Department of Geoscience
Doctoral Candidacy Requirements

The University of Calgary Doctoral Candidacy Regulations (“the Regulations”) govern the conduct of admission to doctoral candidacy at the University of Calgary. This document establishes program specific requirements associated with the conduct of admission to graduate candidacy in Geoscience under the Regulations.

A. Statement of Purpose

Admission into candidacy in a Geoscience Graduate Program signifies that the student has broad knowledge in the student’s area of study and is able to think critically about her/his research project and evaluate its merits in the context of the broader field of Geoscience. The candidacy exam is designed to test whether a student has a viable research plan and the necessary background and understanding of the discipline to successfully complete the doctoral program. Students who fulfill the candidacy requirements in Geoscience have both a broad understanding of their discipline and in-depth knowledge and the technical skills to perform research at the doctoral level.

B. Candidacy Requirements

All doctoral students in a Geoscience Graduate Program must successfully complete the following:

1. All program course requirements.
2. A written thesis research proposal within 18 months of the program start date.
3. A Field of Study (FOS) Oral Examination that is based on an examination of general knowledge of the candidate’s discipline and on topics arising from the written thesis research proposal identified in #2 above to be completed within 28 months of the program start date.

Students must submit a viable research proposal that outlines the research that the student will undertake during the doctoral degree program. The proposal should explain the background of the research problem with a survey of the relevant scientific literature, a statement of the principal hypotheses and objectives of the research and demonstrate a comprehensive knowledge of the specialized subject matter required to address the problem. During the oral examination, the student will demonstrate his/her understanding of the proposal and knowledge required to perform the research. As well, the students will be expected to show a breadth of knowledge in their particular discipline within the field of Geoscience.

Format of the Written Thesis Research Proposal

The student will prepare a thesis research proposal and submit copies to their Supervisory Committee before the FOS Oral Examination is scheduled. The proposal should be submitted for evaluation on or before 18 months after starting the PhD program. Upon approval of the thesis proposal by the student’s Supervisory Committee, the FOS Oral Examination will be scheduled. A minimum of five weeks is required between the approval of the thesis proposal and the FOS Oral Examination date.

The student’s proposal must be written according to the following guidelines

1. The proposal is limited to a maximum of 25 pages, including figures, diagrams etc. (excluding references). It is to be typed and double spaced in 12 point font.
2. Roughly 10 pages of the proposal should be devoted to describing the relevance of the project and a thorough background of the research and literature that forms the basis of the proposal.

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3. The main hypotheses and objectives that form the basis of the thesis proposal should be clearly stated.

4. Approximately **10 pages** should describe the proposed research in detail, including a description of the resources required for the research, the accessibility of the resources and a time-line for completion.

All of these elements must be included in the proposal. Failure to do so may render the proposal incomplete and necessitate postponement of the student's FOS Oral Examination until the proposal is revised to completion. See below for more information.

There is no requirement that, for the completed thesis, all the proposed research be successfully carried out. Conversely, completion of the proposed research will not necessarily signify that all thesis-related research requirements have been met.

**Evaluation of the Written Thesis Research Proposal**

A draft of the thesis proposal will be submitted to the student’s Supervisory Committee within 16 months of starting the PhD program. The committee, including the supervisor, will prepare feedback on the draft proposal which will be given to the student within 1 month of the submission. The committee is encouraged to provide critical feedback to improve the student’s scientific writing and thinking. The student will revise the thesis proposal and submit a final proposal to the PhD committee for evaluation. The Supervisory Committee will evaluate the submitted proposal. The committee will meet and give the proposal a formal evaluation of Pass or Fail. The student’s Supervisor will report the results to the Department of Geoscience GPD. The grade is based on the student’s ability to present a viable research proposal in the required format as specified in 1 - 4 above. Clear articulation of all components of the proposal is required for a Pass.

One or less votes for a Fail constitutes a Pass and two or more votes for a Fail constitutes a Fail. In either case the committee will provide feedback on the submitted proposal.

In the event of a Fail, the student must revise and resubmit their written thesis research proposal in accordance with the feedback. The student may resubmit a revised version of their written thesis research proposal within 6 months after receiving the previous decision. As per FGS regulations, a second Fail will result in a Requirement to Withdraw from program.

In the event of a Pass, the Supervisor in consultation with the student will select the remainder of the FOS Oral Examination Committee and schedule the FOS Oral Examination.

**Appeal to a Failed Written Thesis Research Proposal**

Students who fail the written thesis research proposal may appeal to the Faculty of Graduate Studies (see **N.2 Appeals Against Faculty of Graduate Studies Rulings** in the Graduate Calendar).

**Scheduling of the FOS Oral Examination**

Geoscience doctoral students should attempt the FOS Oral Examination within 24 months of their first registration in the PhD program, but must take the FOS Oral Examination no later than 28 months after their first registration in the Faculty of Graduate Studies. The written thesis proposal must be approved a minimum of five before the FOS Oral Examination date.
Composition of the FOS Oral Examination Committee

A neutral chair will chair the examination. The examination is conducted by an Oral Examination committee. It will consist of the Supervisory Committee members and two additional examination committee members. The additional members of the committee may be external to the Department. The supervisor is required, in consultation with the student, to choose the additional faculty members to become part of the committee. The neutral chair will be assigned by the Graduate Program Director.

