

**City University of Hong Kong
Course Syllabus**

offered by College/School/Department of Mathematics
with effect from Semester A 20 22 / 23

Part I Course Overview

Course Title: Dissertation

Course Code: MA6617

Course Duration: Normal duration is 2 consecutive semesters (including summer term);
maximum duration is 3 consecutive semesters

Credit Units: 6

Level: P6

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

- develop a student's expertise in his/her chosen subject area through application of mathematical theory and analytical techniques; and
- demonstrate a student's ability to present and organize subject knowledge scholarly in an independent research.

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 independent study for problem solving and solution seeking. | 20% | ✓ | | |
| 2. | integrate mathematical knowledge and techniques of diverse subjects in formulating and analyzing practical problems. | 20% | ✓ | ✓ | |
| 3. | assess critically appropriateness of research methodology and strategies in approaching problems. | 20% | ✓ | ✓ | |
| 4. | justify mathematical results with substantial rigor and numerical illustrations. | 20% | ✓ | ✓ | ✓ |
| 5. | prepare a coherent dissertation with effective presentation of literature and analysis of results. | 20% | ✓ | ✓ | ✓ |
| | | 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 | 4 | 5 | 6 | |
| Consultation/ Supervision | Learning through consultation and supervision helps students identify appropriate dissertation topics, acquire specific knowledge and techniques, exchange academic ideas and improve quality of written work. | | ✓ | ✓ | ✓ | ✓ | | |
| Individual Work | Learning through individual work helps students acquire knowledge and skills necessary for project completion, and execute the associated work with sufficient diligence. | ✓ | ✓ | ✓ | ✓ | ✓ | | |

4. Assessment Tasks/Activities (ATs)

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

- This course is a dissertation-type course under Academic Regulation 11.4: 100% dissertation work
- This course *cannot* be repeated

| Assessment Tasks/Activities | CILO No. | | | | | | Weighting | Remarks |
|--|----------|---|---|---|---|---|---|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | | |
| Continuous Assessment: 100 % | | | | | | | | |
| Dissertation proposal | | ✓ | ✓ | | | | Each student is required to submit a dissertation proposal which outlines principal question(s) of investigation, suggested methodology and relevance of the chosen topic to specific discipline(s). | |
| Continuous progress | ✓ | ✓ | ✓ | ✓ | | | Student's progress is monitored regularly so as to identify any problem encountered in study and ensure he/she is likely to complete the dissertation timely in a satisfactory manner. | |
| Dissertation | ✓ | ✓ | ✓ | ✓ | ✓ | | It should include student's own account of investigations and findings, with a systematic and critical exposition of knowledge in literature. The student is also required to present materials coherently, with all the necessary references stated. | |
| Oral presentation (with Question-Answer session) | | | | | ✓ | | Each student is also assessed on the ability to communicate aims, methodology and investigations/findings of the dissertation effectively. | |
| Examination: 0 % (duration: hrs, 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. Dissertation proposal | Literature review on the relative field and general developing trend | High | Significant | Basic | Not even reaching marginal levels |
| 2. Continuous progress | Progressive understanding a specific field in depth | High | Significant | Basic | Not even reaching marginal levels |
| 3. Dissertation | Realization of learning and creativity in rigor | High | Significant | Basic | Not even reaching marginal levels |
| 4. Oral presentation (with Question-Answer session) | Comprehensive understanding on both general and specific field | 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. Dissertation proposal | Literature review on the relative field and general developing trend | High | Significant | Moderate | Basic | Not even reaching marginal levels |
| 2. Continuous progress | Progressive understanding a specific field in depth | High | Significant | Moderate | Basic | Not even reaching marginal levels |
| 3. Dissertation | Realization of learning and creativity in rigor | High | Significant | Moderate | Basic | Not even reaching marginal levels |
| 4. Oral presentation (with Question-Answer session) | Comprehensive understanding on both general and specific field | 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.)

No formal syllabus. Students will be required to undertake individually supervised research and dissertation preparation.

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. | Halyna M. Kornuta and Ron W. Germaine, A Concise Guide to Writing a Thesis or Dissertation, Routledge, 2nd Edition |
| 2. | |
| 3. | |
| ... | |

2.2 Additional Readings

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

| | |
|-----|--|
| 1. | |
| 2. | |
| 3. | |
| ... | |