

**J.K.COLLEGE**  
**PURULIA (WEST BENGAL)**  
**DEPARTMENT OF MICROBIOLOGY**

PROGRAM	PROGRAM OBJECTIVES	PROGRAM SPECIFIC OBJECTIVES
<p style="text-align: center;">B.SC MICROBIOLOGY</p> <p>• <b>B.SC FIRST YEAR</b></p>	<p>To enable the students to</p> <ul style="list-style-type: none"> <li>• Acquire knowledge on the fundamentals of microbiology for sound and solid base which enables them to understand the emerging and advance concepts in life science.</li> <li>• Acquire experimental skills relevant to microbiology.</li> <li>• Acquire knowledge in domain of microbiology enabling their applications in Industry and Research</li> <li>•</li> </ul> <p style="text-align: center;">Make them to explore the scope of avenues of microbiology by pursuing higher studies, field-work and/or educational visits</p>	<ul style="list-style-type: none"> <li>• The main objective of the course is to provide students with the basis to face the study of the major fundamentals of microbiology including bacteriology, virology.</li> <li>• The course aims to provide an advanced understanding of the core principles and topics of Biochemistry and their experimental basis through practical classes.</li> <li>• To impart knowledge of basic microbiology practical's.</li> <li>•</li> </ul>
<p>• <b>B.SC SECOND YEAR</b></p>	<p style="text-align: center;">DO</p>	<p>To learn about:</p> <ul style="list-style-type: none"> <li>• The major features of growth and metabolism of microorganisms including determination of growth curve environmental influence on the microbial growth and primary and secondary metabolism, and microbial relationships.</li> <li>• Energy source for microorganisms and relationship between metabolism and energy source.</li> <li>• In this course, we will explore the vast range of physiologies and metabolisms found throughout the microbial world.</li> </ul>



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		<ul style="list-style-type: none"> <li>• Acquire basic knowledge about how physical methods can be applied to understand biological processes</li> <li>• Developing an understanding of the relation between structure, function and dynamics of biological macromolecules.</li> </ul>
<ul style="list-style-type: none"> <li>• B.SC THIRD year</li> </ul>	DO	<ul style="list-style-type: none"> <li>• To impart knowledge about immunology and GENETICS including the nature of pathogenic microorganisms, pathogenesis, laboratory diagnosis, transmission, prevention and control of diseases common in the country.</li> </ul> <p>To learn about:</p> <ul style="list-style-type: none"> <li>• Microbial ecology which focuses on life of tiny organisms and how they interact with their environment and shed light on how important microbes are to the ecosystems they inhabit.</li> <li>• The Applied Microbiology course aims to impart the students with basic principles of Microbiology and their applications to humankind.</li> <li>• In third year, students have to submit different group projects done under the supervision of departmental teachers, and thus they gain knowledge about research work.</li> </ul>
SEMESTER I	<p>To enable the students to</p> <ul style="list-style-type: none"> <li>• Acquire knowledge on the fundamentals of microbiology for sound and solid base which enables them to understand the emerging and advance concepts in life science.</li> <li>• Acquire experimental skills relevant to microbiology.</li> </ul>	<ul style="list-style-type: none"> <li>• Introduced students with the microbes, and study of different structure of microbes, types of microbes theoretically and as well as preliminary practical knowledge.</li> <li>• In this semester students gathered knowledge about bacteriology, and virology.</li> </ul>



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	<ul style="list-style-type: none"> <li>Acquire knowledge in domain of microbiology enabling their applications in Industry and Research</li> <li>Make them to explore the scope of avenues of microbiology by pursuing higher studies, field-work and/or educational visits</li> </ul>	
SEMESTER II		practical classes: hands-on experiments are conducted by students with guidance from lecturers, teaching assistants and tutors, objectives of this program is to betterment of students in practical's
SEMESTER III	Do	<p>To learn about:</p> <ul style="list-style-type: none"> <li>The major features of growth and metabolism of microorganisms including determination of growth curve environmental influence on the microbial growth and primary and secondary metabolism, and microbial relationships.</li> <li>Energy source for microorganisms and relationship between metabolism and energy source .</li> <li>Various methods of assessment and usually it is in the form of examinations (class tests, internal assessment etc), quizzes, lab reports assessment, assignment, presentations and practical tests</li> <li>The forms of questions are as follows: questions with multiple choices answers, essay, short answer questions and assessment of laboratory practical .</li> </ul>



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SEMESTER IV	DO	<ul style="list-style-type: none"> <li>• Study genetics and Recombinant DNA technology (RDT) in one paper and INDUSTRIAL, FOOD AND DAIRY MICROBIOLOGY and food .</li> <li>• In SEC (skill enhancement course) student learn about different microbiological analysis method of air and water. And thus become familiar with the types of microorganisms present in college drinking water and college air environment(indoor and outdoor).</li> </ul> <p>SEC Enables the students to</p> <ul style="list-style-type: none"> <li>• Determine the potability of water using standard qualitative and quantitative procedure and thus aware all, whether the drinking water is potable or not.</li> </ul>
SEMESTER V		<ul style="list-style-type: none"> <li>• To impart knowledge about immunology and medical microbiology including the nature of pathogenic microorganisms, pathogenesis, laboratory diagnosis, transmission, prevention and control of diseases common in the country.</li> <li>• To acquaint the students with various aspects of basic and applied industrial microbiology &amp; clinical microbiology.</li> <li>• To develop skills and competencies in standard microbiological laboratory technique.</li> <li>• In DSE(DISCIPLINE SPECIFIC</li> </ul>



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		<p>ELECTIVES) course students learn about advances in microbiology ;the role of microbes in sustainable agriculture and development</p> <ul style="list-style-type: none"><li>• to impart knowledge about instrumentation and bio techniques.</li></ul>
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