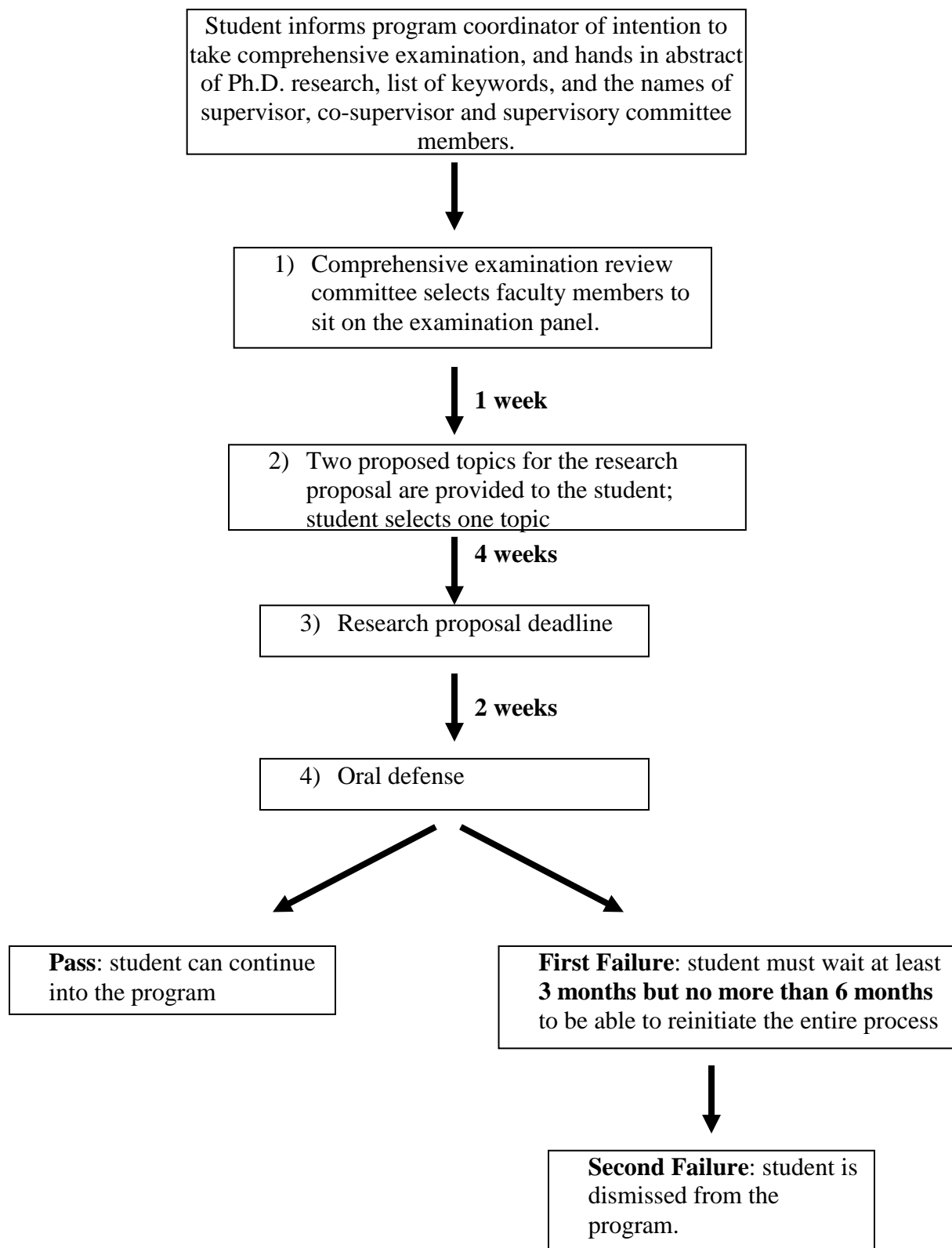


Comprehensive Examination, Ph.D. program in Biomolecular Sciences.



