LIFS4550 Biochemistry of Nutrition

Spring semester, 2018
Class time: Monday 10:30-11:50 & Wednesday10:30-11:50
Venue: Room 2465

Instructors:
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Course goals

This course will provide you with the knowledge of biochemistry in the understanding and decision making for developing a healthy and nutritional diet for you.

Learning outcomes

On successful completion of this course, students are expected to be able to:

1. Describe the basic composition of the major food groups which are vital to the functioning of a human body.

2. Apply scientific concepts to justify dietary choices made to protect the onset or aggravation of diet-related ailments.

3. Assess the role of the scientific knowledge in the understanding of dietary deficiency and treatment of diet-related problems.

4. Evaluate the impact of a healthy lifestyle on both an individual and on society as a whole.

Course description

The biochemistry of major food ingredients including carbohydrates, lipids, proteins, phytochemicals, probiotics, alcohol, vitamins, water and minerals will be studied. In additions, the metabolism, nutritional properties and functions of these ingredients will be emphasized.

Teaching approach

The course content is mainly delivered through interactive lectures. The first few lectures of the course are the introduction to nutrition and the background of metabolism. Then, each of the aspect of the food ingredients are given in subsequence lectures. For assessment, the students are assessed by the mid-term exam for each of the respective ingredients of Carbohydrates, Lipids, Proteins, Phytochemicals, and Probiotics. The final exam will cover Alcohol, Fat-Soluble, Water-Soluble Vitamins, Water and Minerals.

Assessment scheme

Method	Percentage
A. Mid-term Exam	
Introduction, Metabolism, Carbohydrates, Phytochemicals, Lipids, Probiotics and Proteins	50
B. Final Exam	
Alcohol, Fat-Soluble, Water Soluble Vitamins, Water and Minerals	50

Lecture outline

Date	Lecture Topics	Instructor
Feb 5, 7, 12	Introduction / Metabolism	RSCW
Feb 14, 21, 26	Carbohydrates / Probiotics / Aging I - Glycation	RSCW
Feb 28, Mar 5, 7	Lipids / Phytochemicals / Obesity / Aging II – Oxidative Damage	RSCW
Mar 12, 14, 19	Proteins / Aging III – Mitochondria UPC	RSCW
Mar 21	**Mid-term Exam**	
Mar 26	Alcohol	TAN
Mar 28, Apr 9, 11, 16	Fat-Soluble Vitamins	TAN
Apr 18, 23, 25, 30	Water-Soluble Vitamins	TAN
May 2, 7	Water and Minerals	TAN
May 9	Revision / Questions (for final exam)	TAN

Reference books

1. Perspectives in nutrition, 7th or 6thEdition-Gordon M. Wardlaw

2. Nutritional Biochemistry –T Brody

3. Biochemistry- Christopher K. Matthews, K. E. van Holde, Kevin G. Ahern

4. Biochemistry- Murray, Granner, Mayes, Rodwell

5. Color Atlas of Biochemistry-Koolman and Roehm

6. Harper's Illustrated Biochemistry- Murray, Bender, Botham, Kennelly, Rodwell, and Well.

7. Advanced nutrition and human Metabolism-Gropper, Smith and Groff

8. Wikipedia, the free encyclopedia