

M.Sc. Applied - Bioresource Engineering - Integrated Food and Bioprocessing Program Information Sheet

Typical Program Sequence (45 credits)

Fall 13 or 16 credits*	Winter 14 or 17 credits*	Summer 12 or 15 credits*	Fall 2 Optional - Remaining Credits
BREE 651 (Seminar) (1) 4 or 5 courses from course list (15)	BREE 652 (Seminar) (1) 4 or 5 courses from course list (12)	BREE 601 (6) and BREE 602 (6) OR BREE 671 (6) and BREE 672 (6)	Any remaining courses/credits not completed in previous terms
	BREE 600 Project Proposal (1)	BREE 699 Scientific Publication (3)	

It is possible to complete this program in 12 months. If not, then remaining credits/courses can be completed in an optional second fall term. **International students are obliged to register for a minimum of 12 credits per term (full-time status) to fulfill their study permit obligations. The exception can be the last term of the program when they may be registered for fewer than 12 credits.*

Course Requirements

Project/Internship: Students will aim to do their Project or Internship in the Summer semester. Summer term registration opens in March.

BREE 651 & 652: Attendance to SEMINAR section is mandatory. The CONFERENCE sections are not sessions that need to be attended more than three times per year; they are there for students to use to be able to practice their seminar. Please ignore any timetable "conflicts" that may arise because of the Conference. You may register for other courses that take place during the same time as the Conferences.

Certain courses have a pre-requisite or require permission of the instructor in order to register. You can e-mail the instructor directly to request a permit to register for the course on Minerva, stating 1) the reason you would like to take the course, and 2) proof of any required pre-requisites. You also need to provide your name, McGill ID, and the name of the program you are in (M.Sc. Applied, Integrated Food and Bioprocessing) and the Faculty in some cases, if the course is in another faculty. If a course is full: you may also try contacting the instructor to see if there are any extra spaces possible, particularly if it is required for your program. Contact information for faculty and staff can generally be found here:

<https://www.mcgill.ca/directory/staff/>

Important to consider when choosing a course: It is strongly recommended you e-mail the course instructor to confirm that you have the appropriate background to succeed in a course. You should confirm the course requirements before registering for a course. **McGill Graduate Grading Policy:** The minimum passing grade for a graduate student is **B- or 65%**. **McGill Graduate Failure Policy (link below):** After a second course failure a student will be withdrawn from the university.

Failure Policy: https://www.mcgill.ca/study/university_regulations_and_resources/graduate/gps_gi_failure_policy

This list is subject to change as course offerings at McGill are updated each year. Note that many courses are given by departments on the downtown campus and some courses may have a lab component. Please note that the availability of courses varies every year: Some are only offered bi-yearly and others may not be offered for other reasons. You are encouraged to explore the McGill course catalogue. Note you may not take a course whose timetable overlaps with that of another. Timetables change each year so you may be able to take different courses, depending on the year.

To explore other course possibilities, you can search within Minerva's registration menu (advanced filters) in related Departments and verify permissions and pre-requisites. ALL COURSES MUST BE 500-level or higher. You may also search through **McGill's online course listings:**

<https://www.mcgill.ca/study/2022-2023/courses/search>

It is also possible (but requires approval) to take a course in another Quebec university:

<https://www.mcgill.ca/transfercredit/iut>

To take a course or to transfer credit from another Canadian university (Canadian University Graduate Transfer Agreement) (also requires approval), please Dr. L. Wittebol.

The approval of your Program Advisor is required for:

- 1) Elective courses not found in the lists below
- 2) Any proposed alternatives to complementary courses in the program

Required courses (6 credits)

BREE 651 (1) Departmental Seminar M.Sc. 1	BREE 600 (1) Project/Internship proposal
BREE 652 (1) Departmental Seminar M.Sc. 2	BREE 699 (3) Scientific Publication

Complementary Courses (39 credits)

**As some courses may not be offered in a particular year, some approved alternatives have been included.*

Statistics (min. 3 credits of graduate level statistics in any department):

AEMA 610 (3) Statistical Methods 2	CIVE 555 (3) Environmental Data Analysis
AEMA 611 (3) Experimental Designs 1*	GEOG 512 (3) Advanced quantitative methods in social field research
ENVB 506 (3) Quantitative Methods: Ecology	SOCI 504 (3) Quantitative Methods 1

* Offered bi-yearly

Group 1 - Bioresource Engineering (min. 9 credits from the following):	
BREE 518 (3) Ecological Engineering	BREE 531 (3) Post-Harvest Drying*
BREE 519 (3) Advanced Food Engineering*	BREE 532 (3) Post-Harvest Storage*
BREE 520 (3) Food, Fibre and Fuel Elements*	BREE 535 (3) Food Safety Engineering
BREE 530 (3) Fermentation Engineering	BREE 603 (3) Advanced Properties: Food & Plant Materials
<i>* Offered bi-yearly</i>	
Group 2 - Project/Internship (min. 12 credits from the following):	
BREE 671 (6) Project 1	OR: BREE 601 (6) Integrated Food and Bioprocessing Internship 1
BREE 672 (6) Project 2	BREE 602 (6) Integrated Food and Bioprocessing Internship 2
<i>Project or Internship is done in summer term. More information will be given in first term of program.</i>	
Group 3 - Policy/Economics (min. 3 credits from the following):	
AGEC 630 (3) Food and Agricultural Policy	<i>background required; contact instructor</i>
AGEC 633 (3) Environmental and Natural Resource Economics*	<i>background required; contact instructor</i>
AGEC 642 (3) Economics of Agricultural Development	<i>background required; contact instructor</i>
AGRI 510 (3) Professional Practice*	
GEOG 530 (3) Global Land and Water Resources.	<i>alternative</i>
LAWG 570 (3) Innovation for Non-Law Students	<i>alternative</i>
SEAD 540 Industrial Ecology and Systems (3 credits) (alternative)	https://www.mcgill.ca/tised/education/sead-courses/course-registration
<i>* Offered bi-yearly</i>	
Group 4 - Various (min. 3 credits from the following):	
BTEC 502 (3) Biotechnology Ethics and Society	
CHEE 688 (4) Advanced Materials in Chemical Engineering	<i>alternative</i>
FDSC 519 (3) Advanced Food Processing*	
FDSC 525 (3) Food Quality Assurance	<i>alternative</i>
FDSC 535 (3) Food Biotechnology*	
FDSC 626 (3) Food Safety Risk Assessment	<i>alternative</i>
FDSC 651 (3) Principles of Food Analysis 2	<i>alternative</i>
GEOG 515 (3) Contemporary Dilemmas of Development	
IGFS 611 (3) Advanced Issues on Development, Food and Agriculture	<i>alternative</i>
NUTR 501 (3) Nutrition in Developing Countries	
NUTR 512 (3) Herbs, Foods and Phytochemicals	<i>alternative</i>
NUTR 641 (3) Advanced Global Food Security	<i>alternative</i>
<i>* Offered bi-yearly</i>	
Electives - 9 credits of any relevant graduate-level course (can be any course from the above lists or from the following list):	
<i>Approval needed for any course not on these lists.</i>	
BREE 608 (3) Special Problems in Bioresource Engineering**	FDSC 545 (3) Advances in Food Microbiology
BREE 533 (3) Water Quality Management	FDSC 555 (3) Comparative Food Law
BUSA 664 (3) Creating the Small Business (Sect. 2)	FDSC 624 (3) Current Food Safety Issues
BUSA 665 (3) Managing the Small Enterprise (Sect. 2)	FDSC 634 (3) Food Toxins & Toxicants
CHEE 511 (3) Catalysis for Sustainable Fuels and Chemicals	OCCH 608 (3) Biological Hazards
ENVB 500 (3) Advanced Topics in Ecotoxicology	OCCH 612 (3) Principles of Toxicology
FDSC 520 (3) Biophysical Chemistry of Food*	PARA 515 (3) Water, Health and Sanitation
<i>* Offered bi-yearly</i>	
<i>** Independent Research project - Consult Prof. Ngadi</i>	
Example of a non-conflicting combination of Required, Complementary, and Elective courses from Fall 2022 and Winter 2023.	
<i>Other combinations possible.</i>	
IFB Fall 2022 - Sample Schedule - 13 credits	
BREE 651 (1) Seminar	<i>Seminar 1</i>
BREE 535 (3) Food Safety Engineering	<i>Group 1</i>
GEOG 515 (3) Contemporary Dilemmas of Development	<i>Group 4</i>
GEOG 512 (3) Advanced quantitative methods in social field research	<i>Statistics</i>
FDSC 626 (3) Food Safety Risk Assessment	<i>Elective</i>
IFB Winter 2023 - Sample Schedule - 17 credits	
BREE 600 (1) Project/Internship proposal	<i>Proposal (no classes)</i>
BREE 652 (1) Seminar	<i>Seminar 2</i>
AGRI 510 (3) Professional Practice	<i>Group 3</i>
BREE 519 (3) Advanced Food Engineering	<i>Group 1</i>
BREE 532 (3) Post-Harvest Storage	<i>Group 1</i>
IGFS 611 (3) Advanced Issues on Development, Food and Agriculture	<i>Elective</i>
Elective (3) - any course from approved lists above	<i>Elective</i>
<i>Group 2 (Projects/Internships) and BREE 699 (Scientific Publication) can be taken in summer term to complete your program in 12 months. Another option is to take one less lectured course in winter term and take only the project courses in the summer, and extend your program to a fourth term in the fall to take one lectured course and BREE 699.</i>	