City University of Hong Kong
Course Syllabus

offered by Department of Materials Science and Engineering
with effect from Semester A 2022/23

Part I Course Overview

Course Title:	Survival Skills for Research Scientists
Course Code:	MSE8001
Course Duration:	One semester
Credit Units:	2
Level:	R8
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	AP8001 Survival Skills for Research Scientists
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

The course is aimed at providing students with specially tailored research skills for materials science and engineering, and prepare them for PhD study and future academic career. In details:

- 3 hours teaching for writing a good research paper - how to think about writing, telling research story.
- 2 hours of teaching for presentation skills of scientific data and common mistakes to avoid.
- 2 hours teaching for scientific presentation including PowerPoint preparation and presentation skills.
- 2 hours teaching for efficient literature search and management of bibliographies and references.
- 2 hours teaching for writing good abstracts for conferences and journals.
- 3 hours teaching for preparing research proposals for Hong Kong and mainland research funding.
- 2 hours teaching for ethics, including plagiarism, data fabrication, attribution, IP, conflict of interest, authorship.
- 10 hours of student presentation.

2. Course Intended Learning Outcomes (CILOs)

No.	CILOs	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Prepare and deliver good seminar/conference presentations.			✓	✓
2.	Literature search and management			✓	✓
3.	Research ethics in Science.		✓		✓
4.	Research paper organization.			✓	✓
5.	Scientific data presentation		✓	✓	
6.	Research proposal writing		✓	✓	✓
		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)

TLA	Brief Description	CILO No.						Hours/week (if applicable)
		1	2	3	4	5	6	
1.	Lectures	✓	✓	✓	✓	✓	✓	16/semester
2.	Presentations	✓	✓			✓		10/semester

Scheduled activities: Lectures on each CILO are given first. Tutorials are to discuss the assignments and provide the students with practical examples. Presentations are for students to deliver their own seminar presentations.

4. Assessment Tasks/Activities (ATs)

The assessment of the course is based entirely on coursework.

Assessment Tasks/Activities	CILO No.						Weighting *	Remarks
	1	2	3	4	5	6		
Continuous Assessment: 100%								
1. Assignment	✓	✓	✓	✓	✓	✓	60%	
2. Presentation	✓	✓			✓	✓	40%	
Examination: 0%								
							100%	

5. Assessment 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. Assignment 1	Writing an abstract for a conference submission	High	Moderate	Basic	Not reaching marginal level
2. Assignment 2	Writing a dummy research proposal for RGC Hong Kong	High	Moderate	Basic	Not reaching marginal level
3. Presentation	Skillful presentation of research work. This includes preparation of slides and effective presentation techniques	High	Moderate	Basic	Not reaching marginal level

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. Assignment 1	Writing an abstract for a conference submission	High	Significant	Moderate	Basic	Not reaching marginal level
2. Assignment 2	Writing a dummy research proposal for RGC Hong Kong	High	Significant	Moderate	Basic	Not reaching marginal level
3. Presentation	Skillful presentation of research work. This includes preparation of slides and effective presentation techniques	High	Significant	Moderate	Basic	Not reaching marginal level

Part III Other Information

1. Keyword Syllabus

- Research ethics (plagiarism, data fabrication, attribution, IP, conflict of interest, authorship)
- Preparing and delivering a seminar presentation
- Research proposal organization
- Scientific data presentation
- Research paper organization

2. Reading List

2.1 Compulsory Readings

1.	Goodlad, S, 1996: Speaking Technically. Imperial College Press, 112pp.
2.	Holtom, D and E Fisher, 1999: Enjoy Writing Your Science Thesis or Dissertation! Imperial College Press, 278pp.
3.	Yang, J T, 1995: An Outline of Scientific Writing. World Scientific, 160pp.

2.2 Additional Readings

N/A