

# **B.Sc. Microbiology**

## **Where Curiosity Meets Discovery**

### **About the Programme**

Explore the invisible world that shapes life, health, and industry. The B.Sc. Microbiology programme at P. Jog College of Science and Commerce blends rigorous science with hands-on laboratory exposure, preparing students to become innovators in healthcare, biotechnology, research, and beyond.

### **Programme Objectives :**

- Build a solid base in microbiology, biochemistry, cell biology, and molecular methods.
- Strengthen analytical and experimental skills through hands-on labs.
- Foster scientific reasoning, problem-solving, and research aptitude.
- Promote ethical practice and environmental responsibility.

### **Course Outcomes :**

- Understand microbial structure, physiology, genetics, and disease processes.
- Gain proficiency in key lab techniques—microscopy, culturing, staining, sterilization, and molecular assays.
- Evaluate microbial roles in health, environment, industry, and biotechnology.
- Apply scientific knowledge to real-world biological and environmental issues.

### **Career Opportunities :**

- Laboratory Technician
- Quality Control/Assurance Analyst
- Clinical Research Assistant
- Food & Dairy Microbiologist
- Environmental Microbiologist

# Syllabus Structure

## First Year (SEM I , II)

<b>Semester I</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
MB-101-T	Introduction to Microbiology	2
MB-101-P	Laboratory Techniques in Microbiology-I	2

<b>Semester II</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
MB-151-T	Basic Microbiology	2
MB-151-P	Laboratory Techniques in Microbiology-II	2

## Second Year (SEM III , IV)

<b>Semester III</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
MB-201-MJ	Medical microbiology and Immunology	2
MB-202-MJ	Bacterial Physiology and fermentation	2
MB-203-MJP	Applications of microbiology I	2

<b>Semester IV</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
MB-251-MJ	Bacterial Genetics	2
MB-252-MJ	Air and water Microbiology	2
MB-253-MJP	Applications of microbiology II	2

## Second Year (SEM V, VI)

<b>Semester V</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
MB 351	Medical Microbiology-I	2
MB 352	Immunology-I	2
MB 353	Enzymology	2
MB 354	Genetics	2
MB 355	Fermentation Technology-I	2
MB 356	Agricultural Microbiology	2
MB 357	Practical course-I based on: MB 351, MB 352	2
MB 358	Practical course-II based on MB 353, MB 354	2
MB 359	Practical course-III based on: MB 355, MB 356	2

<b>Semester VI</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
MB 361	Medical Microbiology II	2
MB 362	Immunology II	2
MB 363	Metabolism	2
MB 364	Molecular Biology	2
MB 365	Fermentation Technology II	2
MB 366	Food Microbiology	2
MB 367	Practical course-I. Based on: MB 361, MB 362	2
MB 368	Practical course-II. Based on: MB 363, MB 364	2
MB 359	Practical course-III based on: MB 355, MB 356	2

