

City University of Hong Kong
Course Syllabus

offered by School of Energy and Environment
with effect from Semester A 2022/23

Part I Course Overview

Course Title:	Dissertation
Course Code:	SEE 6999
Course Duration:	Two semesters (Sem A, Sem B or Summer Semester)
Credit Units:	6
Level:	P6
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: <i>(Course Code and Title)</i>	Nil
Precursors: <i>(Course Code and Title)</i>	Nil
Equivalent Courses: <i>(Course Code and Title)</i>	Nil
Exclusive Courses: <i>(Course Code and Title)</i>	Nil

Part II Course Details

1. Abstract

The aim of the dissertation is to give the opportunity to students to demonstrate their ability to carry out an independent piece of research and development work, and to develop expertise in a chosen subject area related to the program through the application of theory and techniques provided by the program. This will take the form of a substantial study in a subject area related to energy and environment, largely through the exercise of independent inquiry. In undertaking the dissertation, the student should be able to demonstrate ability to exercise judgment, independent thought, initiative, intellectual achievement, understanding of the chosen subject matter, and the principles being applied. The student will also develop and demonstrate the ability to manage and present the dissertation in a precise and coherent manner.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Carry out a literature survey or search of a selected subject, plan the entire project and integrate the materials principles into the project selected.	20%	✓	✓	
2.	Carry out independent research and development work, analyze and interpret data professionally.	40%	✓	✓	✓
3.	Demonstrate initiative, innovative abilities, and critical thinking. Be able to write a good dissertation and present scientific findings orally.	40%	✓	✓	
		100%			

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.			Hours/week (if applicable)
		1	2	3	
Meeting with Primary Supervisor	Regular scheduled meeting with Primary Supervisor to guide student with the learning of fundamentals in the research topic and develop hypotheses	✓	✓	✓	
Survey and analytical work	Hands-on work by the student to put the fundamental knowledge into experimental practice and to verify hypotheses	✓	✓		
Report writing	Scientific writing and professional presentation of written document			✓	
Presentation	Oral presentation to disseminate research findings			✓	

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

The progress of the dissertation will be closely monitored through regular meetings between the dissertation supervisor and the student.

The oral presentation is assessed by a team of assessors, appointed by the dissertation committee, according to style, structure and clarity, and response to questions. The assessment procedures are arranged to incorporate a uniformity of treatment across the student cohort.

Each dissertation report is assessed by the assessor appointed by the project committee to each particular dissertation. The report is assessed as to presentation (clarity, conciseness), technical knowledge and understanding, and accomplishment (technical competence, initiative creativity, effort).

Assessment Tasks/Activities	CILO No.						Weighting	Remarks
	1	2	3					
Continuous Assessment: 100%								
Interim report	✓						10%	
Written dissertation	✓	✓	✓				75%	
Oral presentation			✓				15%	
Examination: 0% (duration: N/A, if applicable)							100%	

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Interim report	Ability to perform initial survey of theoretical background in relevant research topic and building hypothesis around the topic	High	Significant	Basic	Not even reaching marginal levels
2. Dissertation	Ability to describe relevant theoretical background and how the principles are applied to technology and management for solving energy and environment issues. Ability to demonstrate original intellectual thinking.	High	Significant	Basic	Not even reaching marginal levels
3. Oral presentation	Ability to convey research findings orally in a convincing and systematic manner	High	Significant	Basic	Not even reaching marginal levels

Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Interim report	Ability to perform initial survey of theoretical background in relevant research topic and building hypothesis around the topic	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Dissertation	Ability to describe relevant theoretical background and how the principles are applied to technology and management for solving energy and environment issues. Ability to demonstrate original intellectual	High	Significant	Moderate	Basic	Not even reaching marginal levels

	thinking.					
3. Oral presentation	Ability to convey research findings orally in a convincing and systematic manner	High	Significant	Moderate	Basic	Not even reaching marginal levels

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

(An indication of the key topics of the course.)

There is no fixed formal syllabus. Students will be required to undertake individually supervised research and a dissertation. A departmental publication is provided giving details of requirements, timing, and considerations necessary for the successful completion, on time, of the course.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

To be advised by individual supervisor based on the topics of research.

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

Refer to attached *Guidelines to SEE 6999 Dissertation*.

