City University of Hong Kong
Course Syllabus

offered by Department of Mathematics
with effect from Semester A 2019/20

Part I Course Overview

Course Title:	**Research Methodology and Ethics**
Course Code:	**MA8003**
Course Duration:	**Two semesters (Semesters A and B / Semesters B and A)**
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)*	**Nil**
Exclusive Courses: *(Course Code and Title)*	**Nil**

Part II Course Details

1. Abstract

This course aims to:

- enhance students' awareness and exposure to advanced topics in applied mathematics;
- introduce students basic principles of research ethics and their importance in research;
- broaden students' knowledge and keep them abreast with recent advances in various areas of applied mathematics by attending seminars given by experts; and
- develop students' skills in research topic presentation from seminars given by experts and from presentations given by themselves.

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.	Initiate independent studies in advanced topics of applied mathematics.	-	✓	✓	
2.	Advance knowledge of various areas of applied mathematics by conducting literature search and integrating up-to-date research development to their courses of study.	-	✓	✓	✓
3.	Understand importance of principles of research ethics and be able to apply them in their own research.	-	✓	✓	✓
4.	Acquire effective communication skills of presenting Mathematical knowledge professionally. Make mathematical and social contacts with academics from local and overseas communities.	-	✓	✓	✓
5.	Prepare a presentation summarizing research advances and/or progress in specific topic(s).	-		✓	✓
		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		
Lectures	Learning through teaching is primarily based on lectures	✓	✓	✓		✓		-
Seminar participation	Learning through participation in seminars, colloquia, workshops, etc. exposes students to recent research topics and frontiers of applied mathematics as well as enhances their mathematical	✓	✓	✓	✓			12 seminars
Seminar presentation	Learning through presentation enables students to report research development of specific topic(s) orderly and/or to relate its relevance to subject knowledge.	✓	✓	✓	✓	✓		-

4. Assessment Tasks/Activities (ATs)

100% coursework assessment (based on report, seminar participation and seminar presentations.)

Each student is required to attend 12 seminars and give 2-4 seminar presentations on a date set by the course examiner and his/her supervisor (This seminar is to be attended by the supervisor and other students).

Assessment Tasks/Activities	CILO No.						Weighting	Remarks
	1	2	3	4	5			
Continuous Assessment: 100%								
Report			✓				20%	It should reflect the students' understanding about research ethics and how to apply the principles in their own research.
Seminar participation	✓	✓	✓	✓			20%	Participation in seminar and other academic activities engages students in appreciating more advanced topics of applied mathematics of their interest.
Seminar presentation	✓	✓	✓		✓		60%	Students are assessed on their ability of presenting substantial knowledge and research development of chosen topic(s) on applied mathematics in a seminar.
Examination: ____% (duration: , if applicable)								
							100%	

5. Assessment Rubrics

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Report	DEMONSTRATION of the understanding of the basic principles of research ethics	High	Significant	Moderate	Basic	Not even reaching marginal levels.
2. Seminar participation	CAPACITY FOR SELF-DIRECTED LEARNING to understand recent research topics and frontiers of applied mathematics as well as mathematical knowledge and presentation skills.	High	Significant	Moderate	Basic	Not even reaching marginal levels.
3. Seminar presentation	ABILITY to report research development of specific topic(s) orderly and/or to relate its relevance to subject knowledge.	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

- Independent study
- Literature search
- Research ethics
- Communication and presentation skills

2. Reading List

2.1 Compulsory Readings

1.	
2.	
3.	
…	

2.2 Additional Readings

1.	
2.	
3.	
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