

Department of Liberal Education
Era University, Lucknow
Course Outline
Effective From: 2023-24

Name of the Program	B.A. / B.Sc. (LIBERAL EDUCATION)		Year/ Semester:	2nd /3rd	
Course Name	Immunology Practical Training	Course Code:	MB201P	Type:	Practical
Credits	01		Total Practical Hours:	30 Hours	
Evaluation Spread	Internal Continuous Assesment:	10 Marks		End Term Exam:	15 Marks
Type of Course	<input type="radio"/> Compulsory	<input checked="" type="radio"/> Core	<input type="radio"/> Creative	<input type="radio"/> Life Skill	
Course Objectives	<ul style="list-style-type: none"> This course will give the knowledge of collecting the plasma and serum from blood. Through this learner will be able to determine blood group and Rh factor of an individual. 				
Course Outcomes(CO): <i>After the successful course completion,learners will develop following attributes:</i>					
Course Outcome (CO)	Attributes				
CO1	Students will learn and understand how to collect the plasma from blood.				
CO2	Students will learn and understand how to collect the serum from blood.				
CO3	Students will be able to determine blood group and Rh factor of an individual				
CO4	Learner have the ability to learn the technique of dot ELISA for the detection of an antigen and to enumerate the total number of WBCs in the blood sample				
Pedagogy	Interactive, discussion-based, student-centered. program outputs.				
Internal Evaluation Mode	Experiment-Writing and Conductance File Maintenance/ Laboratory Record Continuous Attendance and Participation				
Practical No.	Experiments			Contact Hours	Mapped CO
1.	To collect plasma from blood samples			4	CO1, CO2
2.	To collect serum from blood samples			4	CO1,CO2
3.	To determine blood group and Rh factor of an individual			6	CO3
4.	To learn the technique of dot ELISA for the detection of an antigen			8	CO4
5.	To enumerate the total number of WBCs in the blood sample			8	CO4
CO-PO and PSO Mapping					

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	1	1	2	2	2	2	1	2	2	2	1	1	
CO2	1	1	1	2	2	2	2	1	2	2	2	1	1	
CO3	1	1	2	2	2	2	2	1	2	2	3	1	2	
CO4	1	1	1	2	2	2	2	1	2	2	2	1	1	

Strongcontribution-3, Averagecontribution-2, Lowcontribution-1,

Suggested Readings:

Reference Books	1. Kindt, Goldsby and Osborne. Kuby's Immunology. WH Freeman & Company 2. Roitt I, Brostoff, J and Male D. Immunology, 6th edition, 2001, Mosby, London. 3. Ramesh SR, Immunology. McGraw Hill Publications.
E-Resources	1. https://www.youtube.com/watch?v=KSs0SMfERuA&list=PLb8ShsGZfEVb7SSJUus5zp7YmFHiF-YSw 2. https://www.youtube.com/watch?v=SN7PiXDYZno&list=PLb8ShsGZfEVb7SSJUus5zp7YmFHiF-YSw&index=6

Internal Practical Evaluation:

Component	Marks
Experiment-Writing and Conductance	5
File Maintenance/ Laboratory Record	2
Continuous Attendance and Participation	1
Viva-Voce	2
Total Marks	10

Course created by: Dr. Manaal Zahera

Signature:

Approved by: Dr. Amita Jain

Signature: