

# EARTH SCIENCES, PH.D.

Earth Sciences

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(<https://umanitoba.ca/environment-earth-resources/earth-sciences/>)

**Academic Staff:** Please refer to the Riddell website (<https://umanitoba.ca/environment-earth-resources/faculty-staff/#department-of-geological-sciences>) for Faculty information.

## Earth Sciences Ph.D. Program Information

The Doctor of Philosophy program requires completion of a minimum of 12 credit hours of approved courses, and a research project and thesis.

## Admission Information

### Admission to the Faculty of Graduate Studies

Application and Admission Procedures are found in the Academic Guide (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/application-admission-registration-policies/>).

Admission requirements for doctoral students are found in the Doctor of Philosophy General Regulations (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/doctor-philosophy-general-regulations/>) section of the Guide.

### Earth Sciences Ph.D. Admission Requirements

The normal entry requirement is the equivalent of a M.Sc. in Earth Sciences. Students with M.Sc. degrees in related fields may be accepted by the Graduate Admissions Committee providing their planned degree program involves studies in the Earth Sciences. The majority of the required courses taken by the student should normally be in the Department of Earth Sciences. The research should also be in the Earth sciences.

## Application Information

Students should complete and submit their online application with supporting documentation by the date indicated on the Ph.D. Earth Sciences program of study (<https://umanitoba.ca/explore/programs-of-study/earth-sciences-phd/>) page.

## Degree Requirements

### Program Requirements

The Department of Earth Sciences requires that where admission to the Ph.D. program is directly from a Master's degree, a thesis plus the following is required for a total of a minimum of 12 credit hours:

Course	Title	Hours
GEOL 7760	Seminar in Geological Sciences	3
Select a minimum of 9 credit hours (minimum 6 at the 7000 level, maximum 3 at the 3000 or 4000 level)		9
<b>Total Hours</b>		<b>12</b>

In the case of admission to the Ph.D. without a Master's degree, a thesis plus the following is required for a total of a minimum of 15 credit hours:

Course	Title	Hours
GEOL 7760	Seminar in Geological Sciences	3
Select a minimum of 12 credit hours (minimum 9 at the 7000 level, maximum 3 at the 3000 or 4000 level)		12
<b>Total Hours</b>		<b>15</b>

**Expected Time to Graduate:** 4 years

### Progression Chart

#### Ph.D. in Earth Sciences (with M.Sc. degree)

Course	Title	Hours
<b>Year 1</b>		
GRAD 7300	Research Integrity Tutorial	0
GRAD 7500	Academic Integrity Tutorial	0
<b>Hours</b>		<b>0</b>
<b>Years 1-2</b>		
GEOL 7760	Seminar in Geological Sciences (continues each term)	3
Select 9 credit hours from the following:		9
7XXX	Approved courses at 7000 level (6 min credit hours)	
3XXX or 4XXX	Approved courses at 3000 or 4000 level (3 max credit hours)	
GRAD 8010	Doctoral Candidacy Examination	0
<b>Hours</b>		<b>12</b>
<b>Years 3-4</b>		
GRAD 8000	Doctoral Thesis	0
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>12</b>

#### Ph.D. in Earth Sciences (transfer from Master's program or admitted without Master's degree)

Course	Title	Hours
<b>Year 1</b>		
GRAD 7300	Research Integrity Tutorial	0
GRAD 7500	Academic Integrity Tutorial	0
<b>Hours</b>		<b>0</b>
<b>Years 1-2</b>		
GEOL 7760	Seminar in Geological Sciences (continues each term)	3
Select 12 credit hours of the following:		12
7XXX	Approved courses at 7000 level (9 min credit hours)	
3XXX or 4XXX	Approved courses at 3000 or 4000 level (3 max credit hours)	
GRAD 8010	Doctoral Candidacy Examination	0
<b>Hours</b>		<b>15</b>
<b>Years 3-4</b>		
GRAD 8000	Doctoral Thesis	0
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>15</b>

Coursework is normally completed in the first 2 years, and thesis is normally completed Year 4–5. Adjustments may be made with the supervisor's consultation and approval.

Students are required to complete a Ph.D. thesis proposal (normally within 12 months of start of program). The proposal must include an introduction with citation of relevant literature, the research objectives, the proposed methodology including a timetable, the anticipated significant of the research, and references. A proposed budget must be appended to the proposal.

Students are required to submit a report (proposals, results and timetable of thesis work) to the Head on or before February 1 annually. Reports are generally 1 to 2 pages in length.

Students must produce a thesis that is appropriate for the Ph.D. degree being sought and must successfully defend their thesis as determined by the assigned examining committee.

## Registration Information

Students should familiarize themselves with the Faculty of Graduate Studies 'GRAD' courses applicable to their program (<https://catalog.umanitoba.ca/graduate-studies/registration-information/>). If you have questions about which GRAD course(s) to register in, please consult your home department/unit.

All students must consult with their advisor prior to registration and present a completed Program Form to the administrative assistant. The selection of courses and changes in a student's program must be approved by their advisor in the case of Master's students or their advisory committee in the case of doctoral students.

Students should consult the administrative assistant regarding the schedule of graduate course offerings in the department. Please note that some courses require a field component to be run before lectures begin in the fall. Courses with insufficient enrolment may be cancelled well in advance of the first week of lectures.

## Regulations

Students must meet the requirements as outlined in both Supplementary Regulation and BFAR documents as approved by Senate.

### Supplementary Regulations

Individual units may require specific requirements above and beyond those of the Faculty of Graduate Studies, and students should consult unit supplementary regulations (<https://umanitoba.ca/graduate-studies/supplementary-regulations/>) for these specific regulations.

### Bona Fide Academic Requirements (BFAR)

Bona Fide Academic Requirements (BFAR) (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/academic-performance-general/#BFAR>) represent the core academic requirements a graduate student must acquire in order to gain, and demonstrate acquisition of, essential knowledge and skills.

All students must successfully complete:

- GRAD 7300 prior to applying to any ethics boards which are appropriate to the student's research or within the student's first year, whichever comes first; and
- GRAD 7500 within the first term of registration;

unless these courses have been completed previously, as per Mandatory Academic Integrity Course (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/academic-performance-general/#GRAD7500>) and Mandatory Research Integrity Online Course (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/academic-performance-general/#GRAD7300>).

Students must also meet additional BFAR requirements (<https://umanitoba.ca/graduate-studies/student-experience/core-academic-requirements/#additional-requirements-by-program>) that may be specified for their program.

### General Regulations

All students must:

- maintain a minimum degree grade point average of 3.0 with no grade below C+;
- meet the minimum and not exceed the maximum course requirements, and
- meet the minimum and not exceed the maximum time requirements (in terms of time in program and lapse or expiration of credit of courses).