Subject Description Form

Subject Code	FSN4410 (ABCT4410)
Subject Title	HEALTH FOOD AND NUTRACEUTICALS
Credit Value	3
Level	4
Pre-requisite	Principles of Nutrition (FSN3411 / ABCT3411) or Life Cycle Nutrition (FSN3417 / ABCT3417) AND Human Physiology (ABCT2133 or ABCT2326)
Objectives	The subject is intended to introduce the scientific basis for the development of nutraceuticals and health foods that are of high demand in both the national and international markets in recent years. The molecular basis and regulations related to the use of different health-promoting dietary components, e.g. micronutrients, phytochemicals and probiotics, in health maintenance and disease prevention will be covered.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a) Recognize the importance link between nutrition and diseases; b) Identify major types of health foods and nutraceutical products in the market c) Understand the molecular basis of using micronutrients and phytochemicals in prevention of chronic diseases d) Be able to support the development of a science-based health food industry in Hong Kong; e) Critically evaluate the safety and efficacy of using health foods and nutraceutical products.
Subject Synopsis/ Indicative Syllabus	<u>Nutraceuticals and Functional Food: An Introduction</u> Definition; the link between nutrition and medicine; classical nutrients; phytochemicals and other dietary health factors for disease prevention. <u>Dietary Phytochemicals</u> Classification, chemistry and dietary sources; the ADME (Absorption, Distribution, Metabolism, and Excretion) process; Polyphenol subclasses, their health benefits and applications <u>Protection against Cardiovascular Diseases</u> Pathogenesis of cardiovascular diseases; soluble fiber: glucan and oat bran; marine lipids: n-3 polyunsaturated fatty acids; role of antioxidants: vitamin E; plant phenols: phenolic acids and flavonoids; tea; wine; soybean.

	<u>Cancer Prevention</u> Diet and carcinogenesis; tomato: lycopene; grape: resveratrol; soybean: genistein; cruciferae: isothiocyanates; wheat bran: fiber; onions and garlics: sulfur containing compounds; Chinese herbal medicine. <u>Postmenopausal Symptoms and Diseases</u> Postmenopausal symptoms; pathogenesis of osteoporosis; calcium and vitamin D; selective estrogen receptor modulators (SERM); soybean; flaxseed. <u>Protection against Metabolic Disorders</u> Prevalence and definition of major metabolic disorders; Pathogenesis and biomarkers; Dietary recommendations; Representative functional foods for promoting metabolic health (e.g., phytochemicals, minerals, prebiotics and probiotics) <u>Regulatory Issues and Health Claims</u> Assessment of safety and efficacy of functional foods and ingredients; regulation of food with claims for special physiological value; regulatory issues: Europe and Japan.
Teaching/Learning Methodology	The basic contents of this subject will be presented with the aid of lecture notes, video clips, Blackboard platform and other teaching tools. Lectures will be designed to explain the link between nutrition and diseases, to introduce major types of health foods and nutraceutical products as well as to provide the knowledge regarding the molecular basis of using micronutrients and phytochemicals in prevention of chronic diseases. For tutorials, students will be asked to work in groups to study a specific health food and nutraceuticals products as well as critically evaluate the safety and efficacy of the health food products and to present their findings in the form of seminar during class periods. Students are also expected to study reference materials distributed in class, from the library or other sources (e.g. newspaper and magazine clippings, and information available on the Internet). Guest speakers from the industry will also be invited to deliver seminar on current topics related to health food and nutraceuticals.

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)				
		a	b	c	d	e
1. Test	20%	√	√	√	√	√
2. Seminar Presentation	20%				√	√
3. In-class Assignments /Seminar attendance	20%		√			√
4. Written assignment	40%	√	√	√	√	√
Total	100 %					

	Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes: The continuous assessment comprises of tests, in-class assignments, seminar presentation and written assignments. In-class assignments will be given to encourage critical thinking among students on current issues related to health food. Students' performance in active participation in discussion during tutorial sessions will be assessed. Seminar presentation will be assessed based on their abilities to gather, analyze and organize relevant information and their abilities to orally present the information in a logical manner. Both tests and the written assignment will be used to assess the knowledge acquired by students and their ability to apply such knowledge. Seminar presentation as well as tutorial participation will be used to assess the abilities of the students to identify major types of health foods and nutraceuticals products in the market, their understandings of the scientific basis for the use of these products in health maintenance and disease prevention, as well as their abilities to critically evaluate the safety and efficacy of using health food and nutraceutical products.	
Student Study Effort Expected	Class contact:	
	▪ Lecture	26 Hrs.
	▪ Tutorial	5 Hrs.
	▪ Seminar	8 Hrs.
	Other student study effort:	
	▪ Self-study	60 Hrs.
	▪ Written Assignment	12 Hrs
	Total student study effort	109 Hrs.
Reading List and References	John Howlett, 2008, Functional Foods from Science to Health and Claims, International Life Sciences Institute Europe World Cancer Research Fund/American Institute for Cancer Research. Diet, Nutrition, Physical Activity and Cancer: a Global Perspective. Continuous Update Project Expert Report 2018. Moghadasian MH & Eskin NAM. 2012 Functional foods and Cardiovascular disease. CRC Press:Boca Raton, FL, USA Sattigere VD et. al. 2018 Science-based regulatory approach for safe nutraceuticals. *J Sci Food Agric* (wileyonlinelibrary.com) DOI 10.1002/jsfa.9381 Jane Higdon, and Victoria J. Drake, 2012 Evidence-Based Approach to Phytochemicals and Other Dietary Factors. 2nd Edition. Thieme Publishing Group, New York, NY, USA.	