

**Rayat Shikshan Sanstha's**  
**Mahatma Phule Mahavidyalaya, Pimpri, Pune-17**  
**Department of Microbiology**  
**2021-2022**  
**Program outcome**  
**(UG)**

Name of the Program	Program outcome
B.Sc. (Microbiology)	<p><b>PO-1: Theoretical and practical Knowledge:</b> Science learners are encouraged to apply the knowledge of science fundamentals to solution of various complex global challenges. A student is exposed to a wide range of theory and practical topics in various subjects and is given intensive hands on training and laboratory related work in each of the courses. The learner is encouraged to use various scientific methods (observational, analytical and numerical) and experimental methods as an application to the acquired concepts and principles that help in studying various branches of sciences. At the end of the program, students are able to gain thorough knowledge in key areas in the subjects offered.</p> <p><b>PO-2: Problem Analysis Approaches:</b> Students are able to understand and use analytical approaches to interpret and analyse results so obtained from experimental data and draw suitable conclusions against their supported data acquired. At the end of the program, students will be able to identify, formulate and analyse scientific problems and reach concrete solutions using various principles of mathematics and sciences.</p> <p><b>PO-3: Experimental and Solution Designing Approaches:</b> Students are able to think out of box with proper acquired knowledge of various subjects, students are trained to think out of the box, design and conduct an experiment or a series of experiments that demonstrate their understanding of the methods and processes involved.</p> <p><b>PO-4: Modern tool usage:</b> students are trained to create, select, and apply appropriate techniques and resources through practical knowledge and IT tools through training programmes.</p> <p><b>PO-5: Communication Skill:</b> English being a language of instruction, learning, writing and communication skills of learners will be improved where students are capable of explaining complex things in easy way. Students can able to</p>

get placements in various fields.

**PO-6: Employability of the Programme:** Equip students with skills needed to adapt better to the changing global scenario and gain access to versatile career opportunities in multidisciplinary domains. To equip learners with knowledge other than that of the subject such as skills required helping them qualify for jobs, all the science subjects offer skill enhancement courses and value added courses so that learners have a better edge over their counterparts.

**PO-7: Ethical Values:** Spirit of competitiveness among students is ever emerging, therefore it is equally important to develop a strong sense of ethical values among the learners to develop positive attitudes and values. This includes appreciation of the various principles and theories that evolved in science, the impact that science has on social, economical and environmental issues. Motivation may come from our understanding of the natural world in which we live. Advances in physics, chemistry, biology, and other sciences in the past two or three centuries have enriched not only our understanding of, but our ability to shape, the natural world.

**PO-8: Science for Environmental Sustainability:** Nature is under pressure as never before because of the population explosion, civilization and modernization. Our needs for food, water and land, and our demands for energy and more and more stuff are destroying habitats, polluting our air and water, and driving species of animals and plants to extinction. Academics should not remain quarantined from such issues. Through classroom discussions and research projects, this programme facilitates active dialogues with factors which influence human-ecology interactions. As such, at the end of this programme students will be able to identify and analyse socio-political, cultural and economic problems.

**PO-9: Soft-Skill Development:** Apart from the attainment of knowledge and hands on skills in practical applicability of the subject, learners need to be equipped with soft-skills and values which will help them function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary groups. These soft skills include leadership, teamwork, project-management, positive outlook, innovative approaches etc. As such, at the end of this programme, students will be able to hone the soft-skills

required in positively enhancing their academic, professional and personal pursuits towards self and societal advancement.

**PO-10: Social Awareness:** To create awareness to become conscious citizens with a sense of responsibility towards their surrounding irrespective of any man made differences.

**PO-11: Business Skills:** The course is reasoning and application based, making the students eligible for higher studies, jobs in various sectors and entrepreneurship abilities.

**PO-12: Life-long learning:** With the pursuit of knowledge for either personal or professional reasons, learners are also encouraged to volunteer and be self-motivated that not only enhances society values, active participation and personality development, but also enhances self-sustainability, competitiveness and employability.

## Program Specific Outcome (UG)

Name of the Program	Program Specific outcome
B. Sc. Microbiology	<p><b>PSO 1:</b> Develop the working knowledge and applications of instrumentation and laboratory techniques. Enabling the students to apply skills to design and conduct independent experiments and interpret.</p> <p><b>PSO 2:</b> To enrich student knowledge and train them in a pure microbial science.</p> <p><b>PSO 3:</b> To introduce the concepts of application and research in Microbiology.</p> <p><b>PSO 4:</b> To inculcate sense of scientific responsibilities and social and environment awareness. Ability to understand the concepts of key areas in Microbiology.</p> <p><b>PSO 5:</b> Learn and apply principles of microbiology in day today life and in applied fields like industry or institution.</p> <p><b>PSO 6:</b> Provide a conducive environment to unleash their hidden talents, creative potential, nurture the spirit of critical thinking and encourage them towards higher education.</p> <p><b>PSO 7:</b> Equip students with skills needed to adapt better to the changing global scenario and gain access to versatile career opportunities in multidisciplinary domains.</p> <p><b>PSO 8:</b> The Human Microbiome will equip you to help solve some of the world's most pressing problems involving food, water, disease and the environment.</p>