

The Hong Kong Polytechnic University

Subject Description Form

Please read the notes at the end of the table carefully before completing the form.

Subject Code	ABCT5040
Subject Title	Research Project
Credit Value	6
Level	5
Pre-requisite	All core compulsory subjects in MSc in Sustainable Technology for Carbon Neutrality programme
Objectives	The research project is related to all the core areas of study covered by the programme. This subject aims to promote independent and creative thinking and to train students to develop the academic and practical skills to define, investigate, analyze, and solve scientific/technical problems. The project may involve a theoretical and/or experimental investigation of a fundamental or practical problem related to carbon neutrality and renewable energy.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. conduct a thorough literature search and critically assess the information; b. demonstrate the ability to carry out research work independently; c. identify, formulate, and solve a research problem; d. generate hypothesis, design and conduct studies as well as critically analyze and interpret data, and draw significant conclusions; e. manage and organize time efficiently; f. write a research report and present results orally in an effective, skilful, and professional manner.
Subject Synopsis/ Indicative Syllabus	A theoretical and/or experimental investigation of a fundamental or practical problem in carbon neutrality and renewable energy technologies. The investigation should include a significant research element.
Teaching/Learning Methodology	The project could be fundamental studies on new materials, development of experimental methods/products/equipment, design and evaluation of carbon footprint, and feasibility study/survey on carbon emission reduction. Each student registered in the project will have a project supervisor, who is normally a member of the academic staff or from an industry. With guidance from the project supervisor, each student chooses and proposes his/her project theme. The supervisor's major role is to provide advice and guidance to the student throughout the development of the project, making sure that the student gets ample scope to demonstrate initiative for thinking and working independently

	and creatively. Each student is required to submit a proposal and a final written report and to deliver an oral presentation.							
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	f
	1. Project preparation and efficient planning, organization, approach and execution of the project	10	√	√	√		√	
	2. Project outcomes: originality and significance of work; knowledge and understanding of work; execution of methods; results and data analysis; interpretation of results and conclusions	50	√	√	√	√		√
	3. Written report (organization, style, clarity, fluency, effectiveness, grammar and spelling)	20	√	√	√	√		√
	4. Oral presentation and response to questions	20	√	√	√	√		√
	Total	100 %						
	<p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>The performance of the student will be assessed during the course of the research project. The project is assessed by the approach of work, achievement of proposed objectives, planning and execution of work, quality of research results, interpretation and analysis of results, and presentation of results. The student's ability to write a research report and present results orally in an effective manner will be assessed based on the final written report and oral presentation.</p>							
Student Study Effort Expected	Class contact:							
	<ul style="list-style-type: none"> ▪ Guided Study 						20 Hrs.	

	<ul style="list-style-type: none"> ▪ Guided Theoretical and/or Laboratory Investigation 	50 Hrs.
	Other student study effort:	
	<ul style="list-style-type: none"> ▪ Literature review 	18 Hrs.
	<ul style="list-style-type: none"> ▪ Independent Theoretical and/or Laboratory Investigation 	92 Hrs.
	<ul style="list-style-type: none"> ▪ Writing proposal and final report 	60 Hrs.
	<ul style="list-style-type: none"> ▪ Preparing presentation 	20 Hrs.
	Total student study effort	260 Hrs.
Reading List and References	Related books and journal articles to be advised by supervisors.	