Course Specifications

General Information

Course name	Nutritional Biochemistry
Course number	NUTD2309
Faculty	
Department	
Course type	Major Needs
Course level	2
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - This course will introduce the students to the role of nutrients in the human body at the cellular level and in metabolism

2 - To study the metabolism of the macro-nutrients by humans with specific emphasis on hormonal control of biochemical pathways, nutritional and metabolic interrelationships and dietary disorders

3 - To Understand the regulation of enzyme activity by allosteric modulators, covalent modification through phosphorylation – dephosphorylation, and/or induction will be discussed in relation to diet, health and fitness.

Intended Learning Outcomes

Knowledge and Understanding

* .To acquire detailed knowledge regarding the biological basis of nutrition and the mechanisms by which diet can influence health. This includes a basic understanding of metabolism, physiology, molecular genetics, epidemiology and biostatistics
* .To develop laboratory skills required for modern biochemical and molecular studies of nutrition and its role in health and disease. This includes the quantitative analysis and interpretation of results
* .To attain skills in developing research proposals for the study of human nutrition. This requires the integration of knowledge about cellular and molecular biology, modern molecular genetics, and human physiology with concepts in nutritional sciences related to diet and disease

Course Contents

1 - This course encompasses Biochemistry of Digestion, absorption and transportation of Nutrients, Nutrients that resist or escape digestion, Regulation of energy metabolism, Insulin Resistance, Obesity, Cardiovascular diseases, Nutritional Biochemistry of Proteins, Amino acid formation and oxidation, Protein and amino acids requirements, Amino acid supplements, Clinical issues in protein nutrition, Biochemistry of Renal diseases, and Nucleic acid in nutrition

Teaching and Learning Methods

1 - .Interactive lectures, discussions and audiovisual aids

Students Assessment

Assessment Method	TIME	MARKS
1st Written Exam	After the first month	25
2nd Written Exam	After the second month	20
Attendance & Participations	The whole semester	5
Final Written Exams	At the end of the semester	50

Books and References

Essential books	Nutritional Biochemistry – Second Edition – Tom Brody, 2002
	Essential of human nutrition- Second Edition- Jim Mann, Stewart Truswell, 2002
	Nutrition and Metabolism - Underlying Mechanisms and Clinical Consequences- Christos S. Mantzoros, 2009
	Biochemical and Physiological Aspects of Human Nutrition - Martha Stipanuk-1999