

## First B.V.Sc 2017/2018 Batch

### BIOCHEMISTRY (VBS123) LECTURE SHEDULE Semester 1

Date	Topic	Time	Lecturer
	<b>CELL BIOCHEMISTRY (7 lectures)</b>		<b>A.J</b>
	1. The cell as a functional unit of animals. Evolution of eukaryotic cell. Comparison of prokaryotic and eukaryotic cell.		
	2. Cellular dimensions, separation of subcellular organelles		
	3. Plasma membrane: Structural organization and functions		
	4. Mitochondria Adaptations of mitochondrion for its functions		
	5. Nucleus, Endoplasmic reticulum & Golgi apparatus		
	6. Lysosomes & Peroxisomes		
	<b>CARBOHYDRATE (4 lectures)</b>		<b>S.W /CP</b>
13-03-2019	1. Classification of Carbohydrates, Glycosidic bond (monosaccharides, disaccharides & polysaccharides)	08.00-10.00	
13-03-2019	2. Structure of monosaccharides		
14-03-2019	3. Homopolysaccharides, Heteropolysaccharides, Starch, Cellulose, Glycogen, Energy stores & structure	08.00-09.00	
15-03-2019	4. Analysis of carbohydrates & digestion of carbohydrates	09.00-10.00	
	<b>AMINO ACIDS &amp; PROTEIN (4 lectures)</b>		<b>A.W</b>
21-03-2019	1. Amino acids: common structure, classification by R groups	08.00-09.00	
22-03-2019	2. Acid –Base properties of amino acids, titration curves	09.00-10.00	
27-03-2019	3. Protein structure: peptide bond, functions of proteins	08.00-10.00	
27-03-2019	4. Globular & Fibrous proteins, Collagen & Haemoglobin		
	<b>LIPID (4 lectures)</b>		<b>A.J /DS</b>
28-03-2019	1. Classification of lipids	08.00-09.00	
29-03-2019	2. Structure of Fatty acid, PL and TG, Essential fatty acids,	09.00-10.00	
03-04-2019	3. Cholesterol: Steroid structure & functions,	08.00-10.00	
03-04-2019	4. Emulsification of lipids in the process of digestion, lipid analysis		
	<b>DNA AND RNA (3 lectures)</b>		<b>A.W</b>
04-04-2019	1. Nucleosides & Nucleotides structure, nomenclature,	08.00-09.00	
05-04-2019	2. Functions of nucleotides.	09.00-10.00	
10-04-2019	3. RNA & DNA structure, function,	08.00-09.00	
	<b>ENZYMOLGY (4 lectures)</b>		<b>A.W</b>
10-04-2019	1. Classification of enzymes Enzyme Kinetics	09.00-10.00	
11-04-2019	2. Enzyme Kinetics Michaelis-Menton equation	08.00-09.00	
	<b>From 12-04-2019 to 21-04-2019 Semester Brake</b>		