Initiation of the process:

- a. The process is initiated within the first 24 months after admission to the Ph.D. program. Only under exceptional circumstances can the comprehensive exam be taken at a later date. In such a case, the student must give to the program coordinator/director, in writing, his/her reasons for wishing to do so at least one month before the 24 month-deadline. The program coordinator/director, in consultation with the permanent Comprehensive Examination and Dissertation Committee, will then decide whether the request for a late comprehensive examination is sound. After 24 months, the examination will be initiated automatically by the Comprehensive Examination and Dissertation Committee.
- b. The process for taking the comprehensive exam can be initiated at any time during the year.
- c. The student notifies the program coordinator/director, in writing, that he/she wishes to write the comprehensive exam. In consultation with his/her supervisor, the student provides the names of 3 faculty members (at least 2 of whom have core appointments to the Biomolecular Sciences Ph.D. program) that could potentially sit on the comprehensive examination panel. The student may also provide the names of faculty members he/she would prefer not to have on the examination panel along with the rationale. In addition, the student must submit 1) a 1-page summary of their current Ph.D. research project, 2) a list of 10 keywords reflecting his/her research expertise, and 3) the names of supervisor, co-supervisor and supervisory committee members.
- d. The program coordinator/director informs the student, in writing, of the procedural aspects of the comprehensive examination.
- e. The program coordinator/director sends the chair of the comprehensive examination review committee the student's summary, keywords, list of names of potential faculty members and the names of the supervisor, co-supervisor and supervisory committee members. The comprehensive examination review committee members recruit a total of **5** faculty members (4 members and the chair) to form the **examination panel**. The members of the examination panel can be taken from the list provided by the student, but the comprehensive examination review committee members reserve the right to select other faculty members if appropriate.
- f. Composition of the examination panel:
 - i. One member of the comprehensive examination review committee or designate will serve as **chair of the examination panel**. **The chair will**
 1. have no voting privilege;
 2. communicate with the student, program coordinator, examination panel, supervisory committee, Dean of Graduate studies;
 3. coordinate the various sections of the comprehensive examination;
 4. coordinate the various sections of the comprehensive examination and;
 5. write the final report on the comprehensive examination.
 - ii. The examination panel may include one member of the supervisory committee, but excludes the thesis supervisor/co-supervisor.
 - iii. At least 3 members of the examination panel, including the chair, must be core faculty members of the Biomolecular Sciences Ph.D. program.

- iv. If deemed necessary, a member of the examination panel may be recruited from outside the Biomolecular Sciences core faculty. This external panel member can come from another science department at Laurentian University, or from another recognized University/research institute.
- g. The program coordinator/director informs the student, in writing, of the composition of the examination panel and provides the student with Laurentian University's policy on academic integrity.

2. Comprehensive examination:

The comprehensive examination is divided into 2 equally important sections:

- i. **A written research proposal**, aimed at testing the ability of the candidate to come up with original ideas and to design controlled experiments to answer an assigned research question.
- ii. **An oral defense**, which will test the general knowledge of the candidate as well as his/her ability to communicate and defend his/her ideas.

No information may be given to the student as to the success or failure of the different sections of the comprehensive examination until the whole process is completed.

a. **Research Proposal**

- i. At the time of initiating the comprehensive examination, the student hands to the program coordinator/director a short abstract describing his/her current Ph.D. research project. The student also provides a list of up to 10 keywords describing his/her research expertise. These documents are distributed to the examination panel by the chair of the comprehensive examination review committee.
- ii. Within one week, each examination panel member must propose a topic to the Chair. The Chair will choose in consultation with the panel members two topics. These topics will be provided to the student. The topics selected by the examination panel would not be directly related to the student's current Ph.D. research work.