**CITY UNIVERSITY OF HONG KONG
SCHOOL OF ENERGY AND ENVIRONMENT**

**SEE 6999 Dissertation, MSc Energy and Environment
Course Guidelines**

The course shall provide students with the opportunity to conduct research at the highest level, and more importantly to develop a sense of practical and creative science. To facilitate students' dissertation project, a three hour lecture will be given in week 3/4/5 of the first semester, introducing basics of scientific reasoning, research design and academic writing.

1. Course assessment

Students are expected to work out an Interim Report (accounting for 10% of the final mark) and a Dissertation (accounting for 90% of the final mark) by the last teaching week of the first and second semester, respectively.

Table 1. Breakdown of assessment components

Items	Weighting		
	Primary Supervisor	Second Examiner	Total
Interim Report (10% of the final mark)			
Scientific / Engineering Work:			
- Literature Review	50	50	100
- Project Plan	30	30	60
Communication:			
- Interim Report Writing	20	20	40
Total:	100	100	200
Dissertation (90% of the final mark)			
Scientific/Engineering Work:			
- Literature review	10	10	20
- Methodology / Approach	25	25	50
- Data Analysis and Interpretation	25	25	50
- Accomplishment / Effort	10	n/a	10
i. Attitude and Initiative			
ii. Extent of Project Plan Completed			
Communication:			
- Final Report Writing	20	20	40
- Oral Presentation	20	20	40
Total:	110	100	210

1.1. Interim report

During the First Semester, students are required to interact with their Primary Supervisors to identify the area of research. After a thorough literature survey, students are required to present a minimum 2-page interim report (excluding references section, 1.5 spacing, font 12, Times New Roman) on the relevant literature search as well as experimental plan and methodology (after consulting with the supervisor). Interim Report will be assessed by the

Primary Supervisor as well as an independent examiner (Second Examiner) nominated by the committee. Interim Report accounts for 10 marks of the course grading. If a student obtains an overall mark lower than 6 on his/her Interim Report, the student will be given a second chance to improve the Interim Report while carrying out the research on the Second Semester component.

1.2. Dissertation / thesis

Each dissertation/thesis will be examined by the Primary Supervisor and the Second Examiner. When preparing the dissertation thesis, please refer to Appendix for a sample of the title page of a thesis.

Difference in the assessment mark, for the part of written Dissertation thesis only, should not be more than 20 marks. In case the difference in mark is more than 20 marks, an adjudicative examiner (nominated by the committee) will be employed. The final mark will be taken as the average of the two closest, that is, within a 20 marks difference. Otherwise the case will be referred to the committee for arbitration.

1) *Literature Review (10 marks)*

Thoroughness in relevant literature review, both theories and the state-of-the-art achievements, leading to the identification of importance and urgency of research.

2) *Methodology / Approach (25 marks)*

Thoroughness in experimental work, systematic in approach, portrays skillfulness in experimental design, originality and innovations in the overall work as demonstrated by candidate.

3) *Data analysis and interpretation (25 marks)*

Critical analysis of collected data and ability to extract new insights.

4) *Efforts (10 marks) - To be assessed solely by the Primary Supervisor based on the efforts carried out by the candidate throughout the course of the Dissertation.*

Learning attitude, being willing to take initiatives, and the extent to which the thesis project is completed.

5) *Written communication (20 marks)*

Organization and clarity of the information leading to key results and discussion, conciseness in writing (no repetition of information), scientific and technical writing style, and ability to reflect on the strengths and weaknesses of the thesis project.

6) *Oral presentation / examination (20 marks)*

- understanding and integration of the concepts 4 marks
- Clearance and coherence of results and findings 4 marks
- Sufficiency of supporting evidence 4 marks
- Structure and flow of the presentation 4 marks
- Performance in Q & A 2 marks
- Language fluency 2 marks

