

<b>Course title:</b> Molecular Microbiology and Immunology			
<b>Course code:</b> BBP 131	<b>No. of credits:</b> 2	<b>L-T-P:</b> 30-0-0	<b>Learning hours:</b> 30
<b>Pre-requisite course code and title (if any):</b> BBP161 Principles of Biochemistry and Biophysics (semester 1)			
<b>Department:</b> Department of Biotechnology			
<b>Course coordinator:</b> Dr. Chaithanya Madhurantakam		<b>Course instructor:</b> Dr. Chaithanya Madhurantakam	
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<b>Course type:</b> Core		<b>Course offered in:</b> Semester 2	
<p><b>Course description:</b></p> <p>The course is designed to provide students with basic concepts, principles and applications of molecular microbiology and immunology. The course aims to introduce microbial systems to the students and molecular basis of microbial pathogenicity and resistance. Various mechanisms employed by microbes against host immune responses will be covered at a molecular level. The course will provide information on microbial growth patterns and pathogens. Further, basic concepts in immunological responses including adaptive T cell and B cell responses will be described including T cell receptor/MHC interactions and antigen-antibody interactions. The section on molecular assays and techniques will comprehensively provide concepts and principles of major microbiological and immunological methods employed regularly in research laboratories. Finally, through this course, actual concepts and insights within cancer biology and potential anti-cancer therapies are provided.</p>			
<p><b>Course objectives:</b></p> <ol style="list-style-type: none"> <li>1. To introduce students to pathogens and microbial systems that have commercial applications.</li> <li>2. Providing students with fundamentals of microbial growth and kinetics.</li> <li>3. Familiarizing students with concepts of microbial drug resistance and the underlying molecular basis.</li> <li>4. Acquainting students with basic concepts of immunology, with a focus on the molecular bases underlying TCR/pMHC and antibody/antigen interactions</li> <li>5. Familiarizing students with various molecular techniques employed in microbiology and immunology.</li> <li>6. Acquainting students with molecular mechanisms underlying cancer development and anti-cancer therapies.</li> </ol>			