

**City University of Hong Kong
Course Syllabus**

offered by College/School/Department of Mathematics
with effect from Semester A 20 20 / 21

Part I Course Overview

Course Title:	Applied Mathematics Laboratory
Course Code:	MA4533
Course Duration:	6 weeks in a semester for a group of around 3 students
Credit Units:	1 credit unit
Level:	B4
Proposed Area: <i>(for GE courses only)</i>	<input type="checkbox"/> Arts and Humanities <input type="checkbox"/> Study of Societies, Social and Business Organisations <input type="checkbox"/> Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: <i>(Course Code and Title)</i>	MA2508 Multi-variable Calculus
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

(A 150-word description about the course)

This course enables students to apply the knowledge and methods gained in the first half of the programme to practical topics by writing a project report and making a presentation. It develops students' problem-based learning and team work ability, presentation skill and report writing ability.

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.	conduct both independent and group study for problem solving and solution seeking.	30%	X		
2.	apply mathematical knowledge and computing techniques of selected topic(s) to create and analyze models of real-life problems.	30%		X	X
3.	evaluate critically appropriateness of methods of analysis.	10%		X	
4.	complete well-structured report with coherent presentation of methodology and results.	20%			X
5.	the combination of CILOs 1-4	10%			X
		100%			

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

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

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	4	5		
Lectures	Learning through lectures helps students acquire knowledge and techniques of specific topics for investigating concrete problems and writing a report.		✓					7 hours in total
Tutorials	Learning through tutorials encourages class participation (in the form of questions and	✓						6 hours in total

	discussions) and exchange of academic ideas among students.							
Laboratory sessions	Learning through laboratory sessions is primarily based on interactive problem solving and hand-on computing exercises allowing instant feedback.		✓					4 hours in total
Project	Learning through project helps students apply knowledge and computing techniques to investigate a more advanced topic of applied mathematics. It also helps students to communicate and collaborate effectively in the team.	✓	✓	✓	✓	✓		9 hours in total

4. Assessment Tasks/Activities (ATs)

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

100% coursework assessment

(50% on project report jointly written by students in the group, 50% on oral presentation)

Assessment Tasks/Activities	CILO No.					Weighting*	Remarks
	1	2	3	4	5		
Continuous Assessment: <u>100</u> %							
Report	✓	✓	✓	✓		50%	It should include students' own account of investigations and findings, with critical exposition of knowledge in literature. Students are also required to organize materials systematically, with all the necessary references stated.
Oral Presentation				✓		50%	Students are also assessed on the ability to present project aims, methodology and investigations/findings effectively.
Examination: <u>0</u> % (duration: _____, if applicable)							
* The weightings should add up to 100%.						100%	

5. Assessment Rubrics

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

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Report	Evaluation is based on the following points: organization, modelling, method, results and practical significance.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Oral Presentation	The statement of the problem solving; the ability of delivering complex concepts; the ability to answer questions	High	Significant	Moderate	Basic	Not even reaching marginal levels
3.						
...						

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.)

The topic must be of an appropriate advanced level in applied mathematics. It should include substantial academic content and require the students to have deep understanding of the topic and make clear written and oral presentation.

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.)

1.	
2.	
3.	
...	

2.2 Additional Readings

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

1.	
2.	
3.	
...	