students will enable to get sufficient knowledge in principles and applications of microbiology to be applied as future prospect.
- PSO 3 Project Management:** Demonstrate research knowledge and understanding of the microbiology and can apply and manage various research and innovation projects funded by government bodies under supervision.
- PSO 4 Research Skills** – Students will be able to develop efficient and effective methodologies based on modern techniques to be used in research institutions and industries.
- PSO 5 Successful Career** – Students will exhibit contemporary theory and research knowledge in microbiology and can peruse career in divers field Industries like pharmaceutical, bio fertilizer industry, aquaculture industries, marine sectors, dairy industries, environmental units, crop production units, food processing industries, national bio-resource development firms, government research institutions etc. as well as in education sectors.
- PSO 6 International Opportunities-**Several career opportunities are available for students with microbiology background abroad in various countries.
- PSO 7 Entrepreneurship-** Students can start entrepreneurship ventures such as consultancy, training centers, diagnostic centre and new innovation using various funding scheme of government.
- PSO 8 Microbiologist and Sustainable Development**– Students will be able to understand the potentials, and impact of microbiological innovations on environment and their implementation for finding sustainable solution to issues pertaining to environment, health sector, agriculture, etc.

(B) Suggested carrier opportunities:

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| 1. Production In-Charge | 11. Research and Development Officer |
| 2. Microbiologist | 12. Quality Assurance Manager |
| 3. Business Development Executive | 13. Executive Manager |
| 4. Research Associate | 14. Assistant Professor |
| 5. Project Associate | 15. Clinical Research Manager |
| 6. Project Scientist | 16. Research Analyst |
| 7. Scientist B | 17. Biostatistician |
| 8. Junior Research Fellow | 18. Entrepreneur |
| 9. Senior Research Fellow | 19. Patent Officer |
| 10. Quality Control Manager | 20. Government officer in various field |

(C) Suggested domains (trainings/workshops etc.) from where student may acquire additional hands-on expertise:

1. Hands-on training on Bioinformatics tools and data analysis
2. Workshop on entrepreneurship and funding scheme
3. Hands-on training on advance bioinstrumentation
4. Hands-on training on Biostatistics
5. Hands-on training on diagnostic techniques
6. Workshop on personality and teaching skill development
7. Hand-on training on genetic engineering
8. Hand-on training on quality control analysis of pharmaceutical products
9. Participation in conference/ workshop/ seminar
10. Minor in-house projects