

Global Food Security

B.Sc. (Ag. Env. Sc.)

Faculty of Agricultural and
Environmental Sciences

McGill University,
Macdonald Campus

PROGRAM HANDBOOK

For students entering the program in the
2014-2015 Academic Year



We are very proud of the Global Food Security Major. The courses you take as part of the program will let you develop skills and acquire tools that are needed to understand and address the many complex global development challenges. Due to the unique nature of the Macdonald Campus, you will have close contact with your professors, many of whom have ongoing international research and development projects. You will also have many opportunities to get hands on experiences whether in the lab on campus or in the field abroad.

This handbook will provide you with the ‘essentials’ as you move through your degree, and will hopefully save you a lot of time and frustration. Please read this handbook carefully and keep it for future reference, since most answers to your questions will likely be here, or found in the Resources section. The latter section will link you to many important websites and/or people. The FAQ section will also prove helpful to you as you move through your degree in International Agriculture and Food Systems. Since course offerings change, make sure you have all of the most current information by checking Minerva and meeting with your advisor regularly.

I wish you the best of luck as you embark on a successful academic career at McGill University.

A handwritten signature in cursive script that reads "Julie Major".

Julie Major, agr., Ph.D.
Academic Advisor – B.Sc. (Ag.Env.Sc.)

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PROGRAM OVERVIEW AND PROGRAM STRUCTURE

Here are some important points about your degree and its requirements, and **it is entirely your responsibility to fulfill these requirements:**

- You need to determine how many credits **you** need to complete all your degree requirements; this differs depending on your background, but most students coming from the Quebec education system require 90 credits. Regardless, this number will be on the letter of acceptance that was sent to you from McGill. Any advanced standing will be on your transcript at the beginning of the academic year.
- To get a McGill degree you need **at least 60 credits being awarded from McGill courses**
- A rule specific to our Faculty states that 2/3 of the credits required when you begin your B.Sc. (Ag. Env. Sc.) **must be taken on the Macdonald Campus**. This means 60 credits if you enter from a science DEC in CEGEP, or 2/3 of the credits remaining for your degree if you are given credit for other previous studies.
- **McGill has a 'C' minimum policy:** you must get higher than 'D' in your pre-requisite, required and complementary courses. If you get a 'D' grade in such a course, you will need to take the course again and obtain a higher grade in order to make the course count towards your degree requirements. In the case of a complementary course, if you get a 'D' grade you can either take the course again or chose another from the list. Courses with a grade of 'D' which are not re-taken count as electives.
- You require at least 12 credits **at or above the 400-level**. You can tell the level of a course by the first digit of the course number.
- If you **retake a course** in which you obtained an F initially, the F grade will continue to affect your GPA. If you retake a course in which you obtained a D or higher initially, the same as the above applies, BUT NOTE THAT YOU CAN RECEIVE CREDIT FOR THE COURSE ONLY ONCE. You must be especially mindful of this if you retake the course under a different code (e.g., get a D in FDSC 230 and get C or better in CHEM 212, these two being equivalent courses). Minerva will give credit for both courses until someone manually alters the student's record. Students have been prevented from graduating because they banked on receiving credit twice for a course they re-took.
- To get your degree in the Global Food Security Program you must take the requirements for your Major (**42 credits**) and the requirements for at least one Specialization (**24 credits**). If you take the number of credits you need for your degree, and subtract these 66 credits, the remaining credits are called '**electives**': these are any other courses at McGill University or elsewhere, which qualify and for which you obtain a grade of C or higher. Consult with your advisor BEFORE taking courses outside McGill, and also before taking Continuing Education courses at McGill.

Global Food Security: The Major in Global Food Security consists of 33 **required** credits (i.e., 11 courses since most courses at McGill are 3 credits each) plus 9 credits of **complementary** courses. If you are not sure about when to take what courses, as a general rule of thumb, courses beginning with '2' are typically taken in U1, those starting with '3' are typically for U2 students, and those starting with '4' or '5' are typically designed for your final year of study.

Specializations: These are sets of courses in one particular discipline that form a total of 24 credits, and allow you to become specialized in that topic. You do not need to declare your Specialization until the end of your first year (U1). Suggested Specializations for this Major include **Ecological Agriculture** and **International Agriculture**.