After being informed of the topics, the student has 30 days to write their comp exam research proposal. The student will inform the chair of the comprehensive examination committee of their choice of topic within two days of receiving the topics. The research proposal must be submitted to the Chair of the comp exam committee, at the latest, by 11:59 PM EST/EDT on the last day of the four week (28 day) period.

- iii. The research proposal will have the following format:
 - 1. The proposal should be of 8 pages maximum, and should minimally include the following headlines:

- a. introduction/literature review
 - b. hypothesis/ objectives
 - c. experimental design (including anticipated results and controls)
 - d. relevance of the proposed research / conclusion
2. other details regarding the format:
- a. 12 pts fonts / single spaced / 2.5 cm margins all around.
 - b. no page limit on references. References must follow the J. Biol. Chem. format.
 - c. 5-page limit on appendices, which are optional. Material included in the appendices must be limited to figures/tables and their legend.
- iv. The thesis supervisor and other faculty members should refrain from helping the student during this process.
- v. The chair of the examination panel can assign a “failure” grade if the proposal is not handed-in on time.
- vi. Upon reception of the research proposal, the examination panel has **2 weeks** to review the grant. Each panel member must then submit a written report to the Chair of the examination panel.
- vii. The evaluation criteria will include:
1. Scientific merit of the written presentation of the proposal.
 2. Originality of the proposal.
 3. Appropriateness of the experimental approach (choice of technique, controls, etc).
 4. Presentation (quality of written presentation, style, organization, clarity, etc.).
- viii. The chair of the examination panel sets a date for the oral examination if no academic integrity issues have been raised.
- ix. For academic integrity issues, the comprehensive examination committee refers the student’s proposal to the BMS comprehensive examination review committee. The BMS comprehensive examination review committee will evaluate the student’s proposal in regards to the alleged plagiarism. The presentation will be delayed until the BMS comprehensive examination review committee has evaluated and rendered a decision on the action to be taken.
- b. **Oral presentation:**
- i. Held **two to three weeks** after the proposal has been handed to the chair of the examination panel. The chair ensures that the date of the oral presentation is advertised publically at least one week in advance.
 - ii. In case one of the examination panel members is missing at the last moment because of emergencies, a designate alternate becomes the chair and the original

chair occupies the position of the missing member. The original chair still writes the final report.

- iii. Participants: student and examination panel. The chair does not ask any questions.
- iv. The oral examination is presided and moderated by the chair of the examination panel.
- v. The public is invited to attend the presentation.
- vi. The student gives a 30 min talk on the proposal. This talk would include:
 1. scientific problem addressed
 2. hypothesis/objectives
 3. experimental design
 4. expected outcomes/significance.
- vii. The format of the question period will be similar to a thesis defense:
 1. The public is first invited to ask questions (duration to the chair's discretion: approximately 15 min). The public is then asked to leave the room for the closed question period.
 2. Closed question period
 - a. no time limit.
 - b. **phase 1**: two rounds of questioning. Each panel member has 10 min in each round.
 - c. **phase 2**: open question period, until the panel is satisfied. No time limit. Students should expect questions that include a **general scope of Biomolecular principles**.
 - d. **phase 3**: student and supervisor (if in attendance) leave the room, while the panel deliberates.
- viii. Unless objections are expressed by the student, the examination panel or the chair of the panel, the student's thesis supervisor/co-supervisor may attend the closed session, but only as an observer. Observers may not participate in the discussion and will not be present during the deliberations of the examination panel (see item 2.d.i). Observers may be asked to leave the room if their presence is deemed to be disruptive to the progress of the examination.
- ix. Question period: Two types of questions will be asked by the panel:
 1. Questions directly related to the proposal;
 2. Questions of broader nature aimed at testing the candidate's knowledge of his/her field. These questions will not be limited to the immediate research area of the student, but could also be taken from the scientific discipline in which the student is studying. For example, a student working on cell death can expect questions on diverse areas of cell biology.
- x. The evaluation criteria are as follows:
 1. Scientific merit of the presentation.

