

**Course Title: Biochemistry  
Academic year 2011 / 2012**

**First Year / First Semester**

CODE	COURSE TITLE	TIME	Teaching Methods	WEEK
0211BIO1CH01	Classification of carbohydrates	1	L	1
0211BIO1CH02	Structure of carbohydrates	1	L	
0211BIO1CH03	Reactions involving monosaccharides	1	L	
0211BIO1CH04	Derivatives of monosaccharides	1	L	2
0211BIO1CH05	Complex carbohydrates	1	L	
0211BIO1CH06	Digestion of carbohydrates	1	CBL	
0211BIO3CH07	Cases	1	CBL	3
0211BIO1GE01	Acid Base balance	1	L	
0211BIO1GE02	Acidosis Alkalosis	1	L	
0211BIO1GE03	Cases	1	L	4
0211BIO1GE04	Cases	1	CBL	
0211BIO1ENZ01	Classification of enzymes	1	L	
0211BIO1ENZ02	Mechanisms of action	1	L	5
0211BIO1ENZ03	Properties of enzymes	1	L	
0211BIO1ENZ04	Factors affecting rate of reaction	1	GD	
0211BIO1ENZ05	Enzyme Kinetics	1	L	6
0211BIO1ENZ06	Enzyme inhibitors	1	CBL	
0211BIO1ENZ07	Regulation of enzymes	1	L	
0211BIO1ENZ08	Isoenzymes	1	CBL	7
0211BIO1ENZ09	Enzymes in clinical diagnosis	1	CBL	
0211BIO3ENZ10	Cases	1	CBL	
0211BIO1NUT01	Nutrient Requirement in Humans	1	L	8
0211BIO1NUT02	Energy requirement in Humans	1	L	
0211BIO1NUT03	Macronutrients I	1	L	
0211BIO1NUT04	Macronutrients II	1	L	9
0211BIO1NUT05	Cases	1	L	
0211BIO1NUT06	Minerals I	1	SGD	
0211BIO1NUT07	Minerals II	1	SGD	10
0211BIO1NUT08	Minerals III	1	SP	
0211BIO1NUT09	Minerals IV	1	SP	
0211BIO1NUT10	Dietary recommendations	1	L	11
0211BIO1NUT11	Nutrition and Chronic diseases	1	L	
0211BIO1NUT12	Vitamin A	1	SGD	
0211BIO1NUT13	Vitamin D	1	SP	
0211BIO1NUT14	Vitamin E	1	SGD	12
0211BIO1NUT15	Vitamin K	1	SP	
0211BIO1NUT16	Cases	1	SP	
0211BIO1NUT17	Cases	1	SGD	
0211BIO1NUT18	Vitamin B complex	1	SGD	13
0211BIO1NUT19	Vitamin B complex	1	SP	

0211BIO1NUT20	Vitamin B complex	1	SGD	
0211BIO1NUT21	Vitamin B complex	1	SP	14
0211BIO1NUT22	Vitamin B complex	1	SGD	
0211BIO1NUT23	Vitamin B complex	1	SP	
0211BIO1NUT24	Vitamin C	1	SGD	
0211BIO1NUT25	Vitamin C	1	SP	15
0211BIO1NUT26	revision	1		
0211BIO1NUT27	Cases	1	CBL	
0211BIO1NUT28	Cases	1	CBL	
0211BIO1CE01	introduction of cell	1	L	1
0211BIO1CE02	plasma membrane, cytoplasm	1	L	
0211BIO1CE03	nucleus, mitochondria	1	L	
0211BIO1CE04	ER, Golgi, lysosomes	1	L	2
0211BIO1CE05	peroxisome, cytoskeleton	1	L	
0211BIO1CE06	Clinical correlation	1	CBL	
0211BIO1CE07	Lipid classification and function	1	L	3
0211BIO1CE08	FA chemistry saturated and unsaturated	1	L	
0211BIO1CE09	Revision	1	L	
0211BIO1CE10	Triacylglycerol	1	L	4
0211BIO1CE11	phospholipids, structure and function	1	L	
0211BIO1CE12	glycolipids and lipoproteins	1	L	5
0211BIO1CE13	Revision	1	L	
0211BIO1CE14	steroid hormones, bile salts and acids	1	CBL	6
0211BIO1CE15	chemical classification of amino acids	1	L	
0211BIO1CE16	physical and biologic classification	1	L	
0211BIO1CE17	metabolic clasification, derived amino acids	1	L	7
0211BIO1CE18	physical properties	1	L	
0211BIO1CE19	revision	1	L	8
0211BIO1CE20	Titration curve of alanine	1	L	
0211BIO1CE21	titation curve of basic amino acids	1	CBL	
0211BIO1CE22	titration curve of acidic amino acids	1	L	9
0211BIO1CE23	protein function and classification	1	L	
0211BIO1CE24	Revision	1	L	
0211BIO1CE25	primary, secondary level, teriary	1	L	10
0211BIO1CE26	quaternary level and folding	1	L	
0211BIO1CE27	denaturation and revision	1	CBL	11
0211BIO1CE28	collagen	1	L	
0211BIO1CE29	elastin and keratin	1	L	12
0211BIO1CE30	nucleotide structure, and function	1	L	
0211BIO1CE31	revision	1	L	
0211BIO1CE32	hemoglobin structure	1	CBL	13
0211BIO1CE33	structure function relationship	1	L	
0211BIO1CE34	Clinical correlation	1	L	
0211BIO1CE35	clinical correlation and electron transport chain	1	L	14
0211BIO1CE36	electron transport chain	1	L	
0211BIO1CE37	electron transport chain	1	L	

0211BIO1CE38	electron transport chain	1	L	15
0211BIO1CE39	revision	1	CBL	
0211BIO2CHE01	Introduction to Bio.	1	P	1
0211BIO2CHE02	Laboratory glassware & equipment.	1	P	2
0211BIO2CHE03	detection of lipids	1	p	3
0211BIO2CHE04	Properties of carbohydrates	2	P	4
0211BIO2CHE05	Properties of carbohydrates	2	P	5
0211BIO2CHE06	Properties of carbohydrates	2	P	6
0211BIO2CHE07	Carbohydrate unknown + buffer system	2	P	7
0211BIO2CHE08	detection of proteins	2	P	8
0211BIO2CHE09	protein unknown + hemolysis	2	P	9
0211BIO2CHE10	Enzymes	2	P	10
0211BIO2CHE11	General unknown	2	P	12
0211BIO2CHE12	revision	1	P	13
0211BIO2CHE13	revision	1	P	14

### First Year / Second Semester

CODE	COURSE TITLE	TIME	aching Meth	WEEK
0212BIO1BAM01	Metabolic Map.	1	L	1
0212BIO1BAM02	Regulation of Metabolism.	1	L	
0212BIO1BAM03	Transduction by intracellular Receptors.	1	L	
0212BIO1BAM04	Transduction by cell-surface Receptors.	1	L	2
0212BIO1BAM05	Intracellular Messenger Systems.	1	L	
0212BIO1BAM06	Other Messenger Systems.	1	L	
0212BIO1BAM07	Group Discussion	1	SGD	3
0212BIO1CHM01	Glycolysis.	1	SGD	
0212BIO1CHM02	Steps of glycolysis	1	SGD	
0212BIO1CHM03	Regulation of glycolysis.	1	L	4
0212BIO1CHM04	Clinical cases.	1	CBL	
0212BIO1CHM05	Gluconeogenesis.	1	SGD	
0212BIO1CHM06	Substrate of gluconeogenesis.	1	SGD	
0212BIO1CHM07	Regulation of gluconeogenesis.	1	SGD	5
0212BIO1CHM08	Group Discussion	1	SGD	
0212BIO1CHM09	Citric acid cycle.	1	L	
0212BIO1CHM10	Importance of citric acid cycle	1	L	
0212BIO1CHM11	Regulation of Citric acid cycle.	1	L	6
0212BIO1CHM12	Oral Tutorial	1	SGD	
0212BIO1CHM13	Hexose monophosphate pathway.	1	L	
0212BIO1CHM14	Uses of NADPH.	1	SP	
0212BIO1CHM15	Glucose-6-P dehydrogenase deficiency.	1	CBL	7
0212BIO1CHM16	Case Discussion	1	CBL	
0212BIO1CHM17	Glycogen Synthesis	1	L	
0212BIO1CHM18	Glycogen degradation.	1	L	
0212BIO1CHM19	Glycogen storage disease	1	CBL	9
0212BIO1CHM20	Regulation of glycogen metabolism.	1	SP	

0212BIO1CHM21	Metabolism of Fructose	1	L	
0212BIO1CHM22	Metabolism of Galactose	1	L	10
0212BIO1CHM23	Inborn error of Metabolism	1	CBL	
0212BIO1CHM24	Cases	1	CBL	
0212BIO1CHM25	GAG& Glycoprotein	1	L	12
0212BIO1CHM26	Revision	1	L	12
0212BIO1INM01	Insulin	1	SP	
0212BIO1INM02	Insulin	1	SP	13
0212BIO1INM03	Glucagon	1	SP	
0212BIO1INM04	Hypoglycemia	1	SP	
0212BIO1INM05	Metabolism in Fed State	1	SP	14
0212BIO1INM06	Metabolism in Fed State	1	SP	
0212BIO1INM07	Metabolism in Fasting State	1	SP	
0212BIO1INM08	Metabolism in Fasting State	1	SP	15
0212BIO1INM09	Diabetes Mellitus Type 1	1	SP	
0212BIO1INM10	Diabetes Mellitus Type 1	1	SP	
0212BIO1INM11	Diabetes Mellitus Type 2	1	SP	16
0212BIO1INM12	Diabetes Mellitus Type 2	1	SP	
0212BIO1INM13	Obesity	1	SP	
0212BIO1INM14	Obesity	1	SP	17
0212BIO1INM15	Cases	1	SGD	
0212BIO1INM16	Cases	1	SGD	
<b>LIPID METABOLISM</b>				
0212BIO1LIM 01	Enzymes of FA Synthesis	1	L	1
0212BIO1LIM 02	Steps FA Synthesis	1	L	
0212BIO1LIM 03	Regulation of FA Synthesis	1	L	
0212BIO1LIM 04	FA elongation and desaturation	1	L	2
0212BIO1LIM 05	Beta oxidation of FA	1	L	
0212BIO1LIM 06	Beta oxidation of FA	1	L	
0212BIO1LIM 07	alpha and omega oxidation	1	L	3
0212BIO1LIM 08	oxidation of unsat FA , related diseases	1	L	
0212BIO1LIM 09	Synthesis and break down of Ketone bodies	1	L	
0212BIO3LIM 10	<b>Ketosis (open discussion)</b>	1	CBL	4
0212BIO1LIM 11	Eicosanoids	1	L	
0212BIO1LIM 12	Triacylglycerols	1	L	
0212BIO1LIM 13	Hormonal regulation of adipose tissue	1	L	5
0212BIO1LIM 14	synthesis of Phospholipids	1	L	
0212BIO1LIM 15	Degradation of phospholipids	1	L	
0212BIO1LIM 16	Glycolipids	1	L	6
0212BIO1LIM 17	cholesterol metabolism	1	L	
0212BIO3LIM 18	Clinical aspects of cholesterol metabolism	1	CBL	
0212BIO1LIM 19	Steroid hormones synthesis and degradation	1	L	7
0212BIO1LIM 20	Action of steroid hormones	1	L	
0212BIO1LIM 21	Structure of lipoproteins	1	L	8
0212BIO1LIM 22	Metabolism of Chylomicrons	1	L	
0212BIO1LIM 23	Metabolism of VLDL and LDL	1	L	

