



University of Toronto Scarborough Campus Council

ACADEMIC AFFAIRS COMMITTEE

Wednesday, January 8, 2014

4:00 p.m.

UTSC Council Chamber, Arts and Administration Building, Room AA 160

1265 Military Trail

1. Chair's Remarks

2. Assessor Reports

3. Undergraduate Program Revisions *(for approval)*

a) Minor modifications to curriculum submitted by the Department of Biological Sciences

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Biological Sciences, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

b) Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Computer and Mathematical Sciences, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

c) Minor modification to curriculum submitted by the Department of English

Be It Resolved,

UTSC Academic Affairs Committee – Wednesday, January 8, 2013

THAT all minor modifications to the curriculum in the Department of English, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

d) Minor modifications to curriculum submitted by the Centre for French and Linguistics

Be It Resolved,

THAT all minor modifications to curriculum in the Centre for French and Linguistics, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014 for, the academic year 2014-15.

e) Minor modification to curriculum submitted by the Department of Management

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Management, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

CONSENT AGENDA**

4. Undergraduate Program Revisions

a) Minor modification to curriculum submitted by the Department of Philosophy

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Philosophy, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

b) Minor modification to curriculum submitted by the Department of Psychology

UTSC Academic Affairs Committee – Wednesday, January 8, 2013

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Psychology, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

- 5. Report of the Previous Meeting: Report 2 – November 12, 2013****(for approval)*
 - 6. Business Arising from the Report of the Previous Meeting**
 - 7. Date of the Next Meeting** – Tuesday, February 11, 2014, 4:00 p.m. - 6:00 p.m.
-

- 8. Other Business**



FOR APPROVAL PUBLIC OPEN SESSION

TO: University of Toronto Scarborough Academic Affairs Committee

SPONSOR: Dean and Vice-Principal (Academic), Rick Halpern

CONTACT INFO: vpdean@utsc.utoronto.ca

PRESENTER: Vice-Dean, Undergraduate, Mark Schmuckler

CONTACT INFO: vicedean@utsc.utoronto.ca

DATE: Wednesday, January 8, 2014

AGENDA ITEM: 3a

ITEM IDENTIFICATION:

Minor modifications to curriculum submitted by the Department of Biological Sciences.

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] (Wednesday, January 8, 2014)**

PREVIOUS ACTION TAKEN:

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

HIGHLIGHTS:

This package includes all minor modifications to curriculum requiring governance approval submitted by the Department of Biological Sciences for the 2014-15 academic year. Minor modifications include new courses, changes to program requirements, and changes in course level. The Department of Biological Sciences is making 9 minor program modifications as follows:

Minor modifications to curriculum submitted by the Department of Biological Sciences.

- Admission requirements for all programs
- Specialist in Biodiversity, Ecology & Evolution (B.Sc.); Major in Biodiversity, Ecology & Evolution (B.Sc.)
- Major in Biology (B.Sc.)
- Specialist in Cell & Molecular Biology (B.Sc.); Specialist Co-op in Cell & Molecular Biology (B.Sc.)
- Specialist in Human Biology (B.Sc.)
- Specialist in Integrative Biology (B.Sc.)
- Specialist (Joint) in Paramedicine (B.Sc.)

In addition, they are adding 3 new courses at various levels, and changing the level of 3 existing courses.

FINANCIAL IMPLICATIONS:

There are no net implications for the campus' operating budget.

RECOMMENDATION:

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Biological Sciences, as described below and recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, be approved to be effective April 1, 2014, for the academic year 2014-15.

DOCUMENTATION PROVIDED:

Minor modifications to curriculum submitted by the Department of Biological Sciences.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

**Department of Biological Sciences
Minor Modification to Curriculum
December 13, 2013**

1. Program Change

Programs: ALL PROGRAMS

Overview of Changes:

- Clarification of the existing admission requirements for all Biological Sciences programs to show they apply only to Specialist and Major programs.
- Reduce the CGPA requirement to be admitted to all Major programs from 2.0 to 1.85.