2. General knowledge and reasoning ability as demonstrated in the question/answer session.
3. Presentation (quality of oral presentation, style, organization, clarity, etc.).
4. Knowledge and understanding of expected prerequisites.

c. **Outcome of the examination:**

- i. **Immediately** after the oral defense, the student and the observers are asked to leave the room. The examination panel then deliberates and decides, **on the basis of the oral examination and the research proposal**, whether the student passes or fails (majority vote = at least 3 votes). The student will be given one of the following grades:
 1. Excellent: reserved for a truly outstanding performance.
 2. Good: clear competence in a given area
 3. Fair: some weaknesses worthy of corrective action were noted
 4. Fail: unacceptable performance.
- ii. In case of non-majority votes, here are the following outcomes:
 - Two passes and two fails will result in a fail grading.
 - Two conditional passes and two fails will result in a fail grading.
 - Two passes and two conditional passes will result in a conditional pass grading.
 - Two conditional passes, one pass, and one fail will result in a conditional pass grading.
 - Two passes, one conditional pass, and one fail will result in a conditional pass grading.
 - Two fails, one pass, and one conditional pass will result in a fail grading.
- iii. The student is **immediately** notified verbally of the outcome by the chair of the examination panel in the presence of the members of the examination panel.

iv. A detailed, **written** assessment is prepared by the chair of the examination panel and sent (**within 1 week**) to the student, the program coordinator, the supervisory committee and the Dean of Graduate Studies:

1. **Pass (Excellent or Good grading):** student can complete the program
2. **Conditional pass (Fair grading):** While the overall performance of the student is deemed satisfactory, some weaknesses have been identified. The examination panel will ask the student to prepare a written report on the topic(s) that require strengthening. The format of the report (number of pages, sources, etc.) is at the discretion of the examination panel. This report will have to be handed to the chair of the examination panel no later than 2 weeks after the oral examination. The examination panel then has one week to review the report. If the report is deemed satisfactory (majority vote by examination committee members), then the student will be given a pass. However, if the report is found to be unsatisfactory, the student will be given a fail.
3. **Fail:** the student must repeat the **entire process** from the start. In this situation, a different topic must be chosen for the research proposal. The student **must wait at least three months but no more than 6 months** to be able to reinstate the comprehensive examination process. A new committee shall be struck.

4. **Second failure:** student meets with program coordinator, examination panel, and supervisory committee to discuss possible dismissal from the program.

Appeals Procedure:

The appeals procedure follows current Laurentian University policy.

In the situation that the student is not satisfied with the decision of the examination committee, the following steps must be taken:

Step 1. The student meets with the chair of the examination committee. The two individuals try to resolve the problem.

Step 2. In the situation that the problem could not be resolved, the student and the chair of the examination panel meet with the program coordinator in an attempt to solve their differences.

Step 3. If the results of steps 1 and 2 are not acceptable to the student, he/she has the right to ask a meeting with the members of the examination committee during which the appropriate questions can be asked.

Step 4. If the problem still persists, the student must inform the program coordinator/director, in writing, of his/her wish to appeal the decision by the examination panel. The appeal is then heard **within 2 weeks** by the program's appeals committee:

- a. Program appeals committee: 3 faculty members (2 [permanent] from the Biomolecular Sciences Ph.D. program and 1 [*ad hoc*] from another Ph.D. program) and 2 students (permanent) from the Biomolecular Ph.D. program.
- b. The faculty member from the other department is *de facto* chair of the appeals committee and can only vote in the event of a tie vote.

The appeals committee meets with the parties involved (student, chair of the examination committee) and hears both sides of the issue. The appeals committee then meets *in camera* to reach a decision. The chair of the appeals committee then informs both parties, in writing, of the outcome of the appeal. The program coordinator/director and the Dean of Graduate Studies are also informed.

Step 5. In the situation that one of the parties disagrees with the decision of the Appeals committee, an appeal can be made to the Senate appeals committee.