Form 2B

City University of Hong Kong

Information on a Course
offered by Department of Biology and Chemistry
with effect from Semester A in 2012 / 2013

Part I

Course Title:	Food Processing and Food Chemistry
Course Code:	BCH6114
Course Duration:	One Semester
No. of Credit Units:	Three
Level:	P6
Medium of Instruction:	English
Prerequisites:	Nil
Precursors:	Nil
Equivalent Courses:	Nil
Exclusive Courses:	Nil

Part II

Course Aims:

This course in Food Processing and Food Chemistry will enable students to develop their knowledge and capability in dealing with the composition and properties of food as well as the chemical changes it undergoes during handling, processing and storage. Students will develop their understanding in the effect of chemical and biochemical reactions on the quality and safety of food. They will also identify problems in food sample and apply techniques to solve problems in situations encountered during storage and processing of food.

Course Intended Learning Outcomes (CILOs)
Upon successful completion of this course, students should be able to:

No.	CILOs	Weighting (if applicable)
1.	Demonstrate an understanding of the chemical nature of foods and the major components (carbohydrates, lipids and proteins)	

	of milk, meat, eggs, cereal grains, and fruits and vegetables.	
2.	Analyse the physico-chemical properties of foods.	
3.	Apply various techniques in analysing food samples.	
4.	Examine the role of natural and synthetic substances that are added to foods and their functionalities.	
5.	Determine the deteriorative chemical and biochemical reactions, and their chemical kinetics in food handling, processing and storage.	

Teaching and learning Activities (TLAs)

(Indicative of likely activities and tasks designed to facilitate students' achievement of the CILOs. Final details will be provided to students in their first week of attendance in this course)

ILO No		**Total** (hrs)
CILO 1	Lecture followed by small group activities will introduce the chemical nature of foods and the major components (carbohydrates, lipids and proteins) of milk, meat, eggs, cereal grains, and fruits and vegetables.	
CILO 2	Lecture followed by (i) small group discussion on literature findings and independent analyses of literature data on selected topics and themes on the analysis of physico-chemical properties of food, and (ii) online assignment.	
CILO 3	Through case studies, students will discuss the various spectroscopic techniques and methods that are employed for food analysis.	
CILO 4	Students will examine the role of natural and synthetic substances that are added to foods and their functionalities through case studies and group project and presentation.	
CILO 5	Through case studies, online discussion, group project and oral presentation on food processing, students will critically evaluate the applicability and limitations of various food processing strategies/technologies used in food industry.	

Assessment Tasks/Activities

(Indicative of likely activities and tasks designed to assess how well the students achieve the CILOs. Final details will be provided to students in their first week of attendance in this course)

ILO No	**Type of assessment tasks/activities**	**Weighting (if applicable)**
CILO 1	Web-based assignments and final written examination to test the students' knowledge on chemical nature of foods and the major components of different kind of foods.	
CILO 2	Tutorial assignments and final written examination to evaluate students' capabilities to analyse the physico-chemical properties of foods.	
CILO 3	Web-based discussion in the course forum and final written examination, which require students to apply various analytical and spectroscopic methods in the analysis of different food samples.	
CILO 4	Online quizzes, group project & oral presentation on selected topic and final written examination, in which students are required to rationalise, examine and teach a	

	selected topic in the area of natural and synthetic food additives.	
CILO 5	Online forum discussion, group project & oral presentation on selected topic and final written examination, which require students to discuss, analyse and critically evaluate the applicability of various food processing strategies/technologies used in food industry	

Starting from Semester B, 2002-03, students must satisfy the following "Minimum Passing Requirement" for BCH courses:
"A minimum of 30% in coursework as well as in examination, in addition to a minimum of 40% in coursework and examination taken together".

Grading of Student Achievement: Refer to Grading of Courses in the Academic Regulations for Taught Postgraduate Degrees.

ILO No.	Tutorial assignments	Online quizzes/ assignments/ discussion	Group Project	Oral Presentation	Examination	Total
CILO 1		5%			10%	15%
CILO 2	5%				10%	15%
CILO 3		5%			15%	20%
CILO 4		5%	15%		10%	22.5%
CILO 5		5%			15%	27.5%

Grading will be based on students' performance in assessment tasks/activities. Allocation of marks will be as follows: Coursework (including tutorial assignments, online quizzes/assignments, web-based discussions and oral presentations), 40%; Examination (3 hrs), 60% (see above table).

Part III

Keyword Syllabus:

- Introduction to Food Chemistry
- Water and its physico-chemical characteristics
- Carbohydrate components in food
- Chemistry of lipids in relation to lipid characteristics, emulsions and gels
- Protein structure in relation to food characteristics and nutritional value
- Vitamins and their characteristics
- Natural and synthetic food additives and their functionalities in food processing
- Food processing – principles and applications
- Analysis of foods

Recommended Reading:
Text(s): *Food Chemistry*, 3rd Edition, O. R. Fennema Ed., Marcel Dekker, Inc., New York, 1996.

Food: The Chemistry of Its Components, 4th Edition, T. P. Coultate Ed., Royal Society of Chemistry, Cambridge, UK, 2002.

Online Resources:

N. A.

Teaching Pattern:

Duration of course: 1 semester
Suggested lecture/tutorial/laboratory mix:
Lectures: 26H
Tutorials: 13H