Calendar Copy Showing Changes:

Admission to Biological Sciences Programs

Students apply to ~~one or more~~ Biological Sciences **Specialist and/or Major** programs after completion of a minimum of 4.0 full credits, including 1.0 credit in Biology, 1.0 credit in Chemistry, and 0.5 credit in Mathematics (excluding MATA02H3) or Statistics and with a cumulative grade point average (CGPA) ~~of at least 2.0.~~

- **Admission to Specialist Programs requires a cumulative grade point average (CGPA) of at least 2.0.**
- **Admission to Major Programs requires a cumulative grade point average (CGPA) of at least 1.85.**

Application for admission is made to the Registrar through ROSI, in April/May and July/August. See the UTSC Registrar's website for information on program (Subject POST) selection at: www.utoronto.ca/subjectpost.

Note: There are no admission requirements to the Minor Program in Biology.

Rationale:

Lowering the CGPA requirement allows students with slightly lower grades who still wish to enter Biology Programs, and have previously been excluded, to be admitted. This change also creates differentiation between Specialist and Major programs in terms of academic performance required for Program entry. This change is expected to increase the number of students admitted to Major Programs, which is considered desirable by the Department.

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

2. Program Change

Program: SPECIALIST IN BIODIVERSITY, ECOLOGY & EVOLUTION (B.Sc.)
MAJOR IN BIODIVERSITY, ECOLOGY & EVOLUTION (B.Sc.)

Overview of Changes:

- Change program name from Biodiversity, Ecology & Evolution to CONSERVATION & BIODIVERSITY; i.e.,
 - Specialist in Conservation & Biodiversity (B.Sc.)
 - Major in Conservation & Biodiversity (B.Sc.)
- Move BIOB38H3 (formerly BIOC38H3) from program options to program requirements.
- Move BIOC40H3 (formerly BIOB31H3) from program options to program requirements.
- Add BIOC60H3 (new) and BIOD54H3 (new) as options.

Calendar Copy Showing Changes:

**SPECIALIST PROGRAM IN ~~BIODIVERSITY, ECOLOGY AND EVOLUTION~~
CONSERVATION & BIODIVERSITY (SCIENCE)**

Supervisor: I. Stehlik *Email:* biodiversity@utsc.utoronto.ca

This program presents a foundation for understanding how ecology and evolution shape organismal features (from morphology and physiology to behaviour) and the structure and function of communities and ecosystems. Ultimately these processes determine the broad patterns of organization of life on earth and biodiversity. The challenges to biodiversity are daunting. Habitat destruction, biological invasions and climate change are causing loss of species and disruption of ecosystems worldwide. ~~BEES~~ **Program** graduates are trained to understand and actively seek solutions to these problems. This program will show how ecological and evolutionary perspectives can be used to understand and predict the outcome of dynamic interactions among organisms, populations, species, and communities. Students will be well trained to take positions in government agencies, consulting firms or NGO's; able to continue with graduate studies in science for academic careers; or able to pursue careers in business or law related to environmental issues, stewardship and sustainable development.

Program Requirements

This program consists of 14.5 required credits. In selecting options and electives, students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements). It is advised that, including electives, students should plan to take 5 credits in each year of their four year degree.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

A. Required Courses

First Year

1.0 Credit of Introductory Biology Courses

BIOA01H3 Life on Earth: Unifying Principles

BIOA02H3 Life on Earth: Form, Function and Interactions

1.0 Credit of Introductory Chemistry Courses

CHMA10H3 Introductory Chemistry I: Structure and Bonding

CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

1.0 Credit in Mathematics

MATA30H3 & MATA35H3 Calculus I for Biological and Physical Sciences & Calculus II for Biological Sciences

0.5 Credit in Physics

Choose from:

PHYA10H3 Introduction to Physics IA

PHYA11H3 Introduction to Physics IB

0.5 Credit in Computer Science

Choose from:

CSCA08H3 Introduction to Computer Programming

CSCA20H3 Computer Science for the Sciences

PSCB57H3 Introduction to Scientific Computing (this course could also be taken in second year)

Second Year

3.0 Credits of Biology Core Courses

BIOB10H3 Cell Biology

BIOB11H3 Molecular Aspects of Cellular and Genetic Processes

(BIOB30H3) Mammalian Physiology I or BIOB34H3 Animal Physiology

~~BIOB31H3 Plant Physiology~~ **BIOB38H3 Plants and Society**

BIOB50H3 Ecology

BIOB51H3 Evolutionary Biology

0.5 Credit of Biology Core Labs

BIOB52H3 Ecology and Evolutionary Biology Laboratory

0.5 Credit in Statistics

Choose from:

STAB22H3 Statistics I

PSYB07H3 Data Analysis in Psychology

Third Year

2.0 Credits of C-level Ecology and Evolution Foundation Courses

BIOC16H3 Evolutionary Genetics and Genomics

Minor modifications to curriculum submitted by the Department of Biological Sciences.

BIOC50H3 Macroevolution
BIOC59H3 Advanced Population Ecology
BIOC61H3 Community Ecology and Environmental Biology

Third/Fourth Year

4.5 credits of C- & D-level courses from Bins 1 and 2 below. This must include at least one credit from each bin and at least one credit total at the D-level.

Bin 1: C- & D-level Ecology and Evolution Courses

Choose from:

BIOC51H3 Tropical Biodiversity Field Course
BIOC52H3 Ecology Field Course
BIOC58H3 Biological Consequences of Global Change
BIOC60H3 Winter Ecology
BIOC63H3 Conservation Biology
BIOC65H3 Environmental Toxicology
BIOC67H3 Inter-University Biology Field Course
BIOD25H3 Genomics
BIOD52H3 Special Topics in Biodiversity and Systematics
BIOD54H3 Applied Conservation Biology
BIOD60H3 Spatial Ecology
BIOD62H3 Species and Speciation
BIOD66H3 Causes and Consequences of Biodiversity
EESC04H3 Biodiversity and Biogeography

Bin 2: C- & D-level Organismal Biology Courses

Choose from:

BIOC37H3 Plants: Life on the Edge
BIOC38H3 Plants and Society
BIOC40H3 Plant Physiology
BIOC54H3 Animal Behaviour
BIOC62H3 Role of Zoos in Conservation
BIOD26H3 Fungal Biology & Pathogenesis
BIOD33H3 Comparative Animal Physiology
BIOD37H3 Biology of Plant Stress
BIOD43H3 Animal Movement and Exercise
BIOD45H3 Animal Communication
BIOD48H3 Ornithology and Herpetology
BIOD53H3 Special Topics in Behavioural Ecology
EESC30H3 Microbial Biogeochemistry

B. Senior Research Courses (optional)

Students interested in graduate research are encouraged to take one or more of the independent research courses offered in Biological Sciences as part of their degree.

BIOD95H3 Supervised Study in Biology
BIOD98Y3 Directed Research in Biology

Minor modifications to curriculum submitted by the Department of Biological Sciences.

BIOD99Y3 Directed Research in Biology

C. Complementary Elective Courses (optional)

This list of courses from other departments complements a degree in Biodiversity, Ecology and Evolution and hence students may want to consider these courses as potential electives. Please note that some of these courses require prerequisites not included in this program. Students are not required to take any of these courses; they are provided for guidance only.

EESA06H3 Introduction to Planet Earth

EESA10H3 Human Health and the Environment

EESB16H3 Feeding Humans - The Cost to the Planet

EESD15H3 Cleaning Up Our Mess: Remediation of Terrestrial and Aquatic Environments

GGRA02H3 The Geography of Global Processes

GGRA30H3 Geographic Information Systems (GIS) and Empirical Reasoning

GGRC44H3 Environmental Conservation and Sustainable Development

NROB60H3 Neuroanatomy Laboratory

NROC34H3 Neuroethology

NROC61H3 Learning and Motivation

NROC64H3 Sensory and Motor Systems

PSYA01H3 Introductory Psychology: Part I

PSYA02H3 Introductory Psychology: Part II

PSYB45H3 Behaviour Modification: Origins and Applications

PSYB64H3 An Introduction to Physiological Psychology

**MAJOR PROGRAM IN ~~BIODIVERSITY, ECOLOGY AND EVOLUTION~~
CONSERVATION & BIODIVERSITY (SCIENCE)**

Supervisor: I. Stehlik *E-mail:* biodiversity@utsc.utoronto.ca

This program provides background and training in modern biological approaches to the study of biodiversity, ecology, and evolution. The links between these fields are emphasized, and topics covered range from the structure and function of ecosystems to the evolution of behaviour, morphology, and physiology.

Program Requirements

This program consists of 8.5 required credits. To complete their degree, students should combine this major program with another major program, or two minor programs, from disciplines outside of biology. Note however that this program *cannot* be combined with the major program in Human Biology, the major program in Biology or the minor program in Biology. When selecting their course of studies, students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements).

Minor modifications to curriculum submitted by the Department of Biological Sciences.

First Year

1.0 Credit of Introductory Biology Courses

BIOA01H3 Life on Earth: Unifying Principles

BIOA02H3 Life on Earth: Form, Function and Interactions

1.0 Credit in Chemistry

CHMA10H3 Introductory Chemistry I: Structure and Bonding

CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

0.5 Credit in Mathematics or Statistics

Choose from:

MATA30H3 Calculus I for Biological and Physical Sciences

STAB22H3 Statistics I

PSYB07H3 Data Analysis in Psychology

Second Year

3.0 Credits of Biology Core Courses

BIOB10H3 Cell Biology

BIOB11H3 Molecular Aspects of Cellular and Genetic Processes

[(BIOB30H3) Mammalian Physiology I or BIOB34H3 Animal Physiology]

~~BIOB31H3 Plant Physiology~~ **BIOB38H3 Plants and Society**

BIOB50H3 Ecology

BIOB51H3 Evolutionary Biology

0.5 Credit of the Ecology & Evolution Core Lab

BIOB52H3 Ecology and Evolutionary Biology Laboratory

Third Year

1.0 Credit of Ecology & Evolution Foundation Courses

Choose from:

BIOC16H3 Evolutionary Genetics and Genomics

BIOC50H3 Macroevolution

BIOC59H3 Advanced Population Ecology

BIOC61H3 Community Ecology and Environmental Biology

1.0 Credit of Other C-level Courses

Choose from:

BIOC37H3 Plants: Life on the Edge

BIOC38H3 Plants and Society

BIOC40H3 Plant Physiology

BIOC51H3 Tropical Biodiversity Field Course

BIOC52H3 Ecology Field Course

BIOC54H3 Animal Behaviour

BIOC58H3 Biological Consequences of Global Change

BIOC60H3 Winter Ecology

BIOC62H3 Role of Zoos in Conservation

Minor modifications to curriculum submitted by the Department of Biological Sciences.

BIOC63H3 Conservation Biology
BIOC65H3 Environmental Toxicology
BIOC67H3 Inter-University Biology Field Course
EESC30H3 Microbial Biogeochemistry

Fourth Year

0.5 Credit of D-level Courses

Choose from:

BIOD25H3 Genomics
BIOD26H3 Fungal Biology & Pathogenesis
BIOD33H3 Comparative Animal Physiology
BIOD43H3 Animal Movement and Exercise
BIOD45H3 Animal Communication
BIOD48H3 Ornithology and Herpetology
BIOD52H3 Special Topics in Biodiversity and Systematics
BIOD53H3 Special Topics in Behavioural Ecology
BIOD54H3 Applied Conservation Biology
BIOD60H3 Spatial Ecology
BIOD62H3 Species and Speciation
BIOD66H3 Causes & Consequences of Biodiversity
EESD15H3 Cleaning Up Our Mess: Remediation of Terrestrial and Aquatic Environments

Rationale:

The title of the programs is being changed to better reflect and promote the content of the programs. Ecology and Evolutionary Biology are fields used to study biodiversity; the title element “Biodiversity” adequately represents the underlying methods of study, making Ecology and Evolutionary Biology redundant. Conservation is a current and developing strength of both this program and the Department of Biological Sciences, and adding “Conservation” to the title of these programs highlights this fact. In addition, students may better appreciate the relevance of these programs for global environmental and biodiversity issues (and careers focuses on dealing with these issues) by including Conservation in the title. Finally, this change in title will contribute and synergize with ongoing plans to develop a professional Masters program in Conservation and Biodiversity.

The Department of Biological Sciences has re-organized its plant-focused courses and changed the content of the core second year curriculum. Plant physiology (BIOB31H3) has been shifted to the C level (BIOC40H3) as an optional course, while Plants and Society (BIOC38H3) has been shifted to the B level (BIOB38H3) and added to the core of second year courses required for all Specialist and Major Programs. This change is being made because plant physiology is more appropriate for the third year, and builds on second year courses in cell and molecular biology. Plants and Society is a gateway course that will both provide foundational knowledge in botany and spur interest in higher levels courses in plants (including plant ecology, evolution, physiology, development, and genetics).

Minor modifications to curriculum submitted by the Department of Biological Sciences.

BIOC60H3 and BIOD54H3 are new courses suitable as options for these programs.

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

3. Program Change

Program: MAJOR IN BIOLOGY (B.SC.)

Overview of Changes:

- Delete BIOB31H3 as a program requirement; add BIOB38H3 as a program requirement.

Calendar Copy Showing Changes:

MAJOR PROGRAM IN BIOLOGY (SCIENCE)

Supervisor: I. Stehlik *Email:* biology-major@utsc.utoronto.ca

Biology is the study of life and this major program in Biology is meant to provide students with a solid basic knowledge of this vast discipline, while also allowing the student to tailor their program in the upper years toward one or more of biology's many sub-disciplines. Many of the world's most important and timely issues (medical science and disease, conservation and biodiversity, food and energy supplies) are issues that require citizens to have a firm understanding of biological principles and practices.

Program Requirements

This program consists of 8.0 required credits. To complete their degree, students should combine this major program with another major program, or two minor programs, from disciplines outside of biology. When selecting their course of studies, students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements).

First Year

1.0 Credit of Introductory Biology Courses

BIOA01H3 Life on Earth: Unifying Principles

BIOA02H3 Life on Earth: Form, Function and Interactions

1.0 Credit in Chemistry

CHMA10H3 Introductory Chemistry I: Structure and Bonding

CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

0.5 Credit in Mathematics or Statistics

Choose from:

MATA30H3 Calculus I for Biological and Physical Sciences

STAB22H3 Statistics I (this course could also be taken in second year)

Minor modifications to curriculum submitted by the Department of Biological Sciences.

PSYB07H3 Data Analysis in Psychology (this course could also be taken in second year)

Second Year

3.0 Credits of Biology Core Courses

BIOB10H3 Cell Biology

BIOB11H3 Molecular Aspects of Cellular and Genetic Processes

[(BIOB30H3) Mammalian Physiology I or BIOB34H3 Animal Physiology]

~~BIOB31H3 Plant Physiology~~ **BIOB38H3 Plants and Society**

BIOB50H3 Ecology

BIOB51H3 Evolutionary Biology

0.5 Credit of Biology Core Labs

Choose from:

BIOB12H3 Cell and Molecular Biology Laboratory

BIOB32H3 Animal Physiology Laboratory

BIOB33H3 Human Development and Anatomy Laboratory

BIOB52H3 Ecology and Evolutionary Biology Laboratory

Third Year

1.5 Credits of Additional C-level Biology Courses

Choose from: Any BIO C-level courses offered by the department.

Note: that NROC34H3 (Neuroethology), EESC04H3 (Biodiversity and Biogeography) and EESC30H3 (Microbial Biogeochemistry) may also be used toward fulfilling this requirement.

Fourth Year

0.5 Credit of Additional D-Level Biology Courses

Choose from: Any BIO D-level courses offered by the department. Note: that this includes the Biology Supervised Studies and Directed Research courses (BIOD95H3, BIOD98Y3 & BIOD99Y3).

Rationale:

The Department of Biological Sciences has re-organized its plant-focused courses and changed the content of the core second year curriculum. Plant physiology (BIOB31H3) has been shifted to the C level (BIOC40H3) as an optional course, while Plants and Society (BIOC38H3) has been shifted to the B level (BIOB38H3) and added to the core of second year courses required for all Specialist and Major Programs. This change is being made because plant physiology is more appropriate for the third year, and builds on second year courses in cell and molecular biology. Plants and Society is a gateway course that will both provide foundational knowledge in botany and spur interest in higher levels courses in plants (including plant ecology, evolution, physiology, development, and genetics).

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

4. Program Change

Program: SPECIALIST IN CELL & MOLECULAR BIOLOGY (B.SC.)
SPECIALIST (CO-OPERATIVE) IN CELL & MOLECULAR BIOLOGY
(B.SC.)

Overview of Changes:

- Change program name from Cell & Molecular Biology to MOLECULAR BIOLOGY & BIOTECHNOLOGY; i.e.,
 - Specialist in Molecular Biology & Biotechnology (B.Sc.)
 - Major in Molecular Biology & Biotechnology (B.Sc.)
- Delete BIOB31H3 as a program requirement; add BIOB38H3 as a program requirement.
- Add BIOC40H3 and BIOD29H3 as options.

Calendar Copy Showing Changes:

SPECIALIST PROGRAM IN ~~CELL AND MOLECULAR BIOLOGY~~ MOLECULAR BIOLOGY & BIOTECHNOLOGY (SCIENCE)

Supervisor: J. Nash *Email:* cell-and-molecular-biology@utsc.utoronto.ca

The ~~Cell and~~ Molecular Biology & Biotechnology program strives to help students construct a broad foundation of knowledge across the major disciplines of biology in the first two years of study, and combine this knowledge with an increasingly analytical and reflective approach to learning. Upon this base students deepen their knowledge of biological processes that occur at the cellular and molecular level through the course work of their third and fourth years. This is a laboratory-rich program that integrates an understanding of chemical and physical processes with our complex biological systems. Because of broad training in biology and rigorous cross training in cognate disciplines graduates are well positioned to apply to professional and graduate schools or work in a broad range of government regulatory agencies, clinical or research-focused industries and other careers that require the union of strong analytical and technical skills.

Program Requirements

This program consists of 14.0 required credits. In selecting options and electives, students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements).

First Year

1.0 Credit of Introductory Biology Courses

BIOA01H3 Life on Earth: Unifying Principles

BIOA02H3 Life on Earth: Form, Function and Interactions

1.0 Credit of Introductory Chemistry Courses

Minor modifications to curriculum submitted by the Department of Biological Sciences.

CHMA10H3 Introductory Chemistry I: Structure and Bonding
CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

1.0 Credit in Mathematics

Choose from:

[MATA30H3 & MATA35H3 Calculus I for Biological and Physical Sciences & Calculus II for Biological Sciences], *or*
[MATA30H3 & MATA36H3 Calculus I for Biological and Physical Sciences & Calculus II for Physical Sciences]

1.0 Credit in Physics

Choose 0.5 credit from:

PHYA10H3 Introduction to Physics IA
PHYA11H3 Introduction to Physics IB

Choose 0.5 credit from:

PHYA21H3 Introduction to Physics IIA
PHYA22H3 Introduction to Physics IIB

0.5 Credit in Statistics

Choose from:

STAB22H3 Statistics I (this course could also be taken in second year)
PSYB07H3 Data Analysis in Psychology (this course could also be taken in second year)

