

**SUPPLEMENTARY GUIDELINES
FOR PH.D. CANDIDACY EXAMINATIONS**

**Department of Soil Science
Faculty of Agricultural and Food Sciences
University of Manitoba**

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The guidelines contained in this booklet supplement or reinforce those found in the *University of Manitoba General Calendar* under “Faculty of Graduate Studies”, and in the Faculty of Graduate Studies *Academic Guide*.

Rationale

The Ph.D. degree is the highest degree awarded by the University of Manitoba. This degree is granted on the basis of academic achievement, independent research and scholarship, and demonstration of proficiency in the chosen field of study. Students registered in a Ph.D. program do not become candidates for the Ph.D. degree until they have successfully completed a candidacy examination.

Objective

The objective of the candidacy examination is to assess if a prospective candidate to the degree of Ph.D. in Soil Science has a sufficient level of knowledge and communication skills to successfully complete the degree.

The candidacy examination combines elements of both a candidacy and a comprehensive examination. It should assess the student's competence and potential as an independent scientist and should address the following areas:

1. Research potential

Some indications of a student's research potential are the ability to: i) assess and solve problems, ii) interpret and evaluate research results, iii) think critically, and iv) determine future research directions given a particular situation.

2. General knowledge

The *Supplementary Regulations and Guidelines for Graduate Studies in Soil Science* state that "The program requires all students to obtain comprehensive knowledge in the area of specialization ... course work can be selected from soil science, the natural sciences and/or physical sciences." To elaborate on the departmental expectations, Ph.D. candidates are expected to demonstrate superior knowledge in their field of study and general knowledge of soil science at least at a senior undergraduate level.

3. Ability to integrate knowledge and synthesize information.

4. Ability to communicate ideas and thoughts clearly and concisely in both oral and written form.

Timing

At the time specified by the advisory committee, normally within the first two years after the M.Sc. degree but in no case later than one year prior to expected graduation, the student must take the formal candidacy examination. It is expected that a student will take the candidacy examination between 18 and 24 months from the start of their Ph.D. program and not later than 24 months after commencement of the Ph.D. program. It is recommended that the student should have completed at least 75% of required coursework by the time of candidacy examination.

Examining Committee

The Department Head, in consultation with the student's advisor, will appoint the candidacy examining committee. The examining committee shall consist of three members of the Advisory Committee and one additional staff member such that all relevant field of soil science and related field(s) of study are represented. The Department Head will also select a staff member who is not an examiner to chair the examination.

Role of the Chairperson

- To coordinate the examination process
- To provide the student with at least 2 months prior written notice of the date of the examination
- To chair the oral portion of the examination and invigilate the written portion of the examination
- To receive questions from the examining committee prior to the examination date and evaluate the questions relative to the objectives of the candidacy examination.
- To serve as a facilitator in the evaluation of the student's performance. The chairperson will not be required to make his/her own evaluation but will be responsible for compilation of the evaluation results and communication of the results to the student and the faculty of graduate studies

Role of the Examining Committee

- To formulate questions that will assess the student's capabilities relative to the goals of the candidacy examination and submit the questions to the chairperson within the time frame requested by the chairperson
- To evaluate the student's performance relative to the goals of the candidacy examination
- To facilitate the student's preparation for the candidacy examination. This should include guidance relative to expectations and a willingness to spend time with the student discussing principles, concepts and ideas.

Role of the Student

- Consult with the advisory committee about the time for the candidacy examination so that the intent to sit for the candidacy examination is communicated by the Advisor to the Department Head a minimum of three months prior to the expected examination date
- To respond in writing to the Chairperson of the Candidacy Examination Committee acknowledging acceptance of the notice of examination within one month of the examination date
- Ask members of the examining committee for guidance and assistance in preparation for the examination
- Prepare for the examination. Note that preparation for this examination should begin at the beginning of the Ph.D. program. The process should be the gradual development of the student as a scientist, which involves the increasing ability to assess and evaluate information and apply it to his/her area.

Examination Format

The candidacy examination will consist of two parts: a written examination and an oral examination. The written component will be completed prior to the oral component. The oral component should take place within seven days, and not later than two weeks after completion of the written component.

1. Written Examination

The student will sit for this examination over two consecutive working days for a maximum of four hours per day. The examination will cover areas related to the student's research discipline. Each examiner will provide questions to the chairperson in advance.

2. Oral Examination

This examination will normally last 1 to 2 hours and will not exceed 3 hours. Questions should be of a general nature and the focus of the examination should be general knowledge. The goal is to assess a student's ability to think through a problem quickly, their oral communication skills and their general knowledge.

Decision of Examiners

The student must pass both parts of the candidacy examination in order to pass the examination. A student will proceed to the oral examination even if the written examination is failed. After completion of both parts of the examination, a failure in either the written examination or the oral examination will be reported as a failed attempt. A student has a maximum of two attempts. Normally, the second examination will not be taken within three months after the first and requires re-initiation of the examination scheduling process, beginning with consultation between the student and her/his advisory committee. Under special circumstances, the examining committee may recommend that a failed oral examination be repeated within one month and considered part of a single attempt. Candidates failing the second candidacy examination will be required to withdraw from the program.

A favourable decision must be unanimous. Anything less than unanimity will be considered a failure. The Chairperson of the Candidacy Examination Committee should communicate the result of the examination to the student within one week of completion of both parts of the examination and should provide to the student an assessment of his/her performance, based on the comments from the committee, regardless of whether the student passed or failed the examination. This will make the student aware of any weaknesses. Examiners will not report results of the written examination to the student prior to the completion of the oral examination. The assessment of the student's performance in the candidacy examination will be written by the Chairperson of the Candidacy Examination Committee and copied to the Department Head.

All examination papers are returned to the chairperson. Papers that have been passed can be returned to the student. Original copies of failed papers will be kept on file in case of appeal, however, photocopies can be returned to the student.

Guidelines to Examiners

- Review the rationale and objectives of the candidacy examination prior to formulation of your questions. If you have questions regarding the procedure and objectives, discuss this with the person assigned to chair the candidacy examination.
- Prepare your questions well in advance of the date set for the examination and submit them to the chairperson.
- Formulate your questions in such a way that will allow you to evaluate the student's answer not only on the basis of a correct response but also on the basis of communication skills, overall thinking process, interpretation, integration and synthesis.
- Make your final assessment and evaluation according to the objectives of the candidacy examination.

Guidelines to Students

- Review the rationale and objectives of the candidacy examination when you begin your Ph.D. program
- Begin preparation for the candidacy examination when you begin your Ph.D. program.
- Keep up with your reading, talk to people around you and be aware of issues related to soil science.
- Take opportunities to discuss science and research with your colleagues.
- Talk to your advisory committee members several times prior to your examination.
- Don't be afraid to ask questions and to seek answers.
- Demonstrate other skills beside knowledge in answering questions. Provide your reasoning, the assumptions you have made, etc. You will be evaluated on your ability for higher levels of thinking (interpretation, analysis, integration, synthesis). Show your examiners that you can do this.