

Subject Description Form

Subject Code	ABCT1D10
Subject Title	Food Color, Taste and Smell
Credit Value	3
Level	1
Pre-requisite	NIL
Co-requisite	NIL
Exclusion	
Objectives	This subject aims to introduce the fundamental principles of food color, taste and smell; as well as science and technology for food production and waste treatment.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> 1. understand the fundamentals of food components that are responsible for color, taste and smell, 2. appreciate the food kitchen as a fantastic laboratory, 3. identify possible food pollution sources and technological solutions for them, 4. demonstrate analytical and critical thinking for current food-related and environmental-related issues concerning food and environmental safety, 5. realize the industrial, social and national responsibility in reducing pollution and food labeling system for safety food consumption, 6. appreciate the importance of lifelong learning, teamwork, and communication skills.
Subject Synopsis/ Indicative Syllabus	<p>Basic principles and fundamentals of food science and environmental treatment technology for food waste will be introduced in this course. Fundamental principles of food color, taste and smell will also be discussed.</p> <p>Details of Indicative Syllabus:</p> <p>(a) Basic science of Food Products</p> <ul style="list-style-type: none"> - carbohydrates - proteins - lipids - vitamins - pigments and additives

	<ul style="list-style-type: none"> - food labeling system for safety food consumption <p>(b) Essentials of Food Color, Taste and Smell</p> <ul style="list-style-type: none"> - principle of color spectrum and color vision - natural and artificial sources of food color and food labeling system - color changes during cooking and preservation - the flavors for the taste and smell of food and the origin of pungent smell <p>(c) Basic food-related environmental science and technology</p> <ul style="list-style-type: none"> - current food contamination and environmental-related pollution issues and their related practices and treatment technology - pollution control technology and technological treatment for kitchen waste
<p>Teaching/Learning Methodology</p>	<p>Lectures: Fundamental principles of food color, taste and smell will be demonstrated and discussed. Technological methods and treatment will be introduced. Examples will be used to demonstrate the scientific principles.</p> <p>Tutorials: Students are required to search for information and discussion is encouraged for selected topics. Daily life tutorial questions will be used to draw students' interest and discussion. Finally, logical thinking will be developed using the tutorial questions.</p> <p>Laboratories: Simple experiments for food production and color and flavor testing. Students can acquire basic scientific and technological knowledge for the development of analytical skills as well as critical and creative thinking for conducting experiments and scientific report writing. Students will develop their team spirit through group practical classes. Laboratory work includes various small experiments, such as Maillard reaction, Caramelization, color of vegetables, oil rancidity, butter making and ice-cream making. The ideas of using sensory laboratory to get panelists' opinion on food products.</p> <p>Project: students will be required to deliver a presentation on selected topics. Through presentation, individual written report and reflective journal, their higher order thinking, such as problem analysis and solving skills, critical thinking and creative thinking, can be evaluated. Creative ideas can be solicited through the preparation of group presentation and discussion. During the preparation, students will have chance to apply their lifelong learning skills, analytical skills as well as critical thinking for problem identification, data collection, analysis and interpretation as well as drawing conclusion and recommendation for further action. In this subject, students are required to do extensive reading (on literatures, reference books and government reports/websites and internet) and analyze information for possible action formulation via self-study and group discussion. Students will also be required to write an individual report on their findings for consolidation and elaboration of concept.</p>

**Assessment Methods
in Alignment with
Intended Learning
Outcomes**

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
		1	2	3	4	5	6
1. Test	30%	✓		✓	✓	✓	
2. Laboratory work	20%	✓	✓		✓		✓
3. Group Project		✓		✓	✓	✓	✓
a. Presentation	10%						
b. Individual written report	15%						
c. Reflective journal	5%						
4. In-class tutorials	20%	✓	✓	✓	✓		
Total	100 %						

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Test:

Assess the students' understanding of the basic principles of scientific methods related to food and technology in food-related environmental issues. The students' higher order thinking, such as analytical and problem solving skills, will be evaluated. [Outcomes 1, 3, 4 and 5]

Laboratory work:

Student performance during the laboratory classes will be assessed, and their report will be graded. The students' higher order thinking, such as the analytical mind, data collection as well as report writing skill will be assessed and evaluated. Students will develop their teamwork skill during practical classes. [Outcomes 1, 2, 4 and 6]

Project:

Students will be assessed based on their individual performance in presentation skills and prepared content in their report and reflective journal, as well as response to questions raised by subject lecturer(s) and peers. The team spirit and individual contribution to the presentation will also be evaluated. [Outcomes 1, 3, 4, 5 and 6]

In-class tutorials:

To support students' learning with tutorial questions and videos. Daily life tutorial questions will be used to draw students' interest and discussion.

	Finally, logical thinking will be developed using the tutorial questions. [Outcomes 1, 2, 3 and 4]	
Student Study Effort Required	Class contact:	
	▪ Lecture	20 Hrs.
	▪ Tutorial	11 Hrs.
	▪ Laboratory	8 Hrs.
	Other student study effort:	
	▪ Preparation of presentation and laboratory reports	22 Hrs.
	▪ Self study (reading on literature, reference books, textbooks and reports)	70 Hrs.
	Total student study effort	131 Hrs.
Reading List and References	<ol style="list-style-type: none"> Lecture notes and supplementary materials (for some special topics) will be given. Relevant website where information on most of the topics covered in the syllabus are available: http://www.chemistryquestion.com/; http://www.epd.gov.hk/; http://www.epa.gov/; http://www.environment.gov.au/; http://www.eea.europa.eu/; http://www.environment-agency.gov.uk/ On Food and Cooking <i>The Science and Lore of the Kitchen</i>, Revised Edition 2004, Harold McGee, Scribner, ISBN 0-684-80001-2 The Kitchen as Laboratory: Reflections on the Science of Food and Cooking, 2012, Cesar Vega, Job Ubbink and Erik Van Der Linden, ISBN 978-0-231-15344-7 Sustainability in the food industry, 2009, Cheryl Baldwin. ISBN 9780813808468 Food: The Chemistry of its Components, 2009, Tom Coultate. ISBN 978-0854041114 Food Chemistry [electronic resource in PolyU Library], 2009, H.-D. Belitz, W. Grosch, P. Schieberle. 	