0212BIO1LIM 24	Metabolism of High-density Lipoproteins (HDL)	1	L	
0212BIO3LIM 25	Fatty liver ( <b>open discussion</b> )	1	CBL	9
0212BIO3LIM 26	Revision		L	
<b>Nucleotide Metabolism</b>				
0212BIO1NUM 01	Metabolism of Nucleotides	1	L	
0212BIO1NUM 02	disease related to degradation of Purine	1	L	10
0212BIO1NUM 03	revision	1	L	
<b>Protein Metabolism</b>				
0212BIO1PROM01	Protein Metabolism	1	L	
0212BIO1PROM02	Overview of nitrogen metabolism.	1	L	
0212BIO1PROM03	Removal of nitrogen from amino acids.	1	L	11
0212BIO1PROM04	Transamination.	1	L	
0212BIO1PROM05	Urea cycle.	1	L	
0212BIO1PROM06	Metabolism of ammonia.	1	L	
0212BIO1PROM07	revision	1	L	12
0212BIO1PROM08	Catabolism of the carbon skeletons of glucogenic	1	L	
0212BIO1PROM09	Catabolism of the carbon skeletons of glucogenic	1	L	
0212BIO1PROM10	Catabolism of the carbon skeletons of ketogenic	1	L	
0212BIO1PROM11	Catabolism of a.a.	1	L	13
0212BIO1PROM12	Revision	1	L	
0212BIO1PROM13	Role of folic acid in amino acids & Bioynthesis of	1	L	
0212BIO1PROM14	Metabolic defects in amino acids.	1	L	14
0212BIO1PROM15	PKU	1	CBL	
0212BIO1PROM16	Porphyryn Synthesis.	1	L	
0212BIO1PROM17	Porphyria.	1	CBL	15
0212BIO1PROM18	Synthesis of Creatine & Histamine.	1	L	
0212BIO1PROM19	Synthesis of serotonin, catecholamines& melanin	1	L	16
0212BIO1PROM20	Revision	1	L	
0212BIO2LIPID01	introduction and types of tubes	1	P	1
0212BIO2LIPID02	blood sampling	1	P	2
0212BIO2LIPID03	GTT discussion	1	P	3
0212BIO2LIPID04	estimation of glucose	1	P	4
0212BIO2LIPID05	lipid profile discussion	1	P	5
0212BIO2LIPID06	estimation of TC, TAG	1	P	6
0212BIO2LIPID07	estimation of LDL, HDL	1	P	7
0212BIO2LIPID08	LFT discussion	1	P	9
0212BIO2LIPID09	estimation of liver enzymes	1	P	10
0212BIO2LIPID10	estimation of bilirubin and plasma protein	1	P	11
0212BIO2LIPID11	RFT discussion	1	P	12
0212BIO2LIPID12	estimation of RFT	1	P	13
0212BIO2LIPID13	Electrophoresis	1	P	15
0212BIO2LIPID14	Revision Practical	1	P	16

**Second Year / First Semester**

CODE	COURSE TITLE	TIME	ching Meth	WEEK
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0221BIO1DNA01	Structure of DNA	1	L	10
0221BIO1DNA02	Steps in Prokaryotic DNA Synthesis	1	L	
0221BIO1DNA03	Organization of Eukaryotic DNA	1	L	
0221BIO1DNA04	DNA mutation	1	L	11
0221BIO1DNA05	DNA Repair	1	L	
0221BIO1DNA06	Structure of RNA	1	L	
0221BIO1DNA07	Transcription of Prokaryotic Genes.	1	L	12
0221BIO1DNA08	Transcription of Eukaryotic Genes.	1	L	
0221BIO1DNA09	Post-Transcriptional Modification of RNA.	1	L	
0221BIO1DNA10	The Genetic Code.	1	L	13
0221BIO1DNA11	Components Required for Translation.	1	L	
0221BIO1DNA12	Steps in protein synthesis	1	L	
0221BIO1DNA13	Post- translational modifications	1	L	14
0221BIO1DNA14	Biotechnology	1	L	
0221BIO1DNA15	Nucleic acid extraction	1	L	
0221BIO1DNA16	PCR	1	L	
0221BIO1DNA17	Electrophoresis	1	L	15
0221BIO1DNA18	Liver function test	1	L	
0221BIO1DNA19	Liver function test	1	L	
0221BIO1DNA20	Jaundice	1	L	

**Second Year / Second Semester**

CODE	COURSE TITLE	TIME	ching Meth	WEEK
0222BIO1Renal01	Investigations of renal function -1	1	L	12
0222BIO1Renal02	Investigations of renal function -2	1	L	13
0222BIO1Renal03	Biochemical changes in renal diseases.	1	L	14
0222BIO1Renal04	Case study about renal function test.	1	L	15
0222BIO2Renal01	Urine analysis: Physical properties	1	p	14
0222BIO2Renal02	Urine analysis: Chemical properties	1	p	15