24-04-2019	3. Inhibition of enzyme activity	08.00-10.00	
24-04-2019	4. Regulation of Enzyme activity		
	<b>METABOLISM (2 lectures )</b>		<b>A.J /DS</b>
25-04-2019	1.Bioenergetics & thermodynamics: ATP as an energy carrier	08.00-09.00	
26-04-2019	2.Basic concepts of metabolism: catabolic& anabolic pathways Regulation of metabolism	09.00-10.00	
	<b>CARBOHYDRATE METABOLISM(8 lectures)</b>		<b>S.W /CP</b>
02-05-2019	1.Glycolysis;transport of Glucose into cells	08.00-09.00	
03-05-2019	2. HMP pathway Use of NADPH ,G6PD deficiency	09.00-10.00	
08-05-2019	3. Citric acid cycle & it's regulation	08.00-10.00	
08-05-2019	4.Oxidative phosphorylation		
09-05-2019	5. Metabolism of glycogen, Synthesis of Glycogen & Glycogenolysis	08.00-09.00	S.W/CP
10-05-2019	6. Fed state: starvation	09.00-10.00	
15-05-2019	7. Gluconeogenesis glucose homeostasis & Glucose homeostasis	08.00-10.00	
	<b>PROTEIN METABOLISM (5 lectures)</b>		<b>A.W</b>
16-05-2019	1. Amino acid metabolism : Disposal of Nitrogen: Urea cycle	08.00-09.00	
17-05-2019	2. Amino acid metabolism of carbon skeleton	09.00-10.00	
22-05-2019	3. Synthesis of amino acids:	08.00-10.00	
22-05-2019	4. Ammonia Toxicity: Uric acid		
23-05-2019	5. Amino acid derivatives	08.00-09.00	
	<b>LIPID METABOLISM (9 lectures)</b>		<b>A.J /DS</b>
24-05-2019	1. Metabolism of lipids: fatty acids & triglyceride metabolism lipolysis, $\beta$ -oxidation and fatty acid biosynthesis	09.00-10.00	
29-05-2019	2. Omega-3, omega -6 fatty acids and essential fatty acids	08.00-10.00	
29-05-2019	3. Ketone bodies; An alternative fuel for cells, ketogenesis, and ketosis		
30-05-2019	4. Cholesterol: & biosynthesis & degradation of cholesterol and bile acid formation.	08.00-09.00	
31-05-2019	5. Bile acid formation and its regulation.	09.00-10.00	
06-06-2019	6. Lipoproteins – Introduction	08.00-09.00	
07-06-2019	7. Lipoproteins – Classification	09.00-10.00	
12-06-2019	8. Functions of lipoproteins	08.00-10.00	
12-06-2019	9. Functions of lipoproteins		
	<b>NUCLEOTIDE METABOLISM (4 lectures)</b>		<b>A.W</b>
13-06-2019	1 Purine and pyrimidine synthesis	08.00-09.00	
14-06-2019	2.Regulation of Purine and pyrimidine nucleotide biosynthesis	09.00-10.00	
19-06-2019	3. Degradation of purine and pyrimidine	08.00-10.00	
19-06-2019	4. Metabolic disorders of nucleotide metabolism		
	<b>VITAMINS (4 lectures)</b>		<b>A.W</b>
20-06-2019	1. Overview, Classification: Vitamins supplements.	08.00-09.00	

21-06-2019	2. Lipid soluble vitamins & their functions	09.00-10.00	
26-06-2019	3. Water soluble vitamins, Co enzyme activity	08.00-10.00	
26-06-2019	4. Vitamin deficiencies		
	<b>HORMONES(12 lectures)</b>		S.W
27-06-2019	1. Hormones: Classification –composition Pituitary-Hypothalamic axis	08.00-09.00	
28-06-2019	2. Second messenger concept Receptors & regulation of hormonal function	09.00-10.00	
03-07-2019	3. Anterior Pituitary Hormones: Chemical structure catabolism	08.00-10.00	
03-07-2019	4. Posterior Pituitary Hormones: composition of these hormones & synthesis		
04-07-2019	5. Thyroid hormones precursors, synthesis, functions & catabolism	08.00-09.00	
05-07-2019	6. Pancreatic Hormones: Hormonal regulation of fuel metabolism, Diabetes Mellitus, Synthesis of Insulin, catabolism & cellular level activity	09.00-10.00	
	<b>Study leave from 06-07-2019 To 21-07-2019</b>		
	7. Gastrointestinal Hormones: Classification		
	8. Steroid hormones: Mode of action, Adrenocortical hormones		AJ /DS
	9. , Adrenocortical hormones, other steroid hormones, hormonal preparations.		AJ /DS
	10. Metabolic response to stress; Adrenal Medullary Hormones		
	11. Metabolism in well fed state; Enzymic change in the fed state		S.W
	12. Skeletal muscle activity in starvation; Brain in starvation		S.W

## **25-07-2019 – Biochemistry In-course Assessment**

### **Vacation From 27-07-2019 To 18-08-2019**

**A.J - Dr. A. P Jayasooriya**  
**A.W - Dr. A Wanigasekera**  
**S.W – Dr. S . Wickramasinghe**  
**C.P - Chintha Premachandre**