

The Hong Kong Polytechnic University

Subject Description Form

Subject Code	FSN6507
Subject Title	Scientific Research Analysis and Design
Credit Value	3
Level	6
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	This subject contributes to the achievement of the DFSM outcome by sharpening students' ability to conduct original applied research and ethical awareness in food science and management.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: <ol style="list-style-type: none"> 1. To understand the basic concepts and key processes to conduct empirical research in food and nutritional sciences 2. Critically analyze and evaluate published findings and articles in academic research 3. To achieve the skills required for establishing a doctoral-level research proposal, possibly on fields such as food technology and entrepreneurship.
Subject Synopsis/ Indicative Syllabus	<ol style="list-style-type: none"> a. Introduction to scientific research and philosophy of science b. Research process including research design, hypothesis, ethics, scientific approaches, as well as publish manuscripts in journal. c. Major research methodologies in food science and management including statistical skills, quantitative and qualitative research.
Teaching/Learning Methodology	<p>The course will be based on a series of lectures and interactive discussions.</p> <p>Lectures: Conduct lectures to provide foundational knowledge and theoretical concepts related to research methodologies, data analysis techniques, research design principles, and ethical considerations.</p> <p>Interactive Discussions: Facilitate interactive discussions to encourage critical thinking and active participation among doctoral students. Encourage them to ask questions, share perspectives, and engage in debates on research topics, methodologies, and ethical issues.</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)		
			a	b	c
	1. Individual research report	70 %	✓	✓	✓
	2. Personal reflection essay	20 %		✓	
	3. Attendance	10 %	✓		
Total	100 %				
<p><i>*Weighting of assessment methods/ tasks in continuous assessment may be different, subject to each subject lecturer.</i></p> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>Individual research report is essential to offer students the skills to conduct independent, practical research. A curated list of recommended readings, research articles, and relevant resources aligned with the course topics will be provided for students can explore diverse perspectives and gain a deeper understanding of the subject matter. Each student needs to submit a report on their research direction/plan and are expected to have the knowledge and skills necessary to compose a research proposal for a doctoral-level research proposal.</p> <p>Personal reflection on ethical awareness in food science and management as well as how they can apply the research techniques they have learned in this course to their own research will be evaluated.</p>					
Student Study Effort Expected	Class contact:				
	▪ Lecture/seminar/workshop/oral presentation		30 Hrs.		
	Other student study effort:				
	▪ Lectures preparation		30 Hrs.		
	▪ Assignment / essay preparation		60 Hrs.		
Total student study effort		120 Hrs.			
Reading List and References	<p>Recommended Textbooks</p> <p>Creswell, J. W., & Creswell, J. D. (2017). Research design: Qualitative, quantitative, and mixed methods approaches. Sage.</p>				

	<p>Cook, T. D., Campbell, D. T., & Shadish, W. (2002). Experimental and quasi-experimental designs for generalized causal inference (Vol. 1195). Boston, MA: Houghton Mifflin.</p> <p>Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2012). Management research. Sage.</p> <p>Yin, R. K. (2018). Case Study Research and Applications: Design and Methods. 6th Edition. Sage</p> <p>Gummesson, E. (2000). Qualitative methods in management research. Sage.</p> <p>Pomeranz, Y. (Ed.). (2013). Food analysis: theory and practice. Springer Science & Business Media.</p> <p>For those who can read Chinese:</p> <p>陈晓萍 & 沈伟, 2018. 组织与管理研究的实证方法（第三版）. 北京大学出版社：北京。</p>
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