



Manipal University Jaipur

Faculty of Science, Technology and Architecture

Department of Biosciences

Bachelor of Science in Microbiology (Honours/Honours with Research)

(2026 onwards)

Program Outcomes, Program Specific Outcomes & Program Educational Objectives

Program Outcomes (POs)

- [PO 1]. **Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational and personal) from different perspectives.
- [PO 2]. **Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
- [PO 3]. **Social Interaction:** Elicit views of others, mediate disagreements and help reach conclusions in group settings.
- [PO 4]. **Effective Citizenship:** Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
- [PO 5]. **Ethics:** Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
- [PO 6]. **Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.
- [PO 7]. **Self-directed and Life-long Learning:** Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

Program Specific Outcomes (PSOs)

- [PSO 1]. Apply fundamental microbiological concepts to isolate, culture, identify, and characterize microorganisms using standard techniques.
- [PSO 2]. Perform microbiology experiments by following good laboratory practices, biosafety norms, and quality standards.
- [PSO 3]. Analyze the role of microorganisms in health, industry, agriculture, environment, and public health applications.
- [PSO 4]. Use molecular, bioinformatics, and analytical tools to interpret microbial data and pursue research, higher studies, or industry careers.

Program Educational Objectives (PEOs)

- [PEO 1]. Graduates will acquire a strong foundation in core and applied microbiology, including microbial diversity, physiology, genetics, and immunology.
- [PEO 2]. Graduates will develop hands-on laboratory skills and analytical competence in microbiological techniques, culturing, identification, and biosafety practices.
- [PEO 3]. Graduates will be prepared for higher education, research, and innovation through scientific inquiry, experimentation, and data interpretation in microbiology.
- [PEO 4]. Graduates will be able to apply microbiological knowledge to address industrial, clinical, agricultural, environmental, and public health challenges.
- [PEO 5]. Graduates will demonstrate ethical responsibility, professional conduct, and commitment to lifelong learning and entrepreneurship in microbiology-related fields.