

Departmental Profile: Microbiology

About the Department:







Department of Microbiology started in 1980 and now recognized as centre of excellence in teaching and learning microbiology with respect to undergraduate and post graduate studies in the central part of India. The department aims to stimulate an interest in the social and economic implications of Microbiology in society. The intake capacity of undergraduates is 100 and 22 for post graduation. We have successfully completed five years UGC sponsored and R.T.M. Nagpur University, Nagpur recognized certificate course, career oriented programme in Clinical Laboratory Technology. The same course is restarted from 2016 on Self Finance basis with intake capacity of 40. Department has well-equipped spacious laboratories for UG and PG with sophisticated instruments set ups, computers and internet facility as well as departmental library.

Sophisticated Major Instruments:

- Gel Documentation, Model Gusto
- Trinocular Microscope with Microscope image projection system, Make Olympus
- Polymerase Chain Reaction (P.C.R.) Eppendorf with 98 wells, master cycle gradient
- Double Beam UV Visible Spectrophotometer, Shimadzu Model UV-1800 quartz cuvettes USB Cable Software CD.
- Fermentor, Shree Biocare India, Cap 3 lit
- UV Transilluminator, with filter (25 cm x13cm) Bio – Safety Cabinet Class II, type A2 , 4’x2’x2’G/powder coated micro-fit make.
- Deep Freezer, Remi Quick freezer, BDF 2822

Recent Achievement of Students:

Two students of B. Sc. final year cleared IIT JAM entrance exam (Biology) for the year 2017-18.

Name	Designation	Qualification	Area of research
 Dr. Mrs. S.S. Khandare	Asso.Prof and Head, Department of Microbiology.	M.Sc. Ph.D.	Environmental, Industrial & Food microbiology.
 Dr. Ulka. A. Malode-	Asst. Professor, PG Co-Ordinator, Add on Course Co-ordinator	M.Sc. Ph.D.	Agricultural & Environmental microbiology.
 Ms. H.S. Kitey	Asst. Prof. (on contractual basis)	M.Sc.	Agricultural & Environmental microbiology.
 Mr. M.G. Ingale	Asst. Prof. (on contractual basis)	M.Sc. NET (CS IR), ICAR NET.	Environmental microbiology. (Bioremediation & nitrogen fixation)
 Mr. S.V. Kombe	Asst. Prof. (on contractual basis)	M.Sc. NET (CSIR), SET, G ATE, ICAR NET.	Environmental microbiology, Phy cology.
 Ms. P.R. Thote	Asst. Prof. (on contractual basis)	M.Sc.	Environmental microbiology.

Non-teaching Staff:

Name	Designation	Experience
Mr. Rajendra Brahmankar	Laboratory Assistant	10 years
Mr. Premanand Ambade	Laboratory Attendant	13 years
Mrs. Sandhya Karnake	Laboratory Attendant	12 years
Miss. Rajani	Laboratory Attendant	13 years

Highlights of the syllabus (B. Sc. and M. Sc.) under Autonomy:

The course is designed to ensure that the graduating and post graduating students with Microbiology subject will have the academic standard require to stand in many allied fields in India and abroad and to face any national competitive exams. The skill and practicals incorporated in autonomy syllabus will help them to get job opportunities in nearby industrial area.

UG Syllabus covers Microbial Physiology, Industrial Microbiology, Medical Microbiology, Immunology, Industrial microbiology, Agricultural and Environmental microbiology, Food microbiology, Genetic Engineering, Molecular Biology, Advance techniques in Microbiology. Syllabus includes innovative projects for B. Sc. I year students ,helps to inculcate research attitude among the students.

After completion of M. Sc. Students will get the knowledge of DNA cloning, Transformation, Restriction Digestion, PCR, Animal and Plant Tissue Culture, Fermentation Kinetics, Industrial Production of Antibiotics, Single cell Proteins. Students will have sound skills in identification of bacteria and various techniques like Gel Electrophoresis, Ion Exchange Chromatography, ImmunoElectrophoresis, SDS-PAGE.

Microbiology-Biotechnology society:

The purpose of the formation of society by students is to provide platform for them to explore their ideas related with subject. The society organizes various activities like guest lectures, poster competition, wall magazine, educational tours etc. Students arrange guest lectures of eminent personalities. This society helps to develop the leadership qualities among the student. Prof. Incharge of this society is Dr. Ulka Malode.

Virtual lecture Series:

The department conducts virtual lectures by eminent scientist and academicians from India and abroad for the PG students. Students get benefited from this programme since there are interactive sessions with the scientists. Dr. Trupti Gogte , BITS, Dubai, Prof. Dr. Tanzima Yeasmin Department of Microbiology, Rajshahi University, Bangladesh, Prof. Dr. A.M. Deshmukh, Former Prof. and Head, Department of Microbiology, Babasaheb Ambedkar Marathwada University (BAMU), Sub Centre-Osmanabad, Dr. Rajpal Singh, Kashyap, CIIMS, Nagpur has delivered the lectures in this series. Dr. Ms Suhas Khandare is keen to arrange these lectures for the students.

Workshops:

Department regularly organized workshops under Edu-bridge between JBCS-NCCS, Pune as well as in collaboration with Hi Media Laboratories. Scientists from National Center for Cell Science, Pune conducted the workshops on Proteomics, Bioinformatics, Protein separation by SDS-PAGE Nanotechnology, Research, Career and ethics. Workshops are also conducted in collaboration with Hi media, Gujarat, for M. Sc. Microbiology students as well as for M. Sc. Botany and M. Sc. Zoology students on Restriction fragment length Polymorphism..Dr. Ms Suhas Khandare heading this activity with cooperation of other faculties.

Microbio-Olympiad Microbiological Contest:

State Level Microbio-Olympiad Microbiological Contest organised in collaboration with R.C Patel College, Shirpur, Dhule and Microbiologists society of India. This contest is very good platform for the students of B.Sc. part I, II and III categories to access themselves on state level. Dr. Ms Suhas Khandare is looking after this activity

Industry-Academia Interaction Programme:

Department of Microbiology regularly arranges educational tours under industry-academia programme. Some of the institutes where student visits are Rajiv Gandhi Biotechnology Centre, Central Citrus Research Institute, Government Institute of Forensic Science, Nagpur, National Environmental Engineering Research Institute (NEERI), Bio-Era, Pune. Students get benefited by this study tour since they get familiar with the working of these laboratories and different sectors in research institutes. Dr. Ulka Malode is looking after this programme.

Social Outreach Programme of the Department:

Microbiology students should dispense their knowledge and take the subject to the society. With this idea Dr. Ms. Suhas Khandare started the social outreach programme for the students of UG and PG. The student take their topic to the school going childrens. Zilla Parishad and Nagarpalika Schools are selected where childrens from economically poor background studies. These students are guided by power point presentations on different topics like their personal hygiene and microorganisms, Microbes in day today life, water borne diseases during rainy seasons, Importance of washing of hands, Environment protection and preservation, Soil pollution etc. By performing this activity students remain attached with this sector of the society.

Achievements by faculty and students/Awards:

- Dr. Ms. S. S. Khandare delivered **Invited Talk** At AMI - International Symposium, BBAU, (Central University) Lucknow on 17 Nov.2017 on **Partial purification and characterization of novel pediocin produced by *Pediococcus acidilactici* CSI29MX for management of foodborne pathogens.**
- Best paper presentation award to Dr. Ms. S. S. Khandare in the International conference on 'Microbial Technology for Better Tomorrow organized by Dept. of Microbiology, Dr. D. Y. Patil Arts, Commerce and Science College Pune, in association with Microbiologists society of India, on 17 to 19 Feb.2018, entitled '**Partial characterization and purification of novel class IIa Pediocin produced by *Pediococcus parvulus* MF233 isolated from batter of idli, a traditional fermented food of south India for management of food borne pathogens.**
- Seven M.Sc. students participated and presented the paper in National and International Conference in 2017-18.