

Course title: Plant and Animal Biotechnology			
Course code: BBP 123	No. of credits: 2	L-T-P: 30-0-0	Learning hours: 30
Pre-requisite course code and title (if any): Science graduate			
Department: Department of Biotechnology			
Course coordinator: Prof. Shashi Bhushan Tripathi		Course instructor: Prof. Shashi Bhushan Tripathi /Dr. Souren Paul	
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Course type: Core		Course offered in: Semester 1	
<p>Course description:</p> <p>The broad objective of the present core course is to provide an overview of plant and animal biotechnology. In this respect, students will be acquainted with principles and applications of different techniques of plant and animal cell/tissue culture and genetic transformation. In case of cell and tissue culture, the focus shall be on media composition and preparation, methods of <i>in vitro</i> regeneration, their applications and limitations. With respect to genetic transformation, the focus will be on detection and characterization of transformants. Further, the global status of GMOs, various case studies illustrating the application of biotechnology in developing crop varieties resistant to various biotic and abiotic stresses, enhancing nutritional quality and knock-out animal technology would be dealt in detail.</p>			
<p>Course objectives:</p> <ol style="list-style-type: none"> 1. To introduce the students to the principles and applications of plant tissue culture and animal cell culture 2. Development of plant transformation vectors specifically designed to facilitate transfer of improved/unique genetic traits to plants, and to provide knowledge on diverse genetic transformation technologies available for the production of transgenic plants in crop improvement programs. 3. Familiarization with knock-out and transgenic animals to model disease and study gene function. 			