NOTE: When you graduate, your Major and Specialization(s) **MUST** have appeared on your University transcript for at least the last two consecutive semesters (a Québec Ministry of Education rule). **THEREFORE**, by the end of your penultimate year your **MUST** have declared and fixed upon your Major and Specialization(s). To select a Specialization, fill out the appropriate form found at <http://www.mcgill.ca/macdonald/studentinfo/undergrads/forms> or in Dr. Major's office. You will need Dr. Major's signature.

Most students take five courses per term, but some choose to take four for a variety of reasons including language difficulties or other complications associated with carrying a full course load. The overall program can be completed in three years if a full course load (i.e., 15 credits) is taken each term. You must take a minimum of 27 credits/year to be eligible for scholarships, and you are considered to be a full-time student when you take at least 12 credits during a semester.

Make a judicious choice of elective courses in consultation with your advisor.

Advisor, Program Director and Specialization Coordinators: during the course of your degree, your academic advisor, Dr. Julie Major, will help you with course selection and provide you with general guidance and advice. It is recommended that you meet with Dr. Major regularly throughout your time at McGill, to ensure that you are on the right track to achieving your goals in the timeframe that you expect. When special needs arise such as obtaining equivalencies for courses taken elsewhere, or transferring credits, you must meet with Dr. Major to update your records in a timely manner and avoid unpleasant surprises at your expected time of graduation. For mentoring and questions relating to course and program content, you should contact the program director for Global Food Security (Prof. Humberto Monardes) and/or your 'Specialization Coordinator' (see the Resources section).

GLOBAL FOOD SECURITY MAJOR (42 CREDITS)

*****NOTE*****Information about courses was accurate at the time this handbook was updated (i.e. for the 2014-15 academic year). Changes to course offerings may occur in later years. Consult with Dr. Major and/or Minerva for the most up-to-date information.

The tables below include some suggestions about when you should take courses which are required for the Major in Global Food Security, and Specializations (for students entering in Fall 2014). You are **strongly advised to follow these sequences of courses** to ensure you do not run into problems! If you do not follow suggestions of when to take required courses, you may run into serious scheduling issues. You may have additional requirements (e.g., missing Freshman courses) – you are urged to complete these as early as possible in your program – avoid leaving them to the end.

Required (33 credits, 11 courses)

Course code	Course name	Credits	Semester offered	Pre-requisites	Suggested timing
Required core courses (33 credits)					
AEBI 210	Organisms 1	3	Fall		U1 Fall
AEMA 310	Statistical Methods 1	3	Fall and Winter		U1 Winter
AGEC 200	Principles of Microeconomics	3	Fall		U1 Fall
AGEC 442	Economics of International Agricultural Development	3	Winter	AGEC 200 or AGECE 201 or equivalent	U2 Winter
AGRI 411	Global Issues on Development, Food and	3	Winter		U2 Winter

	Agriculture				
AGRI 493	International Project Management	3	Fall		U3 Fall
ANSC 250	Principles of Animal Science	3	Fall		U1 Fall
ENVB 210	The Biophysical Environment	3	Fall		U1 Fall
INTD 200	Introduction to International Development (taught downtown)	3	Fall		U2 Fall
NUTR 207	Nutrition and Health	3	Fall	LSCI 202 or FDSC 230	U2 Fall
NUTR 341	Global Food Security	3	Winter	NUTR 207 or permission of instructor	U2 Winter

Complementary Courses (9 credits):

Course code	Course name	Credits	Semester offered	Pre-requisites	
Choose 9 credits from:					
AGRI 215	Agro-Ecosystems Field Course	3	Fall		U1 Fall
AGRI 340	Principles of Ecological Agriculture	3	Winter		U1 Winter

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AGRI 499	Agricultural Development Internship	3	Summer, Fall and Winter	Permission of instructor	Summer after U2
ANSC 420	Animal Biotechnology	3	Fall	LSCI 202 and LSCI 230	U3 Fall
BREE 217	Hydrology and Water Resources	3	Winter		U1 Winter
FDSC 310	Post Harvest Fruit and Vegetable Technology	3	Fall		U2 Fall
NRSC 221	Environment and Health	3	Winter		
NUTR 501	Nutrition in Developing Countries	3	Fall	Consent of instructor required	
PLNT 300	Cropping Systems	3	Fall	AEBI 210	U2 Fall
PLNT 435	Plant Breeding	3	Winter	AEBI 210 and LSCI 204	
SOIL 315	Soil Nutrient Management	3	Fall	ENVB 210	U3 Fall
SOIL 326	Soils in a Changing Environment	3	Fall	A previous course in soil science, geography, geology or permission of instructor	

SPECIALIZATIONS:

There are many potential Specializations to take at the Macdonald Campus, and below are listed some details for a few of these, notably ones that fit well with the Major in International Agriculture and Food Systems; you are not restricted to these Specializations, but these tend to be the most popular, and the ones that are designed to work effectively with the program. You should refer to the McGill University official course calendar for all the specifics (see the Resources section for the link). The scheduling suggestions below only include required classes for each specialization, it is your responsibility to plan and build schedules to fulfill all program requirements in your desired time frame. Your advisor can help if you have questions or run into problems. It is a good idea to check your progress regularly with your advisor.

Ecological Agriculture (24 credits)

The Ecological Agriculture Specialization provides a holistic understanding of how agroecosystems work and the science of sustainable agriculture. It emphasizes the interrelationships among soils, plants, insects, animals, humans and other components of agroecosystems. Also, the Specialization applies ecological concepts and principles to the design and management of sustainable agroecosystems.

This Specialization is where agriculture and ecology/environment interact. Ecological agriculture addresses both the practical and theoretical issues that arise from this interaction including ecosystem dynamics, agroecology of food crops, and the role of agriculture in rural and urban landscapes. The Specialization strives to view agroecosystems as a whole in the context of today's global economy, social systems and environment. Through coursework and the possibility of internships students will be exposed to the environmental and social context of agriculture and be able to develop workable solutions to the challenge of sustainable food production.

If you have an interest in agriculture and the environment, the Ecological Agriculture Specialization could be right for you!

Course code	Course name	Credits	Semester offered	Pre-requisites	Suggested timing
REQUIRED (6 credits)					
AGRI 215	Agro-Ecosystems Field Course	3	Fall		U1 Fall
AGRI 340	Principles of Ecological Agriculture	3	Winter		U1 Winter
COMPLEMENTARY (18 credits)					
Choose 3 credits from:					
ENVR 203	Knowledge, Ethics and Environment	3	Fall - Macdonald Campus; Winter - Downtown		
RELG 270	Religious Ethics and the Environment	3	Fall - Macdonald Campus; Winter - Downtown		
Choose at least 9 agronomic credits from:					
AGEC 430	Agriculture, Food and Resource Policy	3	Winter	AGEC 200 or equivalent	U3 Winter
AGRI 310	Internship in Agriculture/Environment	3	Fall, Winter, Summer	Permission of instructor	
AGRI 435	Soil and Water Quality Management	3	Fall		
ENTO 352	Biocontrol of Insect Pests	3	Winter		
PLNT 302	Forage Crops and Pastures	3	Fall	PLNT 201 or AEBI 210 or AEBI 211 or WILD 200	

PLNT 312	Urban Horticulture	3	Odd-numbered Winters		
PLNT 434	Weed Biology and Control	3	Winter	AEBI 210	
SOIL 326	Soils in a Changing Environment	3	Odd-numbered Falls	A previous course in soil science, geography, geology or permission of instructor.	
Other complementary credits:					
AGRI 411	Global Issues on Development, Food and Agriculture	3	Winter		
MICR 331	Microbial Ecology	3	Winter		
NUTR 512	Herbs, Foods and Phytochemicals	3	Even-numbered Falls	LSCI 211 or BIOL 201 or BIOG 212	
PLNT 426	Plant Ecophysiology	3	Even-numbered Winters	LSCI 204 and PLNT 353 or permission of instructor	
PLNT 460	Plant Ecology	3	Fall	AEMA 310 or permission of instructor	

International Agriculture (24 credits)

Students enter this Specialization because they want to acquire a global understanding of agriculture as a central mechanism to help rural development, alleviate poverty and reach food security, especially in the developing world. This program provides students with coursework and a semester hands-on experience in a developing country (students must cover their costs), meeting locals and attending courses with McGill professors and/or local instructors. The field semester includes developing projects in local communities, observing subsistence agriculture in situ and participating in social activities which contribute to sensitize students to the development challenges that such countries face. What better way to study the practice of agriculture in a tropical setting than by going to a tropical destination? In Africa, or in Panama, or in Barbados! Students will learn about water resources, sustainable development, nutrition, planning and development, and a host of other fascinating topics, allowing them to sharpen their skills for career opportunities ahead. An option to complete this Specialization by taking courses on-campus is also offered.

Course code	Course name	Credits	Semester offered	Pre-requisites	Suggested timing
REQUIRED (6 credits)					
AGEC 442	Economics of International Agricultural Development	3	Winter	AGEC 200 or AGECEC 201 or equivalent	U2 Winter
AGRI 411	Global Issues on Development, Food and Agriculture	3	Winter		U2 Winter
COMPLEMENTARY (18 credits)					
Option A: choose 18 credits from					
AGEC 333	Resource Economics	3	Fall	AGEC 200 or equivalent	

AGEC 430	Agriculture, Food and Resource Policy	3	Winter	AGEC 200 or equivalent	U3 Winter
AGRI 215	Agro-Ecosystems Field Course	3	Fall		U1 Fall
AGRI 325	Sustainable Agriculture and Food Security in Cuba†	3	Summer	Competitive admission process	
AGRI 499	Agricultural Development Internship	3	Summer, Fall and Winter	Permission of instructor	
BREE 510	Watershed Systems Management	3	Fall	U3 and above	U3 Fall
ENVB 437	Assessing Environmental Impact	3	Winter	U2 and above	U2 Winter
FDSC 525	Food Quality Assurance	3	Winter	AEMA 310 or permission of instructor	U3 Winter
NUTR 501	Nutrition in Developing Countries	3	Fall	Consent of instructor required	
PARA 410	Environment and Infection	3	Winter	BIOL 111 or AEBI 120 or equivalent	U3 Winter
PARA 515	Water, Health and Sanitation	3	Winter		U3 Winter
PLNT 300	Cropping Systems	3	Fall		
Option B					
Choose one of the field semesters:					
African Field Study Semester†		15	Winter	Competitive admission process	U3 Winter
Barbados Field Study Semester†		15	Fall	Competitive	U3 Fall

			admission process	
Barbados Interdisciplinary Tropical Studies Field Semester†	15	Summer	Competitive admission process	Summer after U2
Panama Field Study Semester†	15	Winter	Competitive admission process	U3 Winter

†these programs involve extra costs; see <http://www.mcgill.ca/macdonald/programs/fieldstudies>

FREQUENTLY ASKED QUESTIONS:

- *What happens if a course appears in both a Specialization and in the Major?*
 - A Specialization **must have 18 unique credits**: therefore, 6 credits (typically two courses) can “overlap” and thus count towards both the Major and the Specialization. However, any course counts only once towards the total of credits required for graduation.
- *How do I declare a Specialization?*
 - You need to fill out the Specialization form found at <http://www.mcgill.ca/macdonald/studentinfo/undergrads/forms>, the **Student Affairs Office (SAO)** in Laird Hall or Dr. Major’s office. Have Dr. Major sign it prior to returning it to SAO.
- *Can I do a second (or third...) Specialization? Should I take more than one?*
 - You must complete at least one Specialization, and you may do more than one. However, it may be difficult to complete all the requirements for your Major and more than one Specialization within 3 years, so be prepared for difficulties in scheduling. One thing you could do is try to take as many of your elective courses as you can schedule in the second Specialization. It will not appear on your transcript if you don’t complete all of the requirements but you will have taken many of the courses towards it. Talk to your advisor about this if you have more questions.
- *I don’t like this Major – how do I switch?*
 - It is relatively easy to switch to other Majors within the same type of degree (B.Sc. Ag. Env. Sc.): visit the SAO or Dr. Major and ask for the Program Change Form; this requires a signature of the advisor for the Major you are switching into. Visit the SAO to ask about the process of switching to a different degree type and/or to a different Faculty.
- *I want to travel somewhere exotic, take courses there, and make them count towards my degree: how do I do this?*
 - You can do this many ways, but it’s important to realize that semesters away from campus involve extra costs. You can do ‘field semesters’, such as the Barbados Interdisciplinary Tropical Studies (BITS) Field Semester or the Panama Field Studies Semester. Go to the websites for these programs (see the Resources section) to look into requirements; some of the courses you take in these semesters may count towards your degree as complementary courses, but will most likely act as electives. If you take one more appropriate course (see your advisor), you can complete a Minor in

Field Studies. You can also apply for a study as part of an exchange program (see the Resources section).

- *Can I take more than 15 credits per term?*
 - If you are in satisfactory standing, you may take up to 18 credits per term. If you wish to do more than this, you need to consult with your academic advisor to learn how to get approval.

- *I want to take a course at a different University – can this count toward my degree?*
 - This is possible, but requires advanced planning – please talk to your advisor prior to proceeding with this. If you want the course to substitute for a required course, then the instructor of that course at McGill will have to sign a course equivalence form (available at <http://www.mcgill.ca/macdonald/studentinfo/undergrads/forms>), as will your academic advisor, and additional paperwork may be required before such a substitution is accepted. Don't forget that you require 60 credits of McGill courses to be granted your degree. The Faculty of Agricultural and Environmental Sciences' 2/3 rule for credit taken at Mac also applies.

- *I think I'm on track to graduate, but how do I know for sure?*
 - Meet with your advisor!

- *What's the Pass/Fail (P/F) and Satisfactory /Unsatisfactory (S/U) options on courses?*
 - Some courses at McGill are graded as pass/fail, but this does not apply to courses that are part of the Global Food Security Major. You may take a maximum of 1 course per term as an S/U option, but this designation only applies to ELECTIVES. **Do not** make the mistake of selecting this as an option for a required or complementary course.

- *Am I full time or part-time? Does it matter?*
 - You are considered full-time if you take at least 12 credits per term, and it does matter. You must be enrolled in at least 27 graded credits per academic year to be eligible for scholarships and most student loans and visas require a minimum of 12 credits/term.

- *How do I get research experience as part of my degree?*
 - You can do this through Research Project or Special Topics courses. The Global Food Security Honors Major is also an option for those who have a cGPA of at least 3.3 at the end of their U2. For all options you must have in place a supervisor for your project, so the first step is to develop a rapport with a potential supervisor and

together you can develop a research project that interests you both. This takes time and planning, but can be a very rewarding experience.

- *What's an internship? Can I do one?*
 - An internship is pre-professional work experience that provides an opportunity to supplement academic learning by gaining practical knowledge in your field of study. You can do one - please visit the Bieler Family Internship Office (<http://www.mcgill.ca/macdonald/programs/internships>)

RESOURCES

Advisor: Julie Major 514-398-8380 julie.major@mcgill.ca
MS2-082

Program Director: Humberto Monardes 514-398-7809 humberto.monardes@mcgill.ca

Specialization Coordinators:

Ecological Agriculture Caroline Begg 514-398-8749 caroline.begg@mcgill.ca
International Agriculture Humberto Monardes 514-398-7809 humberto.monardes@mcgill.ca

Student Affairs Office (Laird Hall):

For general questions, call 514-398-7925, or visit SAO in Laird Hall

Website: <http://www.mcgill.ca/macdonald/studentinfo/sao/>

McGill's course calendar:

<http://www.mcgill.ca/students/courses/calendars/>

Specializations:

Ecological Agriculture:

<http://www.mcgill.ca/macdonald/prospective/degrees/bscagenvsc/Specializations/ecolagr>

International Agriculture:

<http://www.mcgill.ca/macdonald/prospective/degrees/bscagenvsc/specializations/intlagr>

Bieler Family Internship Office: <http://www.mcgill.ca/macdonald/programs/internships>

Careers: Visit the Career and Placement Services Website at: www.mcgill.ca/caps or call 514-398-7582

Studying abroad:

For information about student exchanges and studying abroad, see
<http://www.mcgill.ca/students/international/exchange>

For information about McGill field study semesters (e.g., Africa, Barbados, Panama) and courses:
<http://www.mcgill.ca/macdonald/programs/fieldstudies>