Second Year

3.0 Credits of Biology Core Courses

BIOB10H3 Cell Biology
BIOB11H3 Molecular Aspects of Cellular and Genetic Processes
[(BIOB30H3) Mammalian Physiology I *or* BIOB34H3 Animal Physiology]
~~BIOB31H3 Plant Physiology~~ **BIOB38H3 Plants and Society**
BIOB50H3 Ecology
BIOB51H3 Evolutionary Biology

0.5 Credit of Biology Core Labs

BIOB12H3 Cell and Molecular Biology Laboratory

1.0 Credit of Organic Chemistry Courses

CHMB41H3 Organic Chemistry I
CHMB42H3 Organic Chemistry II

Third Year

3.0 Credits of Biology C-level Courses

BIOC12H3 Biochemistry I: Proteins & Enzymes
BIOC13H3 Biochemistry II: Bioenergetics and Metabolism
BIOC15H3 Genetics
BIOC17H3 Microbiology: The Bacterial Cell

Minor modifications to curriculum submitted by the Department of Biological Sciences.

BIOC23H3 Practical Approaches to Biochemistry
BIOC39H3 Immunology (can be completed in third or fourth year)

0.5 Credit in Computer Science

Choose from:

CSCA08H3 Introduction to Computer Programming
CSCA20H3 Computer Science for the Sciences
PSCB57H3 Introduction to Scientific Computing
Computer science might be taken in an earlier year

Third/Fourth Year

0.5 Credit of Cognate Biology Courses

Choose from:

BIOC10H3 Cell Biology: Intracellular Compartments and Protein Sorting
BIOC14H3 Genes, Environment and Behaviour
BIOC19H3 Animal Developmental Biology
BIOC21H3 Vertebrate Histology: Cells and Tissues
(BGYC22H3) Vertebrate Histology: Organs
BIOC31H3 Molecular Aspects of Plant Development
BIOC40H3 Plant Physiology
BIOD37H3 Biology of Plant Stress

Fourth Year

0.5 Credit in Advanced Molecular Techniques

BIOD21H3 Advanced Molecular Biology Laboratory

0.5 credit of D-level Research-oriented "Cell & Molecular" Course Work

Choose from:

BIOD17H3 Seminars in Cellular Microbiology
BIOD19H3 Epigenetics in Health and Disease
BIOD22H3 Molecular Biology of the Stress Response
BIOD23H3 Special Topics in Cell Biology
BIOD25H3 Genomics
BIOD26H3 Fungal Biology and Pathogenesis
BIOD27H3 Molecular Endocrinology
BIOD29H3 Pathobiology of Human Disease
BIOD95H3 Supervised Study in Biology
BIOD98Y3 Directed Research in Biology

Note: Any of these courses not used to satisfy this requirement may be used to fulfill the '0.5 Credit of *Cognate Biology Courses*'.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

**SPECIALIST (CO-OPERATIVE) PROGRAM IN ~~CELL AND MOLECULAR~~
BIOLOGY MOLECULAR BIOLOGY & BIOTECHNOLOGY (SCIENCE)**

Supervisor: J. Nash Email: cell-and-molecular-biology@utsc.utoronto.ca

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

The ~~Cell and~~ Molecular Biology & Biotechnology program strives to help students construct a broad foundation of knowledge across the major disciplines of biology in the first two years of study, and combine this knowledge with an increasingly analytical and reflective approach to learning. Upon this base students deepen their knowledge of biological processes that occur at the cellular and molecular level through course work of their third and fourth years. This is a laboratory-rich program that integrates an understanding of chemical and physical processes with our complex biological systems. Because of broad training in biology and rigorous cross training in cognate disciplines graduates are well positioned to apply to professional and graduate schools or work in a broad range of government regulatory agencies, clinical or research-focused industries and other careers that require the union of strong analytical and technical skills. The co-op option of the Cell and Molecular Biology program complements and punctuates academic course work with full-time work terms in research laboratories, government, health care, or in public or private industry. These placements help students define and refine their career and/or professional school goals. For information on admissions, fees, work terms and standing in the Program, please see the Co-operative Programs section of this *Calendar*.

Program Admission

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 the Co-operative Programs section in this *Calendar*.

Current U of T Scarborough students: Application procedures can be found at the Registrar's Office website: www.utsc.utoronto.ca/registrar. The minimum qualifications for entry are 5.0 credits including BIOA01H3, BIOA02H3, CHMA10H3, CHMA11H3, [(MATA20H3) & (MATA21H3)] or [MATA30H3 & [MATA35H3 or MATA36H3]], [PHYA10H3 or PHYA11H3], plus a cumulative GPA of at least 2.75.

Program Requirements

This program consists of 14.0 required credits plus two work-terms. In selecting options and electives, students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements).

A. Course Requirements

First Year

1.0 Credit of Introductory Biology Courses

BIOA01H3 Life on Earth: Unifying Principles

BIOA02H3 Life on Earth: Form, Function and Interactions

Minor modifications to curriculum submitted by the Department of Biological Sciences.

1.0 Credit of Introductory Chemistry Courses

CHMA10H3 Introductory Chemistry I: Structure and Bonding

CHMA11H3 Introductory Chemistry I: Reactions and Mechanisms

1.0 Credit in Mathematics

Choose from:

MATA30H3 & MATA35H3 Calculus I for Biological and Physical Sciences & Calculus II for Biological Sciences

MATA30H3 & MATA36H3 Calculus I for Biological and Physical Sciences & Calculus II for Physical Sciences

1.0 Credit in Physics

Choose 0.5 credit from:

PHYA10H3 Introduction to Physics IA

PHYA11H3 Introduction to Physics IB

Choose 0.5 credit from:

PHYA21H3 Introduction to Physics IIA

PHYA22H3 Introduction to Physics IIB

0.5 Credit in Statistics

Choose from:

STAB22H3 Statistics I (this course could also be taken in second year)

PSYB07H3 Data Analysis in Psychology (this course could also be taken in second year)

Second Year

3.0 Credits of Biology Core Courses

BIOB10H3 Cell Biology

BIOB11H3 Molecular Aspects of Cellular and Genetic Processes

(BIOB30H3) Mammalian Physiology I or BIOB34H3 Animal Physiology

~~BIOB31H3 Plant Physiology~~ **BIOB38H3 Plants and Society**

BIOB50H3 Ecology

BIOB51H3 Evolutionary Biology

0.5 Credit of Biology Core Labs

BIOB12H3 Cell and Molecular Biology Laboratory

1.0 Credit of Organic Chemistry Courses

CHMB41H3 Organic Chemistry I

CHMB42H3 Organic Chemistry II

Computer Science might be taken in this year and will enhance Co-op placement options.

Third Year

3.0 Credits of Biology C-level Courses

BIOC12H3 Biochemistry I: Proteins and Enzymes

BIOC13H3 Biochemistry II: Bioenergetics and Metabolism

Minor modifications to curriculum submitted by the Department of Biological Sciences.

BIOC15H3 Genetics
BIOC17H3 Microbiology: The Bacterial Cell
BIOC23H3 Practical Approaches to Biochemistry
BIOC39H3 Immunology (can be completed in third or fourth year)

0.5 Credit in Computer Science

Choose from:
CSCA08H3 Introduction to Computer Programming
CSCA20H3 Computer Science for the Sciences
PSCB57H3 Introduction to Scientific Computing

Third/Fourth Year

0.5 Credit of Cognate Biology Courses

Choose from:
BIOC10H3 Cell Biology: Intracellular Compartments and Protein Sorting
BIOC14H3 Genes, Environment and Behaviour
BIOC19H3 Animal Developmental Biology
BIOC21H3 Vertebrate Histology: Cells and Tissues
(BGYC22H3) Vertebrate Histology: Organs
BIOC31H3 Molecular Aspects of Plant Development
BIOC40H3 Plant Physiology
BