

Department of Microbiology

Course Objective-

1. To make the students knowledgeable with respect to the subjects and its practical applicability.
2. To promote understanding of basic & advanced concepts in Microbiology.
3. To expose the students to different processes used in Industrial and in research field.
4. To prepare the students to accept challenges in life science.
5. To develop skills required in various industries, research labs and in the field of human health.

Course / Program- B.Sc. in Microbiology

Duration- Three Years

Affiliation- Shivaji University, Kolhapur.

Pattern of program- Semester

Course Structure-

B.Sc. Part-II Sem-III Paper- V & VI

Sem-IV Paper- VII & VIII

B.Sc. Part-III Sem-V Paper- IX,X,XI,XII

Sem-VI Paper- XII, XIV, XV, XV, XVI

Annual Practical – Paper- I, II, III, IV

Course Type- Grantable

Course Outcomes - (CO)

1. Students are able to analyze quality of the sample e.g.- Water, Sample, Milk sample etc By conducting various Microbiological tests.
2. Students are capable to understand new technique employed for research field & different processes adopted in Industries

3. Awareness regarding the applicability is developed among the students.
4. Student is prepared for accepting challenges in life science as well as skill required for various research areas is developed among the students.
5. Student is able to understand basic & advance concept related with the subject.

Programme Outcome- (PO)

For B.Sc. Microbiology the University expectation are as follow.

1. Preliminary examination of pathogen – By using the knowledge regarding stains and staining procedure students can identify the morphological features of pathogen which will useful in identification of causative agent of the disease.
2. Bacteriological examination of water sample- After conducting MPN, IMUIC & Presumptive test one cal determine the number of coli forms present in water sample, so that the pot ability of water can be determined, which is useful for water testing.
3. Microbial examination of milk sample – Designing the procedure for bacteriological presence in milk sample and conducting various tests student can analyze the quality e.g.-Milk (MBRT, Direct microscopic test). This knowledge regarding the quality determination test is useful in Dairy Industry.
4. For food preservation different procedures of test are also conducted at Lab, which will help them understand the cause of microbiological spoilage of food & prevention & to maintain quality of food. It is applicable in food industry.
5. Isolation technique regarding the isolation of various soil bacteria including Rhizobia, Azotobactor etc. is useful for the preparation of biofertilizers.
6. Modern equipment usages- Use of advance equipment for the practical purpose as well as research purpose is helpful for the students.
7. The sense of social responsibility, morals is developed among the students during the course.
8. Students have to conduct practicals same work at Laboratory either individually or in group. Which will develop the awareness regarding team work among the students?
9. Social responsibility & communication- Students are capable to satisfy the need or industrial demand and can become self supportive economically.
10. Students with knowledge regarding various aspect of Microbiological concepts can approach to various Industries as well as overall development.

Programme Specific Outcome (PSO)

1. Understand the basic concept of cytology, Genetics, Medical science, virology, Soil microbiology/ Agriculture Microbiology & Industrial Microbiology.
2. Analytical technique regarding water, Soil, Milk & food analysis will help for improving quality of these components. Which is essential before usage soil fertility testing is useful as it promotes or enhances crop yield use of biofertilizers is significant for improving soil fertility.
3. Understanding industrial processes (especially fermentations) is useful for production of industrial product as well as quality determination of the product. Commercial production of industrial product is possible by using specific microbial strain.