

**City University of Hong Kong  
Course Syllabus**

**offered by  
Department of Mechanical Engineering  
with effect from Semester A 2022 / 23**

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**Part I Course Overview**

<b>Course Title:</b>	Research and Development Case Study
<b>Course Code:</b>	MNE8007
<b>Course Duration:</b>	One Semester
<b>Credit Units:</b>	3
<b>Level:</b>	R8
<b>Medium of Instruction:</b>	English
<b>Medium of Assessment:</b>	English
<b>Prerequisites :</b> <i>(Course Code and Title)</i>	Nil
<b>Precursors:</b> <i>(Course Code and Title)</i>	Nil
<b>Equivalent Courses:</b> <i>(Course Code and Title)</i>	MBE8007/MBE8007M/MNE8007M Research and Development Case Study
<b>Exclusive Courses:</b> <i>(Course Code and Title)</i>	MBE8001/MNE8001 Comprehensive Studies

## Part II Course Details

### 1. Abstract

The aim of the course is to develop the student’s ability to carry out R&D study in chosen subject area related to mechatronics and automation systems. It will enable students to establish a Research & Development (R & D) proposal to meet defined requirements.

### 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.	<b>Understand</b> the scope and nature of a research and development work, and the process of investigation;		√	√	
2.	<b>Establish</b> a research and development proposal based on the selected engineering topic;			√	√
3.	<b>Develop</b> professional skills of formulating a project work.			√	√

\* If weighting is assigned to CILOs, they should add up to 100%.

N.A.

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	
Class Activities	Seminars and lectures; workshop.	√	√	√	9 hours
Small Group / individual Activities *	Group projects; group discussions; individual proposal development		√	√	30 hours

\*Depending on the number of students participating in the course

### 4. Assessment Tasks/Activities (ATs)

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

Assessment Tasks/Activities	CILO No.			Weighting	Remarks
	1	2	3		
Continuous Assessment:	√	√	√	100%	
Examination: 0%					
				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)
Proposal	Develop a project proposal that includes the definition of the problem and main outcomes that may be accomplished.	High	Significant	Moderate	Not even reaching marginal levels
Report	Evidence of good literature review to develop a methodology towards accomplishing the stated project objectives, project execution and the results obtainable, along with related discussion.	High	Significant	Moderate	Not even reaching marginal levels
Presentation	Summarize the critical aspects of the project, propose a suitable methodology that may be adopted to accomplish the stated objective(s) and likely results in a concise manner during the presentation.	High	Significant	Moderate	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)
Proposal	Develop a project proposal that includes the definition of the problem and main outcomes that may be accomplished.	High	Significant	Moderate	Basic	Not even reaching marginal levels
Report	Evidence of good literature review to develop a methodology towards accomplishing the stated project objectives, project execution and the results obtainable, along with related discussion.	High	Significant	Moderate	Basic	Not even reaching marginal levels
Presentation	Summarize the critical aspects of the project, propose a suitable methodology that may be adopted to accomplish the stated objective(s) and likely results in a concise manner during the presentation.	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.)*

R&D development, professional skill, strategy, seminars and technical talks, Mechatronics, Automations, Robotics, Controls.

**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.)*

Nil

**2.2 Additional Readings**

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

The students need to read technical papers and/or books based on respective project study.