

**Implementation Guidelines for the Ph.D. Candidacy Examination (CE)
Mathematics (Math)
School of Science and Engineering (SSE)
The Chinese University of Hong Kong, Shenzhen (CUHK(SZ))**

According to the Principles of the Ph.D. Candidacy Examination approved by the Graduate Panel, the following guidelines are proposed for implementation of the CE.

The candidacy examination contains a written component of one or more papers, and an oral examination.

1. The Written Examination

The Written Examination should be taken before the Oral Examination, and is scheduled twice a year:

- **The first examination is normally held at the beginning of August.**
- **The second examination is normally held at the beginning of March.**

2. Evaluation of Written Examination

The written examination covers the basic disciplinary knowledge expected of a PhD student. There are following subjects for the students to choose:

**Algebra,
Geometry,
Topology,
Representation Theory,
Analysis,
Differential Equations,
Numerical Analysis,
Methods of Applied Mathematics,
Advanced Financial Models,
Computational methods in financial mathematics.**

There are 4 categories:

Cat I: Pure Mathematics

Students majored in pure math must take Algebra and can choose another subject from all other subjects listed above.

Cat II: Analysis

Students majored in analysis must take Analysis and can choose another subject from

all other subjects listed above.

Cat III: Applied Mathematics

Students majored in applied mathematics must take Numerical Analysis and can choose another subject from all other subjects listed above.

Cat IV: Financial Mathematics

Students majored in financial mathematics must take Advanced Financial Models and can choose another subject from all other subjects listed above.

The passing mark for each subject is 6 and the passing mark for the Written Examination is 12 with a full mark of 20 (the full mark is 10 for each course).

The written examination should be taken within the first two year of the Ph.D. study.

3. The Oral Examination

The Oral Examination should be taken within a maximum period of pre-candidacy after passing the Written Examination.

The maximum period CANNOT be exceeded unless extraordinary circumstances occurred, e.g., medical or family emergencies. In such cases, the maximum period can be further prolonged for 1 month, but an approval must be obtained from the BGS. If otherwise, the student will receive a Fail for the Oral Examination. **The Oral Examination can be taken for 2 times.**

The student needs to first prepare a Thesis Proposal and then give a presentation on the Thesis Proposal, the Thesis Proposal is required to be written in at least 3,000 words in English, with reference not included, and monitored by Graduate Panel, and may additionally include questions on general topics similar to the written examination but conducted in an oral format. The Thesis Proposal should contain at least the purpose of the Thesis and a survey of the related research field, and can also contain other contents, such as the research plan and possible research outcome.

The Oral Examination is examined by an Examination Committee which should be nominated by the student's supervisor(s) and approved by the Graduate Panel. The Examination Committee must consist of the supervisor and at least 2 faculty. The supervisor cannot be the Chair of the Examination Committee and the 2 faculty are suggested to be members of the Thesis Defense Committee. If the student failed the first Oral Examination, the members of the student's second Examination Committee can be different from the members of the student's first Examination Committee, but an approval must be obtained from the Coordinator of the Mathematics Mphil-PhD Programme.

The student should give a **45 minutes presentation, which is followed by a 15 minutes question/answer session open to anyone, and then a maximum of 45 minutes question/answer session open to only the Examination Committee.** During the Oral Examination, the members of the Examination Committee may ask the student questions relating to his/her presentation and Thesis Proposal, and the topics chosen by the student in his/her Written Examination.

4. Evaluation of Oral Examination

For the Oral Examination, the Examination Committee should evaluate the student's performance based on the oral presentation, the written thesis proposal, and the performance in the question/answer session. After discussions, the Examination Committee makes a recommendation for the student: Pass, Conditional Pass (should re-submit the thesis proposal/attend the oral exam again within 1 month depends on the exam committee's decision), transfer to MPhil or Fail.

5. Declaration to Take CE and Withdrawal from CE

5.1 The student must declare his/her intention to take the CE 30 days before the CE written exams.

5.2 The student must fill out the form "Intent to Participate in Ph.D. Candidacy Examination". In the form

- **The student must declare a category and 2 subjects approved by the student's supervisor(s).**
- Members of the student's Examination Committee must be nominated.
- The form must be signed by the student's supervisor(s).

5.3 The student must submit a Thesis Proposal 30 days before the Oral Examination. If otherwise, the student will be automatically withdrawn from the Oral Examination. Once the Thesis Proposal is submitted, the student CANNOT withdraw from the Oral Examination unless extraordinary circumstances occurred that prevent them from taking the examination, e.g., medical or family emergencies. In such cases, an approval must be obtained from the Coordinator of the Mathematics Mphil-PhD Programme. If otherwise, the student will receive a Fail grade for the Oral Examination.

5.4 If the student passes both the Written Examination and the Oral Examination, then the Examination Committee makes a recommendation for the student to pass the CE.

THE END