

Learning Outcomes	1. Comprehend the mechanisms of immunological responses. 2. Apply the principles of cellular ontogeny and the gene rearrangement to understand the novel and complex immune system.	
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Programme: M.Sc. (Microbiology)

Course Code: MIPE-402

Title of the Course: IMMUNOLOGY [P]

Number of Credits: 1, Practical

Contact hours: 30

Effective from Academic Year: 2022-23

Prerequisites	Basic knowledge of pathogens, haematology and principles of immunology.	
Objective:	Hands-on practice for various techniques used in immunology.	
Content:		(30)
1.	Haemagglutination: Blood grouping - ABO and Rh systems	
2.	Immunodiffusion slide technique	
3.	Agglutination tests for <i>Salmonella</i> -antigens	
4.	Complement fixation test	
5.	C-reactive protein determination	
6.	ELISA	
7.	Rapid tests – Malaria antigens Pv/Pf, IgM/IgG antibodies for Dengue, Hepatitis HBsAg	
8.	Rheumatoid Arthritis Factor determination	
Pedagogy:	Hands-on experiments in the laboratory, video, online data	
References/ Readings	As given under Theory Course MITE-402	
Learning Outcomes	Apply techniques in immuno-diagnosis.	

Programme: M.Sc. (Microbiology)

Course Code: MITE-403

Title of the Course: AGRICULTURE MICROBIOLOGY [T]

Number of Credits: 3, Theory

Contact hours: 45

Effective from Academic Year: 2022-23

Prerequisites	It is assumed that the students have knowledge about microorganisms and their diversity.	
Objective:	The course deal with the information about Inter-relationship of soil and microorganisms, different groups of beneficial microorganisms in agriculture, microbes as biofertilizer, plant pathogen and biocontrol agent.	
Content:		
1.	Soil Microbiology	(15)