



Course Outline Form

**EVEN SEMESTER
2019**

Dear Student: Course outlines are intended to provide students with an overall plan for a course to enable them to function efficiently and effectively in the course.

*Academic Programs
BSc Microbiology
EMEA College
Kondotty*

Course Outline : Biochemistry II (2019-2020)

Name of the Stream	Science
Name of the Programme	BSc Microbiology
Name of the Course	Biochemistry II
Nature of the Course	Complementary Course
Semester	Second
Lecturer(s)	Dr. T. Krishnakumar
Name of the Coordinator	
Year	2019-2020
No of Credits	3
No of Contact Hours	54
Course Description	The course is designed for better understanding of physical properties of molecules involved in biosystems. A thorough knowledge of principle and procedure of different separation techniques used in Biochemistry
Course Objectives	Detailed knowledge of physical properties of molecules and different separation techniques commonly used in the separation of the bio molecules.
Course Outcome	Better understanding of physical properties of molecules and separation techniques and different separation strategies involved in the characterization of the molecules.
Assessment Method	Assignments Homeworks Class Tests Unit Tests Practical Tests Term Exam Seminars Lab Experiments
Teaching Methods Used	Cooperative Learning
Textbook	
References	
Internet Resources	

Internal Exam Pattern

Items	Marks/20	Marks/15
Assignment	4	3
Test Paper(s)/Viva voce	8	6
Seminar/Presentation	4	3
Class Room Participation based on Attendance	4	3
Total	20	15

External Exam Pattern

Question Type	No of Question	Marks/Question	Total Marks
Short Questions(2-3 Sentences)	15	2	Ceiling 25
Paragraph / Problem Type	8	5	Ceiling 35
Essay Type	2 out of 4	10	20
Total			80
Time			2.5 hrs

Graduate Attributes

Name of the Course: Biochemistry II

Course Schedule

Water - universal solvent. Dissociation of water - concept of pH and pOH; Henderson - Hassel Balch equation, buffers - buffer and buffer action; titration curves of strong and weak acids and bases, meaning of Ka and pKa values. methods of measurement of pH using pH meter, indicator solutions. Basic ideas about hydrogen bond and weak interactions.	Week 1 Week 2 Week 3 Week 4
Carbohydrates- isomerism of carbohydrates - D and L isomerism, epimerism, anomerism - mutarotation. Optical isomerism - d and l isomerism. Monosaccharides -Structure of following monomers (linear and cyclic) - glucose, fructose, galactose, mannose. sugar derivatives - 2-deoxy β D ribofuranose. Reducing action of sugars. Disaccharides - glycosidic bonds, structure and importance of the following disaccharides Osmosis, osmotic pressure, diffusion, active and passive transport, facilitated diffusion. Glucose transporter; Colloids, and Donnan Membrane equilibrium. Blood - Plasma proteins, special proteins in blood, Coagulation of blood, acid-base balance and maintenance of pH of blood.	Week 5 Week 6 Week 7 Week 8
Chromatographic techniques - principles and applications of paper, thin layer, gas, HPLC, gel filtration, ion exchange..	Week 9 Week 10 Week 11 Week 12 Week 13

Electrophoretic techniques - SDS - PAGE, native PAGE, immunoelectrophoresis	Week 14
	Week 15
	Week 16
Absorption photometry - Beer - Lambert's law, colorimeter, spectrophotometer	Week 17
	Week 18

Contact Details

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