UNIVERSITY OF TORONTO SCARBOROUGH

OFFICE OF THE CAMPUS COUNCIL

FOR APPROVAL **PUBLIC** **OPEN SESSION**

TO: UTSC Academic Affairs Committee

SPONSOR: Prof. William Gough, Vice-Principal Academic and Dean
CONTACT INFO: 416-208-7027, vpdean@utsc.utoronto.ca

PRESENTER: Prof. Mark Schmuckler, Vice-Dean Undergraduate
CONTACT INFO: 416-208-2978, vicedean@utsc.utoronto.ca

DATE: Tuesday, February 28, 2017

AGENDA ITEM: 3

ITEM IDENTIFICATION:

Major Modification- Specialist and Specialist Co-op programs in International Development Studies (BSc)

JURISDICTIONAL INFORMATION:

University of Toronto Scarborough Academic Affairs Committee (AAC) "is concerned with matters affecting the teaching, learning and research functions of the Campus" (*AAC Terms of Reference, Section 4*). Under section 5.6 of its terms of reference, the Committee is responsible for approval of "Major and minor modifications to existing degree programs." The AAC has responsibility for the approval of Major and Minor modifications to existing programs as defined by the University of Toronto Quality Assurance Process (*UTQAP, Section 3.1*).

GOVERNANCE PATH:

1. **UTSC Academic Affairs Committee [For Approval] (February 28, 2017)**

PREVIOUS ACTION TAKEN:

No previous action in governance has been taken on this item.

HIGHLIGHTS:

The Centre for Critical Development Studies (CCDS) at the University of Toronto Scarborough (UTSC) is proposing major modifications to its Specialist and Specialist (Co-operative) programs in International Development Studies (BSc).

The Specialist programs in IDS combine two distinct areas of study: international development studies and environmental science. In the 2010-11 academic year, enrolments in the programs were suspended in order to address issues arising from changes to the Major in Environmental Science (BSc), from which the science requirements of the programs had been drawn. Minor modifications to accommodate changes to the Major in Environmental Science were made to the Specialist programs, and they were re-opened to enrolments in the 2012-13 academic year.

Since the Specialist programs' re-introduction, the Centre has observed a troubling trend of high attrition rates among students, typically after the second year of study for students in the non Co-op Specialist, and the third year of study for students in the Co-op Specialist. A faculty led review of the programs to determine the underlying causes of this attrition, which included student participation and considered student feedback, was conducted in 2014. The review committee concluded that a lack of focus in the programs' environmental science component creates confusion for students regarding which science courses to select. This confusion, which is exacerbated by the structure of the programs' course requirements, seems to be deterring students from persisting in the programs through to graduation. The proposed major modifications seek to correct these problems by re-focusing the programs' science components specifically on environmental biology, and also reorganizing the course requirements to clarify how students should move through the programs.

The major modifications proposed here will ensure the Specialist and Specialist Co-op programs in IDS (BSc): (1) remain academically rigorous; (2) provide students with the opportunity to develop core competencies related to both international development studies and environmental biology; (3) incorporate dedicated courses on analytical techniques that integrate international development studies and environmental biology; (4) maintain flexibility for students to pursue their individual interests at upper levels; and (5) reorganize course offerings to streamline the curriculum.

Focusing on environmental biology ensures students are well equipped to address major initiatives at the intersection of development and environment. From a pedagogical perspective, the proposed changes will ensure that upon completion of the program, students will: (1) have a better appreciation of the multifaceted nature of ecological and biophysical processes; (2) understand how these processes emerge in the natural world; (3) understand how humans are shaping these processes; (4) understand how these changes have influenced (and are influencing) historical, socio-economic, and cultural aspects of international development; and (5) be able to discuss the issues surrounding contemporary sustainable development debates and initiatives.

In the revised programs, the introductory science courses have been moved to requirement 1 so as to clearly signal to students they should be completed as early as possible. In addition, the extensive bins of optional courses that existed in the program have been eliminated. These bins included a number of redundancies, and overall were confusing to students. Removing the redundancies, and any courses that do not explicitly feed into upper years courses, will make it easier for students to navigate through the programs.

The proposed changes result from a review of the Specialist programs conducted in 2014, which included student participation and incorporated student feedback. There has been extensive consultation among the faculty in the Centre for Critical Development Studies, and also with the Department of Physical and Environmental Sciences and the Department of Biological Sciences. There has also been consultation with the Departments of Human Geography and Political Science. A "green light" meeting was held with members of the Dean's Office on June 16, 2016. Finally, the proposal has been reviewed by the Dean's Office, the Decanal Undergraduate Curriculum Committee and the Provost's Office.

FINANCIAL IMPLICATIONS:

There are no net financial implications to the campus operating budget.

RECOMMENDATION:

Be It Resolved,

THAT the major modifications to the Specialist and Specialist (Co-operative) programs in International Development Studies (BSc), as described in the proposal dated January 31, 2017 and recommended by the Vice-Principal Academic and Dean, Professor William Gough, be approved effective April 1, 2017 for the academic year 2017-18.

DOCUMENTATION PROVIDED:

1. Major Modification to the Specialist/Specialist (Co-operative) programs in International Development Studies (BSc) dated January 31, 2017.

University of Toronto
Major Modification Proposal: Significant Modifications to Existing Graduate and Undergraduate Programs

Program being modified:	Specialist in International Development Studies (BSc) Specialist Co-op in International Development Studies (BSc)
Proposed Major Modification:	1. Refocus the programs on the intersection of international development studies and environmental biology 2. Update learning outcomes
Effective Date of Change:	April 1, 2017
Department / Unit where the program resides:	Centre for Critical Development Studies
Faculty / Academic Division:	University of Toronto Scarborough
Faculty / Academic Division contact:	Annette Knott, Academic Programs Officer aknott@utsc.utoronto.ca
Department / Unit contact:	Marishka Pereira, Program Advisor mpereira@utsc.utoronto.ca
Date of this version of the proposal:	January 31, 2017

1 Summary

The Centre for Critical Development Studies (CCDS) at the University of Toronto Scarborough (UTSC) is proposing major modifications to its Specialist and Specialist Co-op programs in International Development Studies (BSc).

The Specialist programs in IDS combine two distinct areas of study: international development studies and environmental science. In the 2010-11 academic year, enrolments in the programs were suspended in order to address issues arising from changes to the Major in Environmental Science (BSc), from which the science requirements of the programs had been drawn. Minor modifications to accommodate changes to the Major in Environmental Science were made to the Specialist programs, and they were re-opened to enrolments in the 2012-13 academic year.

Since the Specialist programs' re-introduction, the Centre has observed a troubling trend of high attrition rates among students, typically after the second year of study for students in the non Co-op Specialist, and the third year of study for students in the Co-op Specialist. A faculty led review of the programs to determine the underlying causes of this attrition, which included student participation and considered student feedback, was conducted in 2014. The review committee concluded that a lack of focus in the programs' environmental science component creates confusion for students regarding which science courses to select. This confusion, which is exacerbated by the structure of the programs' course requirements, seems to be deterring students from persisting in the programs through to graduation. The proposed major modifications seek to correct these problems by re-focusing the programs' science components specifically on environmental biology, and also reorganizing the course requirements to clarify how students should move through the programs.

The major modifications proposed here will ensure the Specialist and Specialist Co-op programs in IDS (BSc): (1) remain academically rigorous; (2) provide students with the opportunity to develop core competencies related to both international development studies and environmental biology; (3) incorporate dedicated courses on analytical techniques that integrate international development studies and environmental biology; (4) maintain flexibility for students to pursue their individual interests at upper levels; and (5) reorganize course offerings to streamline the curriculum.

2 Academic Rationale

The Centre for Critical Development Studies (CCDS) at the University of Toronto Scarborough (UTSC) is proposing major modifications to its Specialist and Specialist Co-op programs in International Development Studies (BSc).

The Specialist programs in IDS combine two distinct areas of study: international development studies and environmental science. In the 2010-11 academic year, enrolments in the programs were suspended in order to address issues arising from changes to the Major in Environmental Science (BSc), from which the science requirements of the programs had been drawn. Minor modifications to accommodate changes to the Major in Environmental Science were made to the

Specialist programs, and they were re-opened to enrolments in the 2012-13 academic year.

Since the Specialist programs' re-introduction, the Centre has observed a troubling trend of high attrition rates among students, typically after the second year of study for students in the non Co-op Specialist, and the third year of study for students in the Co-op Specialist. A faculty led review of the programs to determine the underlying causes of this attrition, which included student participation and considered student feedback, was conducted in 2014. The review committee concluded that a lack of focus in the programs' environmental science component creates confusion for students regarding which science courses to select. This confusion, which is exacerbated by the structure of the programs' course requirements, seems to be deterring students from persisting in the programs through to graduation. The proposed major modifications seek to correct these problems by re-focusing each program's science component specifically on environmental biology, and also reorganizing the course requirements to clarify how students should move through the programs.

Under the current program structures, students are required to complete: 2.0 credits in introductory IDS and related courses, including development studies (IDSA01H3), micro- and macroeconomics (MGEA01H3 or MGEA05H3), and environmental science (EESA01H3) (requirement 1); 3.0 credits in core international development courses (IDSB01H3, IDSB02H3, IDSB04H3, IDSB06H3, POLB90H3, and POLB91H3) (requirement 2); 1.5 credits in B- and C-level science courses (requirement 3); 3.0 credits in introductory science courses, including biology (BIOA01H3 and BIOA02H3), chemistry (CHMA10H3 and CHMA11H3), mathematics (MATA30H3), and physics (PHYA01H3 or PHYA11H3) (requirement 4); 4.0 credits in environmental science and related courses that cover a very broad range of topics, including geoscience, hydrology, climate science, environmental chemistry, and environmental biology (requirements 5 and 6); and a final capstone course(s) in international development studies (requirement 7). See Appendix A for a complete Calendar description of the existing programs.

2.1 Focusing the Science Component on Environmental Biology

As noted above, the environmental science component of the existing Specialist programs includes courses that cover a broad range of topics. As a consequence, the programs do not provide any clear direction to students regarding the specialized fields of study in the environmental sciences. The primary aim of the proposed major modifications is to clarify the programs' academic goals by focusing the science component squarely on Environmental Biology.

The decision to focus on environmental biology, rather than one of the other environmental science sub-disciplines, e.g., environmental chemistry or environmental physics, is based on pedagogical, policy-related, and logistical rationales.

From a pedagogical perspective, our curriculum changes will ensure that upon completion of the program, students will: (1) have a better appreciation of the multifaceted nature of ecological and biophysical processes; (2) understand how these processes emerge in the natural world; (3) understand how humans are shaping these processes; (4) understand how these changes have influenced (and are influencing) historical, socio-economic, and cultural aspects of international development; and (5) be able to discuss the issues surrounding contemporary sustainable

development debates and initiatives. Focusing the science component of these programs on Environmental Biology provides the fundamental and specialized knowledge base to achieve these goals.

Focusing on environmental biology ensures students are well equipped to address major initiatives at the intersection of development and environment. As the external review of the undergraduate programs in IDS conducted in 2013-14 revealed, careers at the intersection of international development and environmental biology, are largely guided by the Sustainable Development Goals (SDG) of the United Nations: 17 high-level global policy targets meant to guide sustainable development initiatives through 2030. Specifically, of the 17 SDGs, five are explicitly underpinned by environmental biology (SDG 2 – Zero Hunger; SDG 6 – Clean Water and Sanitation; SDG 13 – Climate Action; SDG 14 – Life Below Water; and SDG 15 – Life on Land). Similarly, key international policies governing issues in environment and development also require in-depth knowledge of environmental biology, including i) the *Convention on Biological Diversity* (1992); ii) the *United Nations Framework Convention on Climate Change* (1992); and iii) the *Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests* (a.k.a. *Forest Principles*; 1992). In focusing on environmental biology and development studies, students in the IDS BSc Specialist program will be trained explicitly to address the major issues that are the focal point of among the world's most influential international and national environment and development policy. Our prioritized focus on environmental biology as the specialized field in environmental science responds to demand by students for these interdisciplinary skills to achieve these career goals.

Focusing these Specialist programs on the intersection of environmental biology and international development, is also motivated by the institutional capacity in the Centre for Critical Development Studies (CCDS), which houses the programs. Currently, six of the 13 faculty members in CCDS focus their teaching and research at the intersection of international development and environmental biology. M. Isaac, R. Isaakson, and A. Martin maintain active teaching and research in the area of food security and agroecology, professors S. Mollett and T. Kepe focus on issues surrounding property rights and land tenure (with a focus on agricultural systems), and A. Birn focuses on international development and public health with an interest in communicable diseases. At their core, these areas of expertise all entail environmental biology, further indicating that environmental biology is the ideal sub-discipline to link environmental sciences and development studies, through the IDS BSc program.

2.2 Reorganizing the Course Requirements

As noted above, the Specialist programs are currently organized as follows:

- Requirement 1: 2.0 credits in introductory IDS and related courses, including development studies (IDSA01H3), micro- and macroeconomics (MGEA01H3 or MGEA05H3), and environmental science (EESA01H3);
- Requirement 2: 3.0 credits in core international development courses (IDSB01H3, IDSB02H3, IDSB04H3, IDSB06H3, POLB90H3, and POLB91H3);
- Requirement 3: 1.5 credits in B- and C-level science courses;
- Requirement 4: 3.0 credits in introductory science courses, including biology (BIOA01H3

and BIOA02H3), chemistry (CHMA10H3 and CHMA11H3), mathematics (MATA30H3), and physics (PHYA01H3 or PHYA11H3);
- Requirements 5 and 6: a total of 4.0 credits in environmental science and related courses that cover a very broad range of topics;
- Requirement 7: final capstone course(s) in international development studies.

Ideally, students would complete requirements 1 and 4, which consist of introductory courses, in their first year of studies; however, students commonly focus on completing IDS and other non-science credits in their first two years of study. When students finally reach a point in their program where they can no longer move forward without the required science credits (typically after the second year of study for students in the non Co-op Specialist, and the third year of study for students in the Co-op Specialist) many of them will choose to discontinue their enrolment because they it difficult to navigating the remaining selection of courses needed to meet the requirements in order to graduate on time, or for students in the Co-op Specialist, to go on placement.

In the revised programs, the introductory science courses have been moved to requirement 1 so as to clearly signal to students they should be completed as early as possible. In addition, the extensive bins of optional courses that existed in the program have been eliminated. These bins included a number of redundancies, and overall were confusing to students. Removing the redundancies, and any courses that do not explicitly feed into upper years courses, will make it easier for students to navigate through the programs.

See Appendix B, for a complete Calendar description of both programs, showing changes.

3 Description of the Proposed Major Modification(s)

The following changes are being made to both the Specialist and Specialist Co-op programs in IDS (BSc). The total number of credits required to complete the program has been reduced by 0.5 credit:
- The total number of credits to complete the Specialist changes from 14.0 to 13.5 credits; and
- The total number of credits to complete the Specialist Co-op changes from 16.0 to 15.5 credits.

Description of Changes
- The following courses have been added as requirements: BIOB51H3, EESA06H3
- The following courses have been changed from options to requirements: BIOB50H3, EESB03H3, EESB05H3, EESB16H3, and IDSC02H3
- The following courses have been added as options: BIOC37H3, BIOC58H3, BIOC61H3, BIOC62H3, BIOC63H3, BIOD54H3, and GGRC25H3
- The following required courses have been deleted: POLB90H3, POLB91H3, and MATA30H3
- The following optional courses have been deleted: ANTB19H3, ANTC35H3, CHMB55H3, EESB02H3, EESB04H3, EESB15H3, EESB17H3, EESC07H3, EESC20H3, (EESC21H3), EESD02H3, EESD11H3, EESD15H3, GGRB30H3, GGRC31H3, HLTB15H3, HLTC04H3,

MGEB11H3, PHYA10H3, PHYA11H3, POLC78H3, and PSCB57H3

Impact on Learning Outcomes

The proposed changes will refine the breadth and depth of knowledge, and given the revised range of core and fundamental courses, students will acquire a robust foundation on which to build their upper year specialized knowledge acquisition. The overarching impacts include: (1) students will be able to better appreciate the multifaceted nature of ecological and biophysical processes; (2) students will be able to understand how these processes emerge in the natural world; (3) students will be able to understand how humans are shaping these processes; (4) students will be able to understand how these changes have influenced (and are influencing) historical, socio-economic, and cultural aspects of international development; and (5) students will be able to discuss the issues surrounding contemporary sustainable development debates and initiatives.

A detailed description of the impact of these changes on the programs' learning outcomes is given in Appendix B.

4 Impact of the Change on Students

New Students

The proposed changes to the Specialist and Specialist Co-op programs in International Development Studies (BSc) programs have been made in collaboration with the Department of Physical and Environmental Sciences, and are designed respond directly to concerns raised by students that are currently in the program. In particular, the revised program:

1. Is rooted in the biological sciences, with a particular focus in environmental biology. Based on feedback received from students currently in the programs, this area of focus is of great interest to students.
2. Clearly signals to students that introductory IDS and science courses should be completed within the first year of study, so that they may continue on to their advanced C- and D-level courses by the third year of their program.
3. Is more streamlined relative to the previous curriculum. In the current programs, students are required to select from among 55 to 57 courses, depending on the Specialist program chosen (non Co-op or Co-op). In the proposed curriculum, students will select from 39 to 41 courses, depending on the Specialist program chosen (non Co-op or Co-op).

Continuing Students

There has been extensive consultation with students who are currently in the programs throughout the curriculum review process, and they are aware of the changes coming forward. As is the norm, all continuing students will be grandfathered and should they so choose, will be able to complete the requirements of the programs that were in place when students selected them as a Subject POSt. It is worth noting that these numbers are small: there are currently 5 students enrolled in the non Co-op Specialist, and 4 students in the Co-op Specialist. In terms of specific course requirements needed to complete the programs, should any exceptions or accommodations be necessary, where appropriate they will be granted.

5 Consultation

As noted above, the changes proposed here result from a review of the Specialist programs conducted in 2014. This review included student participation and incorporated student feedback. In addition, there has been extensive consultation among the faculty in the Centre for Critical Development Studies.

We have consulted with the Department of Physical and Environmental Sciences regarding the proposed changes to ensure the programs retain their academic rigour and science focus. The Chair, George Archontitsis, of the Department of Physical and Environmental Science has signed off on the proposed changes. We have also consulted with the Department of Biological Sciences regarding the BIO courses added to the program. Professor Shelley Brunt confirms the Department has reviewed the proposal and has no concerns regarding it.

Finally, we consulted with the Departments of Human Geography and Political Science regarding the addition or removal their courses in the program. Both Departmental Curriculum Committees, as well as the Department Chairs have signed off on the changes.

6 Resources

Academic units should bear in mind that any additional resources needed must have been secured before the proposal can be moved into governance. The Vice-Dean will shepherd approval of these resources.

The proposed changes will not require any new resources to support the programs. Current faculty complement, TA support, space, libraries, and enrolment/ admissions resources are sufficient and in place for all course offerings associated with this modification.

7 Governance Process

Levels of Approval Required	Date
Academic Unit Curriculum Committee	July 3, 2016 *Revisions approved November 16, 2016
Forwarded to PO for Review/Sign-Off	November 29, 2016 Sign off: December 9, 2016
Reviewed by DUCC (Undergraduate)	December 19, 2016
Decanal Sign-Off	Resources: June 16, 2016 Proposal: January 31, 2017
Approved by UTSC Academic Affairs Committee	
Submitted to Provost's Office	
AP&P – reported annually	
Ontario Quality Council – reported annually	

Appendix A: Current Calendar Copy

SPECIALIST PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (SCIENCE)

Program Requirements:
This program requires 14.0 credits of which at least 4.0 must be at the C-or D- level including at least 1.0 at the D-level.

1. **Introduction to International Development Studies** (2.0 credits)**:**
IDSA01H3 Introduction to International Development Studies
[MGEA01H3 Introduction to Microeconomics or MGEA02H3 Introduction to Microeconomics: A Mathematical Approach]
[MGEA05H3 Introduction to Macroeconomics or MGEA06H3 Introduction to Macroeconomics: A Mathematical Approach]
EESA01H3 Introduction to Environmental Science

2. **Core courses in International Development** (3.0 credits):
IDSB01H3 Political Economy of International Development
IDSB02H3 Development and Environment
IDSB04H3 Introduction to International/Global Health
IDSB06H3 Equity, Ethics and Justice in International Development
POLB90H3 Comparative Development in International Perspective
POLB91H3 Comparative Development in Political Perspective

3. **Methods for International Development Studies** (1.5 credits):
IDSC04H3 Project Management I
0.5 credit in Quantitative/statistical methods from the following:
- ANTC35H3 Quantitative Methods in Anthropology
- MGEB11H3 Quantitative Methods in Economics I
- GGRA30H3 Geographic Information Systems (GIS) and Empirical Reasoning
- GGRB30H3 Fundamentals of GIS I
- HLTB15H3 Introduction to Health Research Methodology
- STAB22H3 Statistics I

0.5 FCE in Qualitative Methods from the following:
- ANTB19H3 Ethnography and the Comparative Study of Human Societies
- GGRC31H3 Qualitative Geographical Methods: Place and Ethnography
- HLTC04H3 Critical Qualitative Health Research Methods
- POLC78H3 Political Analysis I

4. **Specialized Core Courses** (3.0 credits):
BIOA01H3 Life on Earth: Unifying Principles
BIOA02H3 Life on Earth: Form, Function and Interactions
CHMA10H3 Introductory Chemistry I: Structure and Bonding
CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

MATA30H3 Calculus I for Physical Sciences
[PHYA10H3 or PHYA11H3 Introduction to Physics IA or IB]

5. **1.0 credits from:**
BIOB50H3 Ecology
CHMB55H3 Environmental Chemistry
EESB02H3 Principles of Geomorphology
EESB03H3 Principles of Climatology
EESB04H3 Principles of Hydrology
EESB05H3 Principles of Soil Science
EESB15H3 Earth History
EESB16H3 Feeding Humans- The Cost to the Planet
EESB17H3 Hydro Politics and Transboundary Water Resource Management
GGRC22H3 Political Ecology Theory and Applications
GGRC26H3 Geographies of Environmental Governance
GGRC44H3 Environmental Conservation and Sustainable Development
IDSC02H3 Environmental Science and Evidence-Based Policy
PSCB57H3 Introduction to Scientific Computing

6. **3.0 credits from C- and D-level EES courses, with at least 0.5 credits at the D-level, from the following:**
EESC04H3 Biodiversity and Biogeography
EESC07H3 Groundwater
EESC13H3 Environmental Impact Assessment and Auditing
EESC20H3 Geochemistry
(EESC21H3) Urban Environmental Problems of the Greater Toronto Area
EESD02H3 Contaminant Hydrogeology
EESD06H3 Climate Change Impact Assessment
EESD11H3 Process Hydrology
EESD15H3 Fundamentals of Site Remediation

7. **Research in International Development Requirement** (0.5 credit):
IDSD02H3 Advanced Seminar in Critical Development Studies: Theory and Policy

SPECIALIST (CO-OPERATIVE) PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (SCIENCE)

Co-op Contact: askcoop@utsc.utoronto.ca

The Co-operative Program in International Development Studies (B.Sc.) at the University of Toronto Scarborough, is a five year undergraduate Program which aims to provide students with a critical understanding of international development issues through exposure to a variety of academic disciplines and to another culture. The Program combines interdisciplinary academic study in the social and environmental sciences and humanities with a practical work experience

in a developing country. IDS students graduate with an Honours B.Sc. with a Specialist certification in International Development Studies.

Program Admission
Enrolment in the Program is limited. Interviews are normally held from January until May for students who pass the initial screening. Admissions are granted on the basis of the applicants' academic performance, background in relevant subjects, language skills, extra-curricular involvement, experience or interest in international development studies and work. For information on fees and status in the Program, please see section 6B.5 (Co-operative Programs) in this *Calendar*.

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to U of T Scarborough from another U of T faculty or from another post-secondary institution, see section 6B.5 (Co-operative Programs) in this *Calendar*.

Current U of T Scarborough students: Application procedures can be found at the Registrar's Office website at: www.utsc.utoronto.ca/subjectpost. The minimum qualifications for entry are 4.0 credits and a cumulative GPA of at least 2.5. An interview is required.

Work Placement
This Program requires twenty courses (four years) of study and one work term of eight to twelve months in duration. The work term will normally begin between May and September of the third year. The IDS work term is an integral part of the co-op curriculum and is designed to provide students with practical hands on experience in a developing country. The majority of work terms are with Canadian NGOs, research institutes or private sector consulting firms. The location of placements will vary according to each student's disciplinary and regional preferences and abilities, the availability of positions, and the practicability and safety of the area. Placement employers are asked to cover the living allowance of the student. Those students who choose to carry out their placement with no funding will be asked to finance the living allowance themselves.

Students are required to submit progress reports every 2 months and begin work on a major research project. To be eligible for placement, students must have completed 14.5 full credits including 12.0 IDS credits. These 12 must include IDSC01H3, IDSC04H3 plus 9.5 other credits from Requirements 1 through 6. For information about status in the co-op program, fees, and regulations, please see section 6B.5 (Co-operative Programs) in this *Calendar*.

Students who successfully complete all requirements associated with a work term are awarded credit, these credits being additional to the 20.0 normally required for the degree. Work terms are evaluated by program faculty, the co-op office, and the employer, and a grade of CR (credit)/NCR (no credit) is recorded on the transcript.

IDS Co-op Tutorial and Pre-Departure Orientation
In addition to the academic course requirements for the IDS Co-op program, students are required to complete two additional non-credit courses. These courses are taken in the first and third year of the program with the aim of providing students with the skills and knowledge they

need to successfully navigate the placement experience. For students who gain entry in second year, they will complete the first year course in their second year. Both of these courses are non-credit courses taken over-and-above a full course load in the first year.

First Year:
During the first year of study, students must successfully complete a non-credit IDS Co-op Placement Course (also referred to as Passport to Placement). This course will include resume, covering letters, and interview workshops, along with networking sessions, speaker panels, and work-term expectations. This course must be completed prior to the Third Year course.

Third Year:
Following the successful completion of the Year 1 course, students are required to participate in a second non-credit Co-op course commencing at the end of the year in which they complete 10.0 credits, and continuing through the following year - usually third year (the pre-placement year). This course will include presentations, group exercises and individual assignments designed to prepare students for the placement experience. There are mandatory sessions on cross-cultural understanding, health and safety issues on placement, researching for the IDSD01Y3 thesis, and other key topics. A weekend retreat with the fifth years (who have returned from placement) provides the opportunity for sharing of first-hand experience. Students must successfully complete this course in order to be eligible for placement.

Program Requirements:
This program requires 16.0 credits of which at least 4.0 must be at the C-or D- level including at least 1.0 at the D-level.

1. **Introduction to International Development Studies** (2.0 credits)
   IDSA01H3 Introduction to International Development Studies
   [MGEA01H3 Introduction to Microeconomics or MGEA02H3 Introduction to Microeconomics: A Mathematical Approach]
   [MGEA05H3 Introduction to Macroeconomics or MGEA06H3 Introduction to Macroeconomics: A Mathematical Approach]
   EESA01H3 Introduction to Environmental Science

2. **Core courses in International Development** (3.0 credits)
   IDSB01H3 Political Economy of International Development
   IDSB02H3 Development and Environment
   IDSB04H3 Introduction to International/Global Health
   IDSB06H3 Equity, Ethics and Justice in International Development
   POLB90H3 Comparative Development in International Perspective
   POLB91H3 Comparative Development in Political Perspective

3. **Methods for International Development Studies** (1.5 credits)
   IDSC04H3 Project Management I
   0.5 credit in Quantitative/statistical methods from the following:
      ANTC35H3 Quantitative Methods in Anthropology
      MGEB11H3 Quantitative Methods in Economics I

GGRA30H3 Geographic Information Systems (GIS) and Empirical Reasoning
GGRB30H3 Fundamentals of GIS I
HLTB15H3 Introduction to Health Research Methodology
STAB22H3 Statistics I

0.5 FCE in Qualitative Methods from the following:
ANTB19H3 Ethnography and the Comparative Study of Human Societies
GGRC31H3 Qualitative Geographical Methods: Place and Ethnography
HLTC04H3 Critical Qualitative Health Research Methods
POLC78H3 Political Analysis I

4. **Specialized Courses:** Core (3.0 credits)
BIOA01H3 Life on Earth: Unifying Principles
BIOA02H3 Life on Earth: Form, Function and Interactions
CHMA10H3 Introductory Chemistry I: Structure and Bonding
CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
MATA30H3 Calculus I for Physical Sciences
[PHYA10H3 or PHYA11H3 Introduction to Physics IA or IB]

5. **1.0 credit from:**
BIOB50H3 Ecology
CHMB55H3 Environmental Chemistry
EESB02H3 Principles of Geomorphology
EESB03H3 Principles of Climatology
EESB04H3 Principles of Hydrology
EESB05H3 Principles of Soil Science
EESB15H3 Earth History
EESB16H3 Feeding Humans- The Cost to the Planet
EESB17H3 Hydro Politics and Transboundary Water Resource Management
GGRC22H3 Political Ecology Theory and Applications
GGRC26H3 Geographies of Environmental Governance
GGRC44H3 Environmental Conservation and Sustainable Development
IDSC02H3 Environmental Science and Evidence-Based Policy
PSCB57H3 Introduction to Scientific Computing

6. **3.0 credits from C- and D-level EES courses, with at least 0.5 credits at the D-level, from the following:**
EESC04H3 Biodiversity and Biogeography
EESC07H3 Groundwater
EESC13H3 Environmental Impact Assessment and Auditing
EESC20H3 Geochemistry
(EESC21H3) Urban Environmental Problems of the Greater Toronto Area
EESD02H3 Contaminant Hydrogeology
EESD06H3 Climate Change Impact Assessment
EESD11H3 Process Hydrology
EESD15H3 Fundamentals of Site Remediation

7. **Co-operative, Language and Thesis Requirements (2.5 credits)**:

1.0 full credits in a second language

IDSC01H3 Research Design for Development Fieldwork* (*must be taken prior to co-op placement)

IDSD01Y3 Post-placement Seminar and Thesis

Appendix B: Calendar Copy [showing changes]

SPECIALIST PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (SCIENCE)

Program Requirements:
This program requires ~~14.0~~ 13.5 credits of which at least 4.0 must be at the C-or D- level including at least 1.0 at the D-level.

1. **Introduction to Sciences and International Development Studies** (~~2.0~~ 4.5 credits)**:**
IDSA01H3 Introduction to International Development Studies
BIOA01H3 Life on Earth: Unifying Principles *(moved)*
BIOA02H3 Life on Earth: Form, Function and Interactions *(moved)*
CHMA10H3 Introductory Chemistry I: Structure and Bonding *(moved)*
CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms *(moved)*
EESA01H3 Introduction to Environmental Science
EESA06H3 Introduction to Planet Earth
[MGEA01H3 Introduction to Microeconomics or MGEA02H3 Introduction to Microeconomics: A Mathematical Approach]
[MGEA05H3 Introduction to Macroeconomics or MGEA06H3 Introduction to Macroeconomics: A Mathematical Approach]

2. **Core courses in International Development** (~~3.0~~ 2.0 credits):
IDSB01H3 Political Economy of International Development
IDSB02H3 Development and Environment
IDSB04H3 Introduction to International/Global Health
IDSB06H3 Equity, Ethics and Justice in International Development
~~POLB90H3 Comparative Development in International Perspective~~
~~POLB91H3 Comparative Development in Political Perspective~~

3. **Core Courses in Environmental Biology** (2.5 credits)
BIOB50H3 Ecology *(moved; changed from option to required)*
BIOB51H3 Evolutionary Biology
EESB03H3 Principles of Climatology *(moved; changed from option to required)*
EESB05H3 Principles of Soil Science *(moved; changed from option to required)*
EESB16H3 Feeding Humans The Cost to the Planet *(moved; changed from option to required)*

~~3~~4. **Methods for International Development Studies** (1.5 credits):
IDSC02H3 Environmental Science and Evidence-Based Policy (*moved; changed from option to required*)
IDSC04H3 Project Management I
0.5 credit from: ~~in Quantitative/statistical methods from the following:~~
~~- ANTC35H3 Quantitative Methods in Anthropology~~
~~- MGEB11H3 Quantitative Methods in Economics I~~

GGRA30H3 Geographic Information Systems (GIS) and Empirical Reasoning
~~GGRB30H3 Fundamentals of GIS I~~
~~HLTB15H3 Introduction to Health Research Methodology~~
~~STAB22H3 Statistics I~~
STAB22H3 Statistics I or equivalent
~~0.5 FCE in Qualitative Methods from the following:~~
~~ANTB19H3 Ethnography and the Comparative Study of Human Societies~~
~~GGRC31H3 Qualitative Geographical Methods: Place and Ethnography~~
~~HLTC04H3 Critical Qualitative Health Research Methods~~
~~POLC78H3 Political Analysis I~~

~~4. **Specialized Core Courses** (3.0 credits):~~
~~BIOA01H3 Life on Earth: Unifying Principles~~ *(moved)*
~~BIOA02H3 Life on Earth: Form, Function and Interactions~~ *(moved)*
~~CHMA10H3 Introductory Chemistry I: Structure and Bonding~~ *(moved)*
~~CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms~~ *(moved)*
~~MATA30H3 Calculus I for Physical Sciences~~
~~[PHYA10H3 or PHYA11H3 Introduction to Physics IA or IB]~~

5. Advanced courses in Environmental Biology (2.0 credits of which 0.5 must be at the D-level). Choose from:
BIOC37H3 Plants: Life on the Edge
BIOC58H3 Biological Consequences of Global Change
BIOC61H3 Community Ecology and Environmental Biology
BIOC62H3 Role of Zoos In Conservation
BIOC63H3 Conservation Biology
EESC04H3 Biodiversity and Biogeography *(moved)*
BIOD54H3 Applied Conservation Biology
EESD06H3 Climate Change Impact Assessment *(moved)*

~~5~~6. ~~1.0 credits from:~~ **Environmental Science in Practice** (0.5 credit). Choose from:
EESC13H3 Environmental Impact Assessment and Auditing *(moved)*
(GGRC22H3) Political Ecology Theory and Applications
GGRC25H3 Land Reform and Development
GGRC26H3 Geographies of Environmental Governance
GGRC44H3 Environmental Conservation and Sustainable Development
~~BIOB50H3 Ecology~~ *(moved)*
~~CHMB55H3 Environmental Chemistry~~
~~EESB02H3 Principles of Geomorphology~~
~~EESB03H3 Principles of Climatology~~ *(moved)*
~~EESB04H3 Principles of Hydrology~~
~~EESB05H3 Principles of Soil Science~~ *(moved)*
~~EESB15H3 Earth History~~
~~EESB16H3 Feeding Humans- The Cost to the Planet~~ *(moved)*
~~EESB17H3 Hydro Politics and Transboundary Water Resource Management~~

~~IDSC02H3 Environmental Science and Evidence-Based Policy~~ (*moved*)
~~PSCB57H3 Introduction to Scientific Computing~~

~~6. 3.0 credits from C- and D-level EES courses, with at least 0.5 credits at the D-level, from the following:~~
~~EESC04H3 Biodiversity and Biogeography~~ *(moved)*
~~EESC07H3 Groundwater~~
~~EESC13H3 Environmental Impact Assessment and Auditing~~ *(moved)*
~~EESC20H3 Geochemistry~~
~~(EESC21H3) Urban Environmental Problems of the Greater Toronto Area~~
~~EESD02H3 Contaminant Hydrogeology~~
~~EESD06H3 Climate Change Impact Assessment~~ *(moved)*
~~EESD11H3 Process Hydrology~~
~~EESD15H3 Fundamentals of Site Remediation~~

7. **Research in International Development Requirement** (0.5 credit):
IDSD02H3 Advanced Seminar in Critical Development Studies: Theory and Policy

SPECIALIST (CO-OPERATIVE) PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (SCIENCE)

Co-op Contact: askcoop@utsc.utoronto.ca

The Co-operative Program in International Development Studies (B.Sc.) at the University of Toronto Scarborough, is a five year undergraduate Program which aims to provide students with a critical understanding of international development issues through exposure to a variety of academic disciplines and to another culture. The Program combines interdisciplinary academic study in the social and environmental sciences and humanities with a practical work experience in a developing country. IDS students graduate with an Honours B.Sc. with a Specialist certification in International Development Studies.

Program Admission
Enrolment in the Program is limited. Interviews are normally held from January until May for students who pass the initial screening. Admissions are granted on the basis of the applicants' academic performance, background in relevant subjects, language skills, extra-curricular involvement, experience or interest in international development studies and work. For information on fees and status in the Program, please see section 6B.5 (Co-operative Programs) in this *Calendar*.

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to U of T Scarborough from another U of T faculty or from another post-secondary institution, see section 6B.5 (Co-operative Programs) in this *Calendar*.

Current U of T Scarborough students: Application procedures can be found at the Registrar's Office website at: www.utsc.utoronto.ca/subjectpost. The minimum qualifications for entry are

4.0 credits and a cumulative GPA of at least 2.5. An interview is required.

Work Placement
This Program requires twenty courses (four years) of study and one work term of eight to twelve months in duration. The work term will normally begin between May and September of the third year. The IDS work term is an integral part of the co-op curriculum and is designed to provide students with practical hands on experience in a developing country. The majority of work terms are with Canadian NGOs, research institutes or private sector consulting firms. The location of placements will vary according to each student's disciplinary and regional preferences and abilities, the availability of positions, and the practicability and safety of the area. Placement employers are asked to cover the living allowance of the student. Those students who choose to carry out their placement with no funding will be asked to finance the living allowance themselves.

Students are required to submit progress reports every 2 months and begin work on a major research project. To be eligible for placement, students must have completed 14.5 full credits including 10.5 credits from the IDS program from Requirements 1 through 4 and IDSC01H3. ~~To be eligible for placement, students must have completed 14.5 full credits including 10.5 credits from the IDS program from Requirements 1 through 4 and IDSC01H.~~ For information about status in the co-op program, fees, and regulations, please see section 6B.5 (Co-operative Programs) in this *Calendar*.

Students who successfully complete all requirements associated with a work term are awarded credit, these credits being additional to the 20.0 normally required for the degree. Work terms are evaluated by program faculty, the co-op office, and the employer, and a grade of CR (credit)/NCR (no credit) is recorded on the transcript.

IDS Co-op Tutorial and Pre-Departure Orientation
In addition to the academic course requirements for the IDS Co-op program, students are required to complete two additional non-credit courses. These courses are taken in the first and third year of the program with the aim of providing students with the skills and knowledge they need to successfully navigate the placement experience. For students who gain entry in second year, they will complete the first year course in their second year. Both of these courses are non-credit courses taken over-and-above a full course load in the first year.

First Year:
During the first year of study, students must successfully complete a non-credit IDS Co-op Placement Course (also referred to as Passport to Placement). This course will include resume, covering letters, and interview workshops, along with networking sessions, speaker panels, and work-term expectations. This course must be completed prior to the Third Year course.

Third Year:
Following the successful completion of the Year 1 course, students are required to participate in a second non-credit Co-op course commencing at the end of the year in which they complete 10.0 credits, and continuing through the following year - usually third year (the pre-placement year). This course will include presentations, group exercises and individual assignments

designed to prepare students for the placement experience. There are mandatory sessions on cross-cultural understanding, health and safety issues on placement, researching for the IDSD01Y3 thesis, and other key topics. A weekend retreat with the fifth years (who have returned from placement) provides the opportunity for sharing of first-hand experience. Students must successfully complete this course in order to be eligible for placement.

Program Requirements:
This program requires ~~16.0~~ 15.5 credits of which at least 4.0 must be at the C-or D- level including at least 1.0 at the D-level.

1. **Introduction to Sciences and International Development Studies** (~~2.0~~ 4.5 credits)**:**
IDSA01H3 Introduction to International Development Studies
BIOA01H3 Life on Earth: Unifying Principles *(moved)*
BIOA02H3 Life on Earth: Form, Function and Interactions *(moved)*
CHMA10H3 Introductory Chemistry I: Structure and Bonding *(moved)*
CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms *(moved)*
EESA01H3 Introduction to Environmental Science
EESA06H3 Introduction to Planet Earth
[MGEA01H3 Introduction to Microeconomics or MGEA02H3 Introduction to Microeconomics: A Mathematical Approach]
[MGEA05H3 Introduction to Macroeconomics or MGEA06H3 Introduction to Macroeconomics: A Mathematical Approach]

2. **Core courses in International Development** (~~3.0~~ 2.0 credits):
IDSB01H3 Political Economy of International Development
IDSB02H3 Development and Environment
IDSB04H3 Introduction to International/Global Health
IDSB06H3 Equity, Ethics and Justice in International Development
~~POLB90H3 Comparative Development in International Perspective~~
~~POLB91H3 Comparative Development in Political Perspective~~

3. **Core Courses in Environmental Biology** (2.5 credits)
BIOB50H3 Ecology *(moved; changed from optional to required)*
BIOB51H3 Evolutionary Biology
EESB03H3 Principles of Climatology *(moved; changed from optional to required)*
EESB05H3 Principles of Soil Science *(moved; changed from optional to required)*
EESB16H3 Feeding Humans The Cost to the Planet *(moved; changed from optional to required)*

~~3~~4. **Methods for International Development Studies** (1.5 credits):
IDSC02H3 Environmental Science and Evidence-Based Policy (*moved; changed from option to required*)
IDSC04H3 Project Management I
0.5 credit from: ~~in Quantitative/statistical methods from the following:~~
~~- ANTC35H3 Quantitative Methods in Anthropology~~
~~- MGEB11H3 Quantitative Methods in Economics I~~

GGRA30H3 Geographic Information Systems (GIS) and Empirical Reasoning
~~GGRB30H3 Fundamentals of GIS I~~
~~HLTB15H3 Introduction to Health Research Methodology~~
STAB22H3 Statistics I or equivalent
~~0.5 FCE in Qualitative Methods from the following:~~
~~ANTB19H3 Ethnography and the Comparative Study of Human Societies~~
~~GGRC31H3 Qualitative Geographical Methods: Place and Ethnography~~
~~HLTC04H3 Critical Qualitative Health Research Methods~~
~~POLC78H3 Political Analysis I~~

~~4. **Specialized Core Courses** (3.0 credits):~~
~~BIOA01H3 Life on Earth: Unifying Principles~~ *(moved)*
~~BIOA02H3 Life on Earth: Form, Function and Interactions~~ *(moved)*
~~CHMA10H3 Introductory Chemistry I: Structure and Bonding~~ *(moved)*
~~CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms~~ *(moved)*
~~MATA30H3 Calculus I for Physical Sciences~~
~~[PHYA10H3 or PHYA11H3 Introduction to Physics IA or IB]~~

5. Advanced courses in Environmental Biology (2.0 credits of which 0.5 must be at the D-level). Choose from:
BIOC37H3 Plants: Life on the Edge
BIOC58H3 Biological Consequences of Global Change
BIOC61H3 Community Ecology and Environmental Biology
BIOC62H3 Role of Zoos In Conservation
BIOC63H3 Conservation Biology
EESC04H3 Biodiversity and Biogeography *(moved)*
BIOD54H3 Applied Conservation Biology
EESD06H3 Climate Change Impact Assessment *(moved)*

~~5~~6. ~~1.0 credits from:~~ **Environmental Science in Practice** (0.5 credit). Choose from:
EESC13H3 Environmental Impact Assessment and Auditing *(moved)*
(GGRC22H3) Political Ecology Theory and Applications
GGRC25H3 Land Reform and Development
GGRC26H3 Geographies of Environmental Governance
GGRC44H3 Environmental Conservation and Sustainable Development
~~BIOB50H3 Ecology~~ *(moved)*
~~CHMB55H3 Environmental Chemistry~~
~~EESB02H3 Principles of Geomorphology~~
~~EESB03H3 Principles of Climatology~~ *(moved)*
~~EESB04H3 Principles of Hydrology~~
~~EESB05H3 Principles of Soil Science~~ *(moved)*
~~EESB15H3 Earth History~~
~~EESB16H3 Feeding Humans- The Cost to the Planet~~ *(moved)*
~~EESB17H3 Hydro Politics and Transboundary Water Resource Management~~
~~IDSC02H3 Environmental Science and Evidence-Based Policy~~ (*moved*)
~~PSCB57H3 Introduction to Scientific Computing~~

~~6. 3.0 credits from C- and D-level EES courses, with at least 0.5 credits at the D-level, from the following:~~
~~EESC04H3 Biodiversity and Biogeography~~ *(moved)*
~~EESC07H3 Groundwater~~
~~EESC13H3 Environmental Impact Assessment and Auditing~~ *(moved)*
~~EESC20H3 Geochemistry~~
~~(EESC21H3) Urban Environmental Problems of the Greater Toronto Area~~
~~EESD02H3 Contaminant Hydrogeology~~
~~EESD06H3 Climate Change Impact Assessment~~ *(moved)*
~~EESD11H3 Process Hydrology~~
~~EESD15H3 Fundamentals of Site Remediation~~

7. **Co-operative, Language and Thesis Requirements (**2.5 credits**)**:
1.0 ~~full~~ credit~~s~~ in a second language
IDSC01H3 Research Design for Development Fieldwork* (*must be taken prior to co-op placement)
IDSD01Y3 Post-placement Seminar and Thesis

Appendix C: New Learning Outcomes, and Degree Level Expectations [Undergraduate Programs]

Specialist in International Studies (BSc)

Degree Level Expectations	**Clearly describe the new Program Learning Outcomes.** • Program Learning Outcomes describe what students will know or be able to do at the completion of the program. • Program Learning Outcomes should support the Degree Level Expectations.	**Clearly describe how the revised program design/structure will support the program learning outcomes.**
1. Depth and Breadth of Knowledge Depth of Knowledge: is attained through a progression of introductory, core and specialized courses. Specialized courses will normally be at the C and D levels. Breadth of Knowledge: students will gain an appreciation of the variety of modes of thinking, methods of inquiry and analysis, and ways of understanding the world that underpin different intellectual fields.	Depth and breadth of knowledge is understood in the Specialist in International Development Studies (BSc) as multidisciplinary core competencies in development studies, economics, biology, chemistry, and environmental science. This is coupled with specialized courses on international development, environmental biology, and research. Students who complete this program will be able to understand the theory underpinning contemporary international development, economics, and environmental biology, and will be able to apply their knowledge of these principles to applied, real-world scenarios. In comparison to previous learning outcomes that highlighted the environmental sciences more generally, the new Depth and Breadth of Knowledge	The program design and requirement elements that ensure these student outcomes for depth and breadth of knowledge are: i) 4.5 credits at the A level focusing on core competencies in international development studies (IDSA01H3), biology (BIOA01H3; BIOA02H3), chemistry (CHMA10H3; CHMA11H3), economics MGEA01H3 or MGEA02H3; MGEA05H3 or MGEA06H3), and environmental science (EESA01H3; EESA06H3); ii) 2.0 credits at the B level focused on international development studies IDSB01H3; IDSB02H3; IDSB04H3; IDSB06H3); iii) 2.5 credits at the B level focused on environmental biology (BIOB50H3; BIOB51H3; EESB03H3; EESB05H3; EESB16H3); iv) 1.5 credits (primarily) at the C level focusing on quantitative analysis in international development and environmental science (IDSC02H3; IDSC04H3; GRA30H3 or STAB23H3); v) 2.0 credits at the C and D levels focusing on advanced topics in environmental biology (BIOC37H3; BIOC58H3; BIOC61H3; BIOC62H3; BIOC63H3; EESC04H3; BIOD54H3; EESD06H3); and vi) 0.5 credit at the C level focusing on knowledge application (EESC34H3 or GGRC22H3 or GGRC25H3 or GGRC26H3 or GGRC44H3); vii) 0.5 credit at the D level focused on research in international development (IDSD02H3).

	learning outcomes focus on required fundamental and applied information in Environmental Biology.	
2. Knowledge of Methodologies Students have a working knowledge of different methodologies and approaches relevant to their area of study. They are able to evaluate the efficacy of different methodologies in addressing questions that arise in their area of study.	Students who complete the Specialist in International Development Studies (BSc) will develop skills in quantitative and qualitative analysis, as well as problem solving skills associated with applied topics in international development and environmental biology. The Knowledge of Methodologies learning outcomes are similar to the previous learning outcomes as core quantitative skills such as data analysis are germane to Environmental Biology. The qualitative skill set remains the same.	Quantitative analytical skills are explicitly addressed by 1.5 credit in methods, which include courses focused on data analysis (IDSC02H3, STAB22H3, GGRA30H3), as well as core courses in economics (MGEA01H3, MGEA02H3, MGEA05H3, MGEA06H3). These skills are also addressed through courses in biological and environmental sciences that entail quantitative data analyses (BIOB50H3, BIOB51H3, EESB03H3, EESB05H3, BIOC58H3, BIOC61H3, BIOC63H3, EESC04H3, EESC13H3). Qualitative analytical skills are explicitly addressed through 1.5 credits in methods, which include 0.5 credit in project management (IDSC04H3), as well as 0.5 credit focused on research component (IDSD02H3). Qualitative methods are also addressed through core course in international development studies (IDSB01H3, IDSB04H3, IDSB06H3, GGRC22H3, GGRC26H3). Application of knowledge is addressed through 0.5 credit in practical applications (EESC13H3, GGRC22H3, GGRC25H3, GGRC26H3, GGRC44H3), as well as 0.5 credit associated with research skills (IDSD02H3).
3. Application of Knowledge Students are able to frame relevant questions for further inquiry. They are familiar with, or will be able to seek the tools with which, they can address such questions effectively.	Students who complete the Specialist in International Development Studies (BSc) will be able to apply their knowledge to multidisciplinary questions at the intersection of international development studies and environmental biology, including for example, food security, climate change, and biodiversity conservation. These questions are associated with global environmental priorities, as	Program requirements in both qualitative and quantitative reasoning (IDSC02H3, STAB23H3, GGRA30H3), core course requirements on international development studies (IDSB01H3; IDSB02H3; IDSB04H3; IDSB06H3) and environmental biology (BIOB50H3; BIOB51H3; EESB03H3; EESB05H3; EESB16H3), applied courses associated with project management and research, ensures students will be highly skilled in framing questions at the intersection of international development and environmental biology. The breadth of courses in the program will ensure students are capable of framing highly relevant, and contemporary questions in this area, from

	reflected (for instance) by the 2015 Sustainable Development Goals of the United Nations. The Application of Knowledge learning outcomes differ from previous outcomes in that knowledge application moves from a focus on environmental sciences generally to a sub-set of this area, namely a focus on food security, climate change and biodiversity conservation, applications related to Environmental Biology.	global to local scales of integration.
4. Awareness of Limits of Knowledge Students gain an understanding of the limits of their own knowledge and an appreciation of the uncertainty, ambiguity, and limits to our collective knowledge and how these might influence analyses and interpretations.	Students who complete the Specialist in International Development Studies (BSc) will be highly aware of the limits of their own knowledge, through a better understanding of how issues in development and environment are quantified and analyzed. Specifically, following completion of the program students will understand how environmental processes and phenomena are quantified, and the limits to theoretical or technological limits quantifying environmental phenomena precisely. Students will also understand how socio-economic aspects of development are quantified through methods commonly employed in the social sciences. There are no changes in the Awareness of Limits of Knowledge learning outcomes.	Students learn critical analysis skills in core international development courses (IDSA01H3, IDSB01H3, IDSB02H3, IDSB04H3, IDSB06H3), as well as in international development methods courses (IDSC02H3, IDSC04H3, IDSD02H3). Further, in learning about multiple methods for analysis and decision-making (IDSC02H3, STAB22H3, GGRA30H3), students are highly aware of limitations of different methodologies, as well as uncertainty and ambiguity associated with both quantitative and qualitative data.
5. Communication Skills Students are able to	Students who complete the Specialist in International Development Studies	A strong multidisciplinary foundation and advanced courses in the social and natural sciences (IDSA01H3; BIOA01H3;

communicate information, arguments, and analyses accurately and reliably, both orally and in writing. They learn to read and to listen critically.	(Science) will be able to communicate quantitative and qualitative information, both in writing and orally. Students will also develop exceptional critical thinking, reading, writing, and listening skills. There are no changes in Communication Skills learning outcomes.	BIOA02H3; CHMA10H3; CHMA11H3; MGEA01H3 or MGEA02H3; MGEA05H3 or MGEA06H3; EESA01H3; EESA06H3; IDSB01H3; IDSB02H3; IDSB04H3; IDSB06H3; BIOB50H3; BIOB51H3; EESB03H3; EESB05H3; EESB16H3; IDSC02H3; IDSC04H3; GRA30H3 or STAB22H3; BIOC37H3; BIOC58H3; BIOC61H3; BIOC62H3; BIOC63H3; EESC04H3; BIOD54H3; EESD06H3; EESC34H3 or GGRC22H3 or GGRC25H3 or GGRC26H3 or GGRC44H3) will ensure students have extensive opportunity to develop, rationalize, and communicate logical arguments. Courses dedicated to project management (IDSC04H3) applied analysis (IDSC02H3, EESC13H3), and research (IDSD02H3), coupled with multiple courses in the social sciences that focus on written communication and critical reading (IDSB01H3, IDSB04H3, IDSB06H3, GGRC22H3, GGRC26H3) will ensure students are able to clearly and accurately communicate information.
6. Autonomy and Professional Capacity The education students receive achieves the following broad goals: • It gives students the skills and knowledge they need to become informed, independent and creative thinkers • It instils the awareness that knowledge and its applications are influenced by, and contribute to, society • It lays the foundation for learning as a life-long endeavour	Students who complete the Specialist in International Development Studies (BSc) will be ideally suited for careers in the fields of international development and environmental biology. Students will attain enhanced autonomy through a number of courses in the program that specifically target critical thought. Students completing the program will possess enhanced a professional capacity, based on a comprehensive set of analytical skills owing to both quantitative and qualitative methods courses in the program. There are no changes in Autonomy and Professional Capacity learning outcomes.	This program will lead to highly creative and independent thinkers, through a combination of multidisciplinary courses (EESB16H3; IDSC02H3; EESC34H3), and exposure to multiple methodological approaches (IDSC02H3; IDSC04H3; GRA30H3 or STAB22H3). Independent thought, and creativity, is also addressed through these aspects of the program, and further addressed through courses that demand students apply their knowledge to actual questions or situations (EESC34H3 or GGRC22H3 or GGRC25H3 or GGRC26H3 or GGRC44H3). The Centre for Critical Development Studies' commitment to critical thought will also ensure that students in this program are committed to life-long learning, and will have a strong understanding of how knowledge continuously changes across space and time.

Specialist Co-op in International Studies (BSc)

Degree Level Expectations	**Clearly describe the new Program Learning Outcomes.** • Program Learning Outcomes describe what students will know or be able to do at the completion of the program. • Program Learning Outcomes should support the Degree Level Expectations.	**Clearly describe how the revised program design/structure will support the program learning outcomes.**
1. Depth and Breadth of Knowledge Depth of Knowledge: is attained through a progression of introductory, core and specialized courses. Specialized courses will normally be at the C and D levels. Breadth of Knowledge: students will gain an appreciation of the variety of modes of thinking, methods of inquiry and analysis, and ways of understanding the world that underpin different intellectual fields.	Depth and breadth of knowledge is understood in the Specialist in International Development Studies (BSc) as multidisciplinary core competencies in development studies, economics, biology, chemistry, and environmental science. This is coupled with specialized courses on international development, environmental biology, and research. Students who complete this program will be able to understand the theory underpinning contemporary international development, economics, and environmental biology, and will be able to apply their knowledge of these principles to applied, real-world scenarios. In comparison to previous learning outcomes that highlighted the environmental sciences more generally, the new Depth and Breadth of Knowledge learning outcomes focus on required fundamental and applied information in Environmental Biology.	The program design and requirement elements that ensure these student outcomes for depth and breadth of knowledge are: i) 4.5 credits at the A level focusing on core competencies in international development studies (IDSA01H3), biology (BIOA01H3; BIOA02H3), chemistry (CHMA10H3; CHMA11H3), economics MGEA01H3 or MGEA02H3; MGEA05H3 or MGEA06H3), and environmental science (EESA01H3; EESA06H3); ii) 2.0 credits at the B level focused on international development studies IDSB01H3; IDSB02H3; IDSB04H3; IDSB06H3); iii) 2.5 credits at the B level focused on environmental biology (BIOB50H3; BIOB51H3; EESB03H3; EESB05H3; EESB16H3); iv) 1.5 credits (primarily) at the C level focusing on quantitative analysis in international development and environmental science (IDSC02H3; IDSC04H3; GRA30H3 or STAB23H3); v) 2.0 credits at the C and D levels focusing on advanced topics in environmental biology (BIOC37H3; BIOC58H3; BIOC61H3; BIOC62H3; BIOC63H3; EESC04H3; BIOD54H3; EESD06H3); and vi) 0.5 credit at the C level focusing on knowledge application (EESC34H3 or GGRC22H3 or GGRC25H3 or GGRC26H3 or GGRC44H3); vii) 0.5 credit at the D level focused on research in international development (IDSD02H3).

2. Knowledge of Methodologies Students have a working knowledge of different methodologies and approaches relevant to their area of study. They are able to evaluate the efficacy of different methodologies in addressing questions that arise in their area of study.	Students who complete the Specialist in International Development Studies (BSc) will develop skills in quantitative and qualitative analysis, as well as problem solving skills associated with applied topics in international development and environmental biology. The Knowledge of Methodologies learning outcomes are similar to the previous learning outcomes as core quantitative skills are germane to core quantitative skills in Environmental Biology. The qualitative skill set remains the same.	Quantitative analytical skills are explicitly addressed by 1.5 credit in methods, which include courses focused on data analysis (IDSC02H3, STAB22H3, GGRA30H3), as well as core courses in economics (MGEA01H3, MGEA02H3, MGEA05H3, MGEA06H3). These skills are also addressed through courses in biological and environmental sciences that entail quantitative data analyses (BIOB50H3, BIOB51H3, EESB03H3, EESB05H3, BIOC58H3, BIOC61H3, BIOC63H3, EESC04H3, EESC13H3). Qualitative analytical skills are explicitly addressed through 1.5 credits in methods, which include 0.5 credit in project management (IDSC04H3), as well as 0.5 credit focused on research component (IDSD02H3). Qualitative methods are also addressed through core course in international development studies (IDSB01H3, IDSB04H3, IDSB06H3, GGRC22H3, GGRC26H3). Application of knowledge is addressed through 0.5 credit in practical applications (EESC13H3, GGRC22H3, GGRC25H3, GGRC26H3, GGRC44H3), as well as 0.5 credit associated with research skills (IDSD02H3).
3. Application of Knowledge Students are able to frame relevant questions for further inquiry. They are familiar with, or will be able to seek the tools with which, they can address such questions effectively.	Students who complete the Specialist in International Development Studies (BSc) will be able to apply their knowledge to multidisciplinary questions at the intersection of international development studies and environmental biology, including for example, food security, climate change, and biodiversity conservation. These questions are associated with global environmental priorities, as reflected (for instance) by the 2015 Sustainable Development Goals of the United Nations.	Program requirements in both qualitative and quantitative reasoning (IDSC02H3, STAB23H3, GGRA30H3), core course requirements on international development studies (IDSB01H3; IDSB02H3; IDSB04H3; IDSB06H3) and environmental biology (BIOB50H3; BIOB51H3; EESB03H3; EESB05H3; EESB16H3), applied courses associated with project management and research, ensures students will be highly skilled in framing questions at the intersection of international development and environmental biology. The breadth of courses in the program will ensure students are capable of framing highly relevant, and contemporary questions in this area, from global to local scales of integration.

	The Application of Knowledge learning outcomes differ from previous outcomes in that knowledge application moves from a focus on environmental sciences generally to a sub-se of this area, namely a focus on food security, climate change and biodiversity conservation, applications related to Environmental Biology.	
4. Awareness of Limits of Knowledge Students gain an understanding of the limits of their own knowledge and an appreciation of the uncertainty, ambiguity, and limits to our collective knowledge and how these might influence analyses and interpretations.	Students who complete the Specialist in International Development Studies (BSc) will be highly aware of the limits of their own knowledge, through a better understanding of how issues in development and environment are quantified and analyzed. Specifically, following completion of the program students will understand how environmental processes and phenomena are quantified, and the limits to theoretical or technological limits quantifying environmental phenomena precisely. Students will also understand how socio-economic aspects of development are quantified through methods commonly employed in the social sciences. Students will understand. There are no changes in the Awareness of Limits of Knowledge learning outcomes.	Students learn critical analysis skills in core international development courses (IDSA01H3, IDSB01H3, IDSB02H3, IDSB04H3, IDSB06H3), as well as in international development methods courses (IDSC02H3, IDSC04H3, IDSD02H3). Further, in learning about multiple methods for analysis and decision-making (IDSC02H3, STAB22H3, GGRA30H3), students are highly aware of limitations of different methodologies, as well as uncertainty and ambiguity associated with both quantitative and qualitative data.
5. Communication Skills Students are able to communicate information, arguments, and analyses accurately	Students who complete the Specialist in International Development Studies (Science) will be able to communicate quantitative and qualitative information,	A strong multidisciplinary foundation and advanced courses in the social and natural sciences (IDSA01H3; BIOA01H3; BIOA02H3; CHMA10H3; CHMA11H3; MGEA01H3 or MGEA02H3; MGEA05H3 or MGEA06H3; EESA01H3; EESA06H3;

and reliably, both orally and in writing. They learn to read and to listen critically.	both in writing and orally. Students will also develop exceptional critical thinking, reading, writing, and listening skills. There are no changes in Communication Skills learning outcomes.	IDSB01H3; IDSB02H3; IDSB04H3; IDSB06H3; BIOB50H3; BIOB51H3; EESB03H3; EESB05H3; EESB16H3; IDSC02H3; IDSC04H3; GRA30H3 or STAB22H3; BIOC37H3; BIOC58H3; BIOC61H3; BIOC62H3; BIOC63H3; EESC04H3; BIOD54H3; EESD06H3; EESC34H3 or GGRC22H3 or GGRC25H3 or GGRC26H3 or GGRC44H3) will ensure students have extensive opportunity to develop, rationalize, and communicate logical arguments. Courses dedicated to project management (IDSC04H3) applied analysis (IDSC02H3, EESC13H3), and research (IDSD02H3), coupled with multiple courses in the social sciences that focus on written communication and critical reading (IDSB01H3, IDSB04H3, IDSB06H3, GGRC22H3, GGRC26H3) will ensure students are able to clearly and accurately communicate information.
6. Autonomy and Professional Capacity The education students receive achieves the following broad goals: • It gives students the skills and knowledge they need to become informed, independent and creative thinkers • It instils the awareness that knowledge and its applications are influenced by, and contribute to, society • It lays the foundation for learning as a life-long endeavour	Students who complete the Specialist in International Development Studies (BSc) will be ideally suited for careers in the fields of international development and environmental biology. Students will attain enhanced autonomy through a number of courses in the program that specifically target critical thought. Students completing the program will possess enhanced a professional capacity, based on a comprehensive set of analytical skills owing to both quantitative and qualitative methods courses in the program. There are no changes in Autonomy and Professional Capacity learning outcomes.	This program will lead to highly creative and independent thinkers, through a combination of multidisciplinary courses (EESB16H3; IDSC02H3; EESC34H3), and exposure to multiple methodological approaches (IDSC02H3; IDSC04H3; GRA30H3 or STAB22H3). Independent thought, and creativity, is also addressed through these aspects of the program, and further addressed through courses that demand students apply their knowledge to actual questions or situations (EESC34H3 or GGRC22H3 or GGRC25H3 or GGRC26H3 or GGRC44H3). The Centre for Critical Development Studies' commitment to critical thought will also ensure that students in this program are committed to life-long learning, and will have a strong understanding of how knowledge continuously changes across space and time.