



Government Science College, Gandhinagar
Program Specific Outcomes (PSOs)
of
B.Sc. Microbiology



Microbiology is the study of all living organisms that are too small to be visible with the naked eye. This includes bacteria, archaea, viruses, viroids, virusoids, prions, fungi, protozoa and algae, collectively known as 'microbes'. These microbes play key roles in nutrient cycling, biodegradation/biodeterioration, climate change, food spoilage, infectious diseases etc. Thanks to their versatility, microbes can be put to work in many ways: making life-saving drugs, enzymes, proteins and biofuels, cleaning up pollution, and producing/processing food and drink. Microorganisms grow quickly in the laboratory at very low cost; hence they are used as model organisms to study life processes. Additionally they provide fundamental tools of rDNA technology therefore microbiology serves as the mother of modern biotechnology.

Knowledge of different aspects of microbiology has become crucial and indispensable to everyone in the society. Study of microbes has become an integral part of education and human progress. Building a foundation and a sound knowledge-base of microbiological principles among the students will lead to an educated, intellectual and scientifically advanced society.

Followings are Program Specific Outcomes of B.Sc. Microbiology.

PSO1: Students will be able to understand fundamental principles of Microbiology. Acquire detail knowledge of microorganisms, their types, their interactions with each other and with nature and their significance.

PSO2: Students will understand the contributions of various scientists in microbiology and develop scientific temperament, ability to raise questions, look for novelty and understand how discovery happens in scientific world.

PSO3: Students will get in depth concepts of basic bacteriology, mycology, virology, molecular biology of prokaryotes, bacterial genetics, bacterial metabolism, rDNA technology, immunology, medical microbiology, fermentation technology and biotechnology.

PSO4: Students will develop skills related to bright field microscopy, sterilization, disinfection, isolation-identification and maintenance of pure culture of microorganisms, hematology, antigen-antibody reactions, fermentative production of microbial metabolites, microbial analysis of soil, food, water, milk etc. Students will have the specialized skills to handle microbes safely in laboratory settings.

PSO5: Students will be able to solve the problems related to infectious diseases caused by microorganisms, pollution of water - soil - air, hematological abnormalities, fermentative production of microbial metabolites etc.

PSO6: Students will be able to do clear and accurate science communication, both to scientists and to the public. In the current era of the internet, microbiology graduates will be able to cut through misinformation. Additionally students will develop the professional and “soft” skills needed to succeed in future life.