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 IV (2018-2019)

Name of the Stream	Science
Name of the Programme	BSc Microbiology
Name of the Course	Biochemistry IV
Nature of the Course	Complementary Course
Semester	Fourth
Lecturer(s)	Dr. T. Krishnakumar
Name of the Coordinator	Dr. T. Krishnakumar
Year	2018-2019
No of Credits	2
No of Contact Hours	36
Course Description	The covers the amino acid, protein and fat metabolism. Vitamins and minerals necessary for the proper cell functioning is also taught in the course. It also covers hormones and its role.
Course Objectives	The course also enable the students to know the metabolic reactions occurring in the mammalian systems. This also intends to cover the hormonal actions and it functins.
Course Outcome	Thorough knowledge about hormonal actions and its biological functions.. Enables the students the metabolic aspects of fat, amino acids and proteins.
Assessment Method	Assignments Homeworks Class Tests Unit Tests Practical Tests Term Exam Seminars Lab Experiments
Teaching Methods Used	Lectures Cooperative Learning Collaborative Learning LMS Class Discussion
Textbook	

References	E.S. West, W.R. Todd, H.S. Mason and J.T. Van Bruggen. Text book of Biochemistry. Pub. The Macmillan Company, Collier-Macmillan Ltd., London Medical Biochemistry : RamakrishnanText Book of Biochemistry : D.M. Vasudevan Text Book of Biochemistry: A.C. Deb New central Book agency (P) Ltd
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 IV **Knowledge** **Academic and Intellectual Skills** Self Learning Collaborative Learning Cognitive Skills **Professional Skills** Communication Skills Team Work and Leadership Decision Making Critical and Analytical Skills Problem Solving Skills Research Skills Entrepreneur Aptitude **Personal Skills** Lifelong Learning Application Skills Life Skills **Attitude and Values** Social Responsibility Ethical Commitment Global Citizen Nation Building Secular Outlook

Course Schedule

	Week 1
Outline study of lipid digestion and absorption. Outline study of β-oxidation scheme (without	Week 2
structures). ATP yield in β-oxidation – outline study (without structures) of the cytoplasmic	Week 3
systems of fatty acid biosynthesis. Physiological functions of phospholipids. Outline study of	Week 4
cholesterol synthesis without structure.	Week 5
	Week 6

Proteolytic enzymes of the gastrointestinal tract and their activation (from zymogen forms). Classification of proteins based on catabolism. Absorption of amino acids from the intestine – an example each indicating decarboxylation, deamination and transamination of aminoacids (without molecular mechanisms).Urea cycle. Metabolism of glycine, phenylalanine, tyrosine, ammonia.	Week 7 Week 8 Week 9 Week 10 Week 11
Classification, source, chemical nature and deficiency disorders of vitamins. Basic physiological functions of vitamin C, B1, B2, pyridoxine and niacinamide (chemical structures not expected). One biochemical reactions involving TPP, FMN, FAD, NAD+, NADP+, PLP, CoA and biotin from metabolic sequences. Fat soluble vitamins A, D, E ,K. Physiological functions daily requirements, etc.	Week 12 Week 13 Week 14
Classification, mechanism of action (preliminary study), site of biosynthesis, important physiological functions of thyroxine, insulin, glucagon, epinephrine, glucocorticoids and growth hormones.	Week 15 Week 16
Mineral Metabolism (macro and trace minerals) Sodium, potassium, iron, copper, iodine, fluorine, selenium – biological role and nutritional importance.	Week 17 Week 18

Contact Details

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