1.3. Conversion of final mark to letter grade (applicable to students admitted in 2022/23 and thereafter)

Mark	Grade	Grade point	Description
≥ 91 – 100	A+	4.3	The student completes all assessment tasks/activities and the work demonstrates excellent understanding of the scientific/engineering principles and the working mechanisms. He/she can thoroughly identify and explain how the principles are applied to science and technology for solving energy and environment related problems. The student's work shows strong evidence of original thinking, supported by a variety of properly documented information sources other than taught materials. He/she is able to communicate ideas effectively and persuasively via written reports and oral presentations.
≥ 86 – < 91	A	4.0	
≥ 81 – < 86	A-	3.7	
≥ 76 – < 81	B+	3.3	The student completes all assessment tasks/activities and can describe and explain the scientific/engineering principles. He/she provides a detailed evaluation of how the principles are applied to science and technology for solving energy and/or environment related problems. He/she demonstrates an ability to integrate taught concepts, analytical techniques and applications via written reports and oral presentations.
≥ 71 – < 76	B	3	
≥ 66 – < 71	B-	2.7	The student completes all assessment tasks/activities and can describe and explain some scientific/engineering principles. He/she provides simple but accurate evaluations of how the principles are applied to science and technology for solving energy and/or environment related problems. He/she can communicate ideas clearly in written texts and/or in oral presentations.
≥ 61 – < 66	C+	2.3	
≥ 56 – < 61	C	2.0	
< 56	F	0.0	The student fails to complete all assessment tasks/activities and/or cannot accurately describe and explain the scientific/engineering principles. He/she fails to identify and explain how the principles are applied to science and technology for solving energy and/or environment related problems objectively or systematically. He/she is weak in communicating ideas in writing and oral presentations.

1.4. Conversion of final mark to letter grade (applicable to students admitted in 2021/22 and before)

Mark	Grade	Grade point	Description
≥ 91 – 100	A+	4.3	The student completes all assessment tasks/activities and the work demonstrates excellent understanding of the scientific/engineering principles and the working mechanisms. He/she can thoroughly identify and explain how the principles are applied to science and technology for solving energy and environment related problems. The student's work shows strong evidence of original thinking, supported by a variety of properly documented information sources other than taught materials. He/she is able to communicate ideas effectively and persuasively via written reports and oral presentations.
≥ 86 – < 91	A	4.0	
≥ 81 – < 86	A-	3.7	
≥ 76 – < 81	B+	3.3	The student completes all assessment tasks/activities and can describe and explain the scientific/engineering principles. He/she provides a detailed evaluation of how the principles are applied to science and technology for solving energy and/or environment related problems. He/she demonstrates an ability to integrate taught concepts, analytical techniques and applications via written reports and oral presentations.
≥ 71 – < 76	B	3.0	
≥ 66 – < 71	B-	2.7	
≥ 61 – < 66	C+	2.3	The student completes all assessment tasks/activities and can describe and explain some scientific/engineering principles. He/she provides simple but accurate evaluations of how the principles are applied to science and technology for solving energy and/or environment related problems. He/she can communicate ideas clearly in written texts and/or in oral presentations.
≥ 56 – < 61	C	2.0	
≥ 51 – < 56	C-	1.7	
≥ 46 – < 51	D	1.3	The student completes all assessment tasks/activities but can only briefly describe some scientific/engineering principles. Only some of the analysis is appropriate to show how the principles are applied to science and technology for solving energy and/or environment related problems. He/she can communicate simple ideas in writing and oral presentations.
< 46	F	0.0	The student fails to complete all assessment tasks/activities and/or cannot accurately describe and explain the scientific/engineering principles. He/she fails to identify and explain how the principles are applied to science and technology for solving energy and/or environment related problems objectively or systematically. He/she is weak in communicating ideas in writing and oral presentations.

2. Course schedule

2.1. First semester (can be Semester A/Semester B for full time students and Semester A/Semester B/Summer Term for part time students)

Student work with his/her Supervisors to identify areas of research and develop a research plan. Interim report is due in the last teaching week in the first semester (academic week 13 for semester A or B, and week 7 for Summer Term)*.

A three hour lecture, introduction to conduct scientific research will be given in week 3/4/5 of the first semester.

2.2. Second semester (the subsequent semester following the First semester)

Students work on his/her dissertation project and submit the finalized written dissertation / thesis by the last teaching week of the second semester (academic week 13 for semester A or B, and week 7 for Summer semester). Oral presentation / examination will be arranged during the examination period of the second semester*.

** Marks will be deducted for any late submission. 10 marks will be deducted for one-day late submission. Request for extension on submission deadline should be submitted with the support of supervisor ONE week before the submission deadline to course leader for consideration and approval, on a case-by-case basis.*

3. Formatting of the written dissertation / thesis

Page setup: margin = 1" (left / right / top / bottom)

Page setup: layout = 0.5" (header / footer)

Line spacing: double

Font type: Times New Roman

Font size: 12 pond (main text), 18 pond (cover page, see Appendix)

CITY UNIVERSITY OF HONG KONG (font size 18)

Title of Dissertation (font size 18)

Submitted to
School of Energy and Environment
in partial fulfillment of the requirements
for the degree of Master of Science in
Energy and Environment

By

Student full name

Student ID:

Date of submission