

Branch Name:	B.Sc. Microbiology
Program Code:	SC102
Course Name:	Microbiology Practical
Course Code:	2SC1020505
Pre-requisite Course:	Basic laboratory techniques

Course Objectives:

1. The course is designed to acquire basic knowledge of inheritance.
2. It will also help in acquiring knowledge of general blood tests.
3. This course will enable to students to isolate mutant bacteria such as antibiotic resistant bacteria.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
--	--	12	6	--	--	120	80	200

List of Experiments:

1. Problem solving of Mendelian principles on the basis of monohybrid, dihybrid crosses, codominance and incomplete dominance.
 2. Preparation and Identification of different cell types in peripheral blood :
 - a. Total count of WBC
 - b. Total count of RBC
 - c. Differential Count of WBC.
 3. Estimation of Blood Glucose by Glucose Oxidase method.
 4. Estimation of Blood Urea by DAM method.
 5. Determination of human blood groups: ABO and Rh system.
 6. Study of Agglutination reaction: i) Dreyer's technique, ii) Double dilution technique.
 7. Estimation Haemoglobin by Sahli's Method.
 8. Isolation of antibiotic resistant mutant(s) bacterium by direct selection (Gradient Plate Technique)
 9. Isolation of antibiotic resistant mutant(s) bacterium by indirect selection (Replica Plate Technique)
- Course Learning Outcomes (CLO): On completion of this course, the students will be able to:**

CLO	Description	Bloom's Taxonomy Level
CLO1	To learn basic of inheritance	1 Understand 2 Remember
CLO2	Understand the pattern of inheritance and solve problems and identify the origin of disease is inherited in humans. It would also help student to predict the chances of particular disease inherited to offspring	1 Understand 2 Remember 3 Analyze 5 Evaluate
CLO3	Isolation and identification of mutant bacteria which are antibiotic resistant.	1 Remember 3 Apply 4 Analyze 5 Evaluate
CLO4	To determine numbers of red and white cells in blood , which helps in diagnosis of various disease.	3 Apply 4 Analyze

		5 Evaluate
CLO5	To analyses blood for its glucose and urea content ,to diagnose disease like diabetes and kidney disease.	3 Apply 4 Analyze 5 Evaluate
CLO6	To understand antibody antigen reactions which helps to check blood group and gain knowledge of compatibility of blood group so that the knowledge can be applied during blood transfusion. The reactions also helps for identification of pathogen on basis antigen antibody reaction , which helps in developing diagnostic kits for identification of a disease.	3 Apply 4 Analyze 5 Evaluate 6 Create

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)									Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CLO1	M		M					L			M	
CLO2	M		M					L			M	
CLO3	M	H	H	H	M		L	M		H	H	M
CLO4	H	H	H	H	H	H	M	M	L		H	H
CLO5	H	H	H	H	H	H	M	M			H	H
CLO6	H	H	H	H	H	H	H	H			H	H

H:High, M:Medium, L:Low