Supervisory Committee Meeting

Normally, within 12 months of the student’s first registration, the supervisor will organize a meeting of the student’s Supervisory Committee. The Committee, in conjunction with the student, will decide the sub-discipline(s) the student will be examined on during the FOS Oral Examination (e.g. petroleum geology, exploration geophysics, hydrogeology). It is expected that the committee will identify relevant subject matter, text books, literature, etc. necessary for the student to prepare for the examination. A written summary of the sub-discipline field of study examination expectations will be given to the student by the committee and will be submitted to the department. In addition, the committee will discuss the student’s research plan development. All FOS Oral Examination committee members will receive copies of the sub-discipline field of study list and the student’s thesis proposal before the FOS oral examination.

A minimum of five weeks prior to FOS Oral Examination, the student/supervisor will schedule the student’s examination with department graduate office.

Format of the FOS Oral Examination

The exam is comprised of rounds of questions from the examination committee to the candidate. Only members of the examination committee are allowed to question the candidate. All examiners will be given an opportunity to question the candidate. Normally two rounds of questions should be completed within a 2 hour time frame.

Questions should be designed to focus on details and background related to the written thesis research proposal, and general background knowledge in the sub-discipline(s) of geoscience previously discussed with the student during the committee meeting. The objective of the examination is to determine if the student has sufficient knowledge and background to pursue the defined thesis research and if she/he has PhD-level general knowledge of the sub-discipline of geoscience.

Questions to the candidate should be clear and succinct. The student should be given reasonable time to answer. If the student has understood the question and cannot answer, the examiner should pass to another question and not attempt to extract an answer by prolonged interrogation, or by leading the candidate. The chair should guard against any tendency of examiners to interact with each other instead of concentrating on the examination of the candidate.

A successful FOS Oral Examination is one where the student is able to demonstrate a clear understanding of the research proposal, mastery of the background material that forms the basis of her/his research and an advanced level of understanding of their sub-discipline of Geoscience.

Evaluation of the Candidacy FOS Oral Examination

At the end of the examination, the student is asked to withdraw from the room while the committee deliberates on the candidate’s performance on the exam. Before any discussion of the candidate's performance, each examiner must give their preliminary recommendation of Pass or Fail by secret ballot collected by the neutral chair. This provides the committee a frame of opinion upon which to base a full discussion of the student's performance. The examiners then conduct a post-examination discussion on the student’s performance. After the discussion, a final vote will be taken and each examiner must make a recommendation of Pass or Fail on the student’s performance. Every attempt should be made to reach a unanimous decision. A unanimous vote for Pass or only one vote for Fail constitutes a Pass for the
examination. Two or more votes for Fail constitute a Fail for the examination. The Neutral Chair will inform the student of the committee decision.

A “Pass” on the FOS Oral Examination advances the student to the category of "Candidate for the Ph.D." in the Geoscience Graduate Program.

Upon a “Fail” of the Candidacy FOS Oral Examination, the examiners will write brief memos to the Graduate Program Director and copied to the Dean of Graduate Studies explaining the reasons for his/her vote and submit them within five working days from the date of the examination. The neutral chair will write a memo addressed to Graduate Program Director and copied to the Dean of Graduate Studies describing the examination procedures.

Appeal to a Failed FOS Oral Examination

Students who fail the FOS Oral Examination may appeal the decision to the Faculty of Graduate Studies (see N.2 Appeals Against Faculty of Graduate Studies Rulings).

Re-Take of the FOS Oral Examination

Only one re-take of a candidacy examination will be permitted. The re-take will take place no sooner than two months and no later than six months from the date of the first examination. Normally the composition of the examination committee will remain the same. In reporting the results of the re-taken FOS Oral Examination, the committee will again be limited to recommending either a Pass (i.e. no more than one negative vote) or Fail.

Upon a “Fail” of the Candidacy FOS Oral Examination, the examiners will write brief memos addressed to the Graduate Program Director and copied to the Dean of Graduate Studies explaining the reasons for his/her vote and submit them within five working days from the date of the examination. The neutral chair will write a memo addressed to Graduate Program Director and copied to the Dean of Graduate Studies describing the examination procedures. As per FGS regulations, a second Fail of the Candidacy FOS Oral Examination will result in a Requirement to Withdraw from program.
An Overview Guide* of the Candidacy Examination Process

Student meets with PhD Supervisory Committee

~12 months into program

Supervisory Committee and student define a field of study for the examination

Student writes draft of research proposal

Supervisory Committee reviews draft proposal and provides feedback

~12 – 16 months in program

Student writes final version of research proposal

Student submits research proposal to Supervisory Committee

Proposal is evaluated with a Pass or Fail. If it passes, oral examination is scheduled. If it fails, student may resubmit the thesis proposal within 6 months.

Candidacy FOS Oral Examination Committee is finalized and exam scheduled

Oral examination is held (no later than 28 months in program)

Outcome is determined

*This is only a guide, for specifics on the process please see internal document.