

## Subject Description Form

<b>Subject Code</b>	PRINCIPLES OF EPIDEMIOLOGY & RISK CONTROL
<b>Subject Title</b>	ABCT4411
<b>Credit Value</b>	2
<b>Level</b>	4
<b>Pre-requisite / Co-requisite/ Exclusion</b>	Human Physiology (ABCT2133) & Food Toxicology (ABCT3409)
<b>Objectives</b>	The subject is designed to provide students with an interactive overview to basic epidemiology principles and risk control strategies. It equips students with theoretical knowledge, analytical skills and conceptual framework to discuss issues from both the epidemiological and risk managing perspectives. This subject will enable students to apply their acquired knowledge of the food related industries in epidemiology. It will also help develop students' critical thinking for their personal development.
<b>Intended Learning Outcomes</b>	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> <li>a. explain and analyze epidemiological data and risk control issues with an insight of the general principles;</li> <li>b. identify the use of various types of epidemiological studies;</li> <li>c. formulate suitable risk assessment methods on daily situations;</li> <li>d. apply epidemiological and risk control knowledge to analyze practical examples in the food related industries;</li> <li>e. develop their analytical, critical thinking, oral and written communication as well as problem-solving skills.</li> </ol>
<b>Subject Synopsis/ Indicative Syllabus</b>	<p><u>Scope of Epidemiology</u> Definition; individual and population; nature of epidemiological variables; unique contribution of epidemiology.</p> <p><u>Epidemiologic Approach to Disease and Intervention</u> Dynamics of disease transmission; measuring the occurrence of disease; ways of expressing prognosis; design strategies in epidemiologic research.</p> <p><u>Using Epidemiology to identify the Cause of Disease</u> Systematic reviews; Intervention studies; cohort studies; case-control and cross-sectional studies; estimating risk and association; from association to causation; causal inferences: bias, confounding and interaction.</p> <p><u>Epidemiology of Foodborne Disease</u> Selected emerging food-borne pathogens (e.g. cholera, hepatitis A, E. Coli,</p>

	<p>Salmonella, avian influenza, mad cow disease, etc.); surveillance systems for foodborne diseases; outbreaks foodborne disease and their management.</p> <p><u>Risk Control</u> Loss of control management; risk reduction; risk spreading; acceptable risk; impact of risk control on food industry.</p>																																																						
<p><b>Teaching/Learning Methodology</b></p>	<p>Interactive lectures are used to provide general outlines of the key concepts of the subject and to provide guidance on further readings and applications. Each interactive lecture has several sessions of short lectures to provide basic theoretical framework to students. After each short lecture, in-class activities (case studies, group discussion, etc) focusing on high order thinking are used to facilitate students' learning. Tutorials are designed to provide the environment for discussions on the subject materials. In-depth exercises and case studies are held in the tutorials to consolidate and integrate their knowledge. The continuous assessment is based upon a variety of individual and group-based activities, which may include presentations, tests, in-class learning activities and after class learning exercises. They allow students to see the link between individual theory and topic. Examination is focused on the analytical and problem-solving skills to solve epidemiological and risk control problems.</p>																																																						
<p><b>Assessment Methods in Alignment with Intended Learning Outcomes</b></p>	<table border="1" data-bbox="516 940 1451 1476"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="6">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th></th> </tr> </thead> <tbody> <tr> <td>1. Tests</td> <td>15 %</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td></td> </tr> <tr> <td>2. Group presentation</td> <td>15 %</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td></td> </tr> <tr> <td>3. Essay</td> <td>20 %</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td></td> </tr> <tr> <td>4. Final examination</td> <td>50 %</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td></td> </tr> <tr> <td>Total</td> <td>100 %</td> <td colspan="6"></td> </tr> </tbody> </table> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>The assessment of this subject comprises of both formative and summative parts. To ensure that students learn and reflect continuously, continuous assessment (formative) is an important component. It includes tests, presentations and essay writing. The questions in the tests focus on high order thinking and aim at training students' analytical and problem-solving skills as well as helping students prepare for the final examination. The presentation and essay will be assessed using the Biggs' Structure of the Observed Learning Outcome taxonomy which shows clearly students' level of understanding. Both presentation and assay aim at fostering students' abilities to make connections</p>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)						a	b	c	d	e		1. Tests	15 %	√	√	√	√	√		2. Group presentation	15 %	√	√	√	√	√		3. Essay	20 %	√	√	√	√	√		4. Final examination	50 %	√	√	√	√	√		Total	100 %						
Specific assessment methods/tasks	% weighting			Intended subject learning outcomes to be assessed (Please tick as appropriate)																																																			
		a	b	c	d	e																																																	
1. Tests	15 %	√	√	√	√	√																																																	
2. Group presentation	15 %	√	√	√	√	√																																																	
3. Essay	20 %	√	√	√	√	√																																																	
4. Final examination	50 %	√	√	√	√	√																																																	
Total	100 %																																																						

	with and apply what they have learnt. For the summative part, a 2-hour written final examination will be used to evaluate students' level of understanding at the end of the course. It is comprehensive in nature and focuses on assessing students' ability to apply what they have learnt.	
<b>Student Study Effort Required</b>	Class contact:	
	▪ Lecture	20 Hrs.
	▪ Tutorial	4 Hrs.
	▪ Seminar	2 Hrs.
	Other student study effort:	
	▪ Group project	18 Hrs.
	▪ Self-Study	20 Hrs.
	Total student study effort	64 Hrs.
<b>Reading List and References</b>	<p>Essential</p> <ul style="list-style-type: none"> <li>• Gordis, L. Epidemiology. Saunders, 2004.</li> </ul> <p>Supplementary</p> <ul style="list-style-type: none"> <li>• Szklo, M. Epidemiology: Beyond the Basics. Jones &amp; Bartlett, 2007.</li> <li>• Valanis, B. Epidemiology in Health Care. Appleton &amp; Lange, 1999.</li> <li>• Wilkinson, S. Risk Control. (2nd ed.) Witherby, 2003.</li> <li>• Lu, F.C. Basic Toxicology: Fundamentals, Target, Organs and Risk Assessment. Hemisphere Publication, 2002</li> </ul> <p>Recommended Journals for Reference</p> <ul style="list-style-type: none"> <li>• Epidemiology</li> <li>• Food and Chemical Toxicology</li> </ul>	