QUALIFYING EXAMINATION FOR TRANSFERRING TO A PH.D PROGRAM

DBS Graduate Studies Committee
(February 05, 2010)

Under the university policy, all graduate students who wish to transfer to the Ph.D. program are required to take two examinations: a written qualifying examination followed by an oral examination. The written examination will test whether students have sufficient knowledge in broad aspects of biology and are capable of creative thinking and problem-solving, while the oral examination will test more specifically on the research project and the relevant research area.

Written Qualifying Examination

Schedule of written examination
The department will conduct the written examination at the beginning of every semester, i.e. January and August. Details of date and venue will be announced about two months in advance.

Procedure
- Students who wish to transfer to the Ph.D. program need to pass the written qualifying examination latest by the beginning of their fourth semester.
- Students need to get their supervisors’ approval before applying.

Format of the written examination
The examination tests a student’s knowledge and ability to formulate a research project, i.e. making a hypothesis and designing experiments. It will be a close-book, four-hour exam. Students choose one topic in three areas, namely, cellular and molecular biology /developmental biology, biodiversity /environmental biology, and biophysics and structural biology (about 3 to 4 topics in each area), and write a short research proposal (up to 15 pages with double line spacing) on a selected topic. Topics /research questions will be broad, and not meant to test a narrowly and specifically defined subject. Background information and enough ‘hints’ will be provided in the question so that students have the necessary information to write a proposal.

The research proposal format is flexible, however, it should include (but not limited to): title, suggested objectives, formulated hypotheses, significance of the project, and experimental (or data-collecting) approaches to test the hypothesis. Expected outcomes /deliverables can also be added to the proposal (optional).

Marking standards
- The proposal should be clearly written and the handwriting must be clear.
- The suggested objectives are reasonable.
- The formulated hypotheses are justified.
• The academic significance of the project is clearly stated in the context of known knowledge.
• The experimental approaches are reasonably sound and appropriate to achieve the objectives. Note that the proposed experimental tools (e.g. PCR, mass spectrometry, confocal microscopy, BLAST search, NMR, etc) should be feasible, namely currently available.

**Preparation for the examination**

• Students should read a broad range of research articles to see how other biologists formulate hypotheses, design and perform research to address biological questions

• Students are encouraged to consult their supervisors on how to write a research proposal, and to read BMRC and MOE Tier 1 and Tier 2 grant proposals from their supervisors.

**Results of the examination**

There will be “Pass” or “Fail” grades. A “Pass” grade will be awarded if the student attains a score equivalent to or above a B grade. Students with a “Pass” grade will then proceed on to the oral examination. Students with a “Fail” grade are allowed to apply for the second examination latest by the beginning of their fourth semester. This will be the final chance.

**Oral Examination**

After passing the written examination, the student can proceed on to the oral examination, which should be conducted latest by 21 months of candidature (end of Apr for Aug intake; end of Sep for Jan intake). This allows time for revision of QE proposal or addition of experimental data in case of a conditional pass. Warning letter will be issued by the HoD if oral QE is delayed beyond the 21 months limit. QE can be conducted earlier anytime from 12-18 months of candidature.

**Requirements**

Before taking the oral examination, the student should meet the following conditions:

A. Three graded level 5000 graduate modules with an average grade of B (CAP of 3.5 and above).

B. Fulfilled a minimum of 48 hours of part-time teaching (24 hours for foreign students) if the student is an NUS graduate scholarship holder.

The oral test will focus on the following:

A. Research progress.
B. Research proposal.
C. Knowledge in the specific research area.
**Procedure**

- A student has to pass the PhD Written Qualifying Examination before an oral qualifying examination can be called for.
- Formation of the examination committee consisting of three voting members and the supervisor(s) as non-voting member(s).
- The committee will generally (although not necessarily) be chaired by a representative of the Graduate Studies Committee.
- The student will need to submit a written report of about 10-15 (maximum) pages, covering (Part 1) hypothesis/objectives, (Part 2) progress and (Part 3) research proposal, **at least two weeks before the oral examination**. The Part 3 should contain a detailed future research plan with around 4-5 pages.
- The student needs to present in an open seminar, followed by a closed session with the examination committee.
- It is mandatory that the supervisor(s) leave the examination venue during the close-door discussion by the examiners.
- A decision will be made by the Committee in the absence of the student and the supervisor(s)

**Results**
The Committee will decide if the student
-- passes the oral examination and can transfer to the Ph.D. program directly.
-- be given a conditional “Pass”, with conditions stipulated by the Committee. A re-examination may be called for if necessary.
-- fails the examination and should not be transferred to the Ph.D. program.

**Thesis Committee**
Upon successful conversion, a Thesis Committee will be formed for each Ph.D. student to assess the student’s research progress throughout the rest of the Ph.D. program.