

# BIOCHEMISTRY AND MEDICAL GENETICS, M.SC.

Biochemistry and Medical Genetics

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**Academic Staff:** Please refer to the Biochemistry website (<https://umanitoba.ca/medicine/biochemistry-and-medical-genetics/faculty-staff/>) for Faculty information.

## Biochemistry and Medical Genetics Program Information

The department offers programs leading to the Masters of Science and the Doctor of Philosophy degrees. There are a wide range of potential thesis projects broadly related to one of the following areas of research: cancer, computational biology, epigenetics, genetic basis of development and disease, and regenerative medicine.

## 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 Master's students are found in the Master's Degrees General Regulations ([https://catalog.umanitoba.ca/graduate-studies/academic-guide/masters-degrees-general-regulations/#Admission\\_FGSMasters](https://catalog.umanitoba.ca/graduate-studies/academic-guide/masters-degrees-general-regulations/#Admission_FGSMasters)) section of the Guide.

### Biochemistry and Medical Genetics M.Sc. Admission Requirements

Applicants must have an advanced (four year) degree with an appropriate background in biochemistry, genetics, or a closely related subject area; and, a minimum 3.5 GPA (based on a 4.5 scale), or equivalent, in the previous 60 credit hours of university study, or equivalent (normally 2 years). In addition, during this period there should be no grade less than C+ in any biochemistry, genetics, or life science course deemed relevant to the proposed course of study.

Admission will depend upon the availability of a Faculty Member to supervise the student and resources to support the student's research.

In rare cases, applicants with GPA's lower than 3.5 or with a grade below C+ in the previous 60 credit hours may be admitted to this department, based upon individual circumstances and the support of their prospective advisors. Students in this situation should consult with their prospective advisor and the Chair of the Graduate Student Admissions and Awards Committee.

## Application Information

Students should complete and submit their online application with supporting documentation by the date indicated on the Biochemistry and Medical Genetics M.Sc. program of study (<https://umanitoba.ca/explore/biochemistry-and-medical-genetics-msc/>) page.

## Degree Requirements

Students must complete a minimum of 9 credit hours of coursework in addition to BGEN 7000 Research Seminar for Master's Students.

A written thesis is required for the research-based Master's degree.

**Expected Time to Graduate:** 2-3 years

### Progression Chart

#### Master of Science (Biochemistry and Medical Genetics)

##### Research focus in Biochemistry and Medical Genetics

Course	Title	Hours
<b>Year 1</b>		
GRAD 7300	Research Integrity Tutorial	0
GRAD 7500	Academic Integrity Tutorial	0
BGEN 7000	Research Seminar M.Sc. <sup>1</sup>	1
IMED 7120	Medical Biochemistry <sup>2</sup>	3
IMED 7170	Medical Genetics <sup>2</sup>	3
Select additional course(s) to be chosen by the student and his/her advisor and/or advisory committee		3
<b>Hours</b>		<b>10</b>
<b>Year 2</b>		
GRAD 7000	Master's Thesis	0
BGEN 7000	Research Seminar M.Sc. <sup>1</sup>	1
<b>Hours</b>		<b>1</b>
<b>Total Hours</b>		<b>11</b>

<sup>1</sup> Students must enroll in BGEN 7000 every Fall and Winter term of program enrollment.

<sup>2</sup> If, after consultation with the student's advisory committee, the course coordinator, and the Graduate Student Affairs Committee, it is deemed that a student already holds a course equivalent to IMED 7120 or IMED 7170, then alternative coursework will be selected as agreed by the student's advisor or advisory committee.

#### Master of Science (Biochemistry and Medical Genetics)

##### Research focus in Computational Biology

Course	Title	Hours
<b>Year 1</b>		
GRAD 7300	Research Integrity Tutorial	0
GRAD 7500	Academic Integrity Tutorial	0
BGEN 7000	Research Seminar M.Sc. <sup>1</sup>	1
IMED 7120 or IMED 7170	Medical Biochemistry <sup>2</sup> or Medical Genetics	3
IMED 7280	Medical Computational Biology	3
Select additional course(s) to be chosen by the student and his/her advisor and/or advisory committee		3
<b>Hours</b>		<b>10</b>

**Year 2**

GRAD 7000	Master's Thesis	0
BGEN 7000	Research Seminar M.Sc. <sup>1</sup>	1
<b>Hours</b>		<b>1</b>
<b>Total Hours</b>		<b>11</b>

<sup>1</sup> Students must enroll in BGEN 7000 every Fall and Winter term of program enrollment.

<sup>2</sup> If, after consultation with the student's advisory committee, the course coordinator, and the Graduate Student Affairs Committee, it is deemed that a student already holds a course equivalent to IMED 7120 or IMED 7170, then alternative coursework will be selected as agreed by the student's advisor or advisory 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 new and returning graduate students in the department of Biochemistry and Medical Genetics are required to complete a Course Approval Form in consultation with their supervisor **prior** to registering for courses and making program changes. The Course Approval Form must be signed by the student, supervisor, graduate chair or the department head and submitted to the graduate program coordinator. Only courses that are included on the Course Approval Form will be credited to the student's program. All course additions and withdrawals (registration revision) must be approved in the same manner by completing or filling out the Registration Revision Form available on the website.

Consult the department office or browse the web for a list of course offerings.

It should be noted that not all courses are offered every year and some courses will be held only with a minimum enrolment. Please check the Aurora catalog to find out when a course is offered.

## 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).