

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Metabolic Biochemistry (605222)
Course number	MEDI3311
Faculty	
Department	
Course type	College Needs
Course level	3
Credit hours (theoretical)	2
Credit hours (practical)	1
Course Prerequisites	

Course Objectives

- 1 - To be able to understand and deal with most recent articles in biochemistry and design research methods in biochemistry
- 2 - To discuss the energy metabolism endergonic vs exergonic reactions and metabolism
- 3 - To demonstrate Metabolic disorders related to carbohydrate metabolism . D.M, Galactosemia, fructose intolerance, essential fructose urea, lactic acidosis, lactose intolerance, G6pDH
- 4 - To explain Digestion, Absorption, and metabolism of proteins
- 5 - To discuss Digestion, absorption, mobilization and metabolism of lipids

Course Contents

- 1 - Introduction to metabolism
- 2 - Bioenergetics, energy metabolism endergonic vs exergonic reactions.
- 3 - Digestions and absorption of carbohydrate transport, aerobic and an aerobic glycolysis ,lactic acidosis , lactose intolerance , Cori cycle.
- 4 - Oxidative decarboxylation of pyruvic acid. Krebs cycle.
- 5 - Oxidative phosphorylation, electron transport chain.
- 6 - Pentose phosphate pathway, galactose and fructose metabolism.glutathione, glucouronic pathway, lactic acidosis.
- 7 - Metabolic disorders Fructose intolerance essential fructose urea, galactosemia, G-6PDH. , D.M.,HbA1C.
- 8 - Digestion, mobilization and transport of Fats, Beta Oxidation, oxidation of odd no fatty acids, synthesis of fatty acids, cholesterol and lipoproteins metabolism,metabolic disorders related to fat Metabolism, methyl malonyl acid urea, medium chain acyl COA dehydrogenase deficiency (MCAD), Cholesterolemia, atherosclerosis, Ketogenesis. Vs Ketolysis.
- 9 - Digestion, and absorption of proteins, nitrogen balance, essential vs nonessential amino acids, Glucogenic vs ketogenic amino acids. Metabolism of selected amino acids. Urea cycle
- 10 - Metabolic disorders related to amino acids metabolism, PKU, AKU, cystein area, maple syrup disease, albinism, cretinism, Tyrosinosis.
- 11 - Fed vs Fasting states in liver and adipose tissue.

Teaching and Learning Methods

1 - Students presentation of selected topics

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
Attendance and participation		10
Mid Term Exam		40
Final Exam		50

Books and References

Essential books	Textbook of Biochemistry with chemical correlations Thomas M. Devlin. John wiley and sons, N.Y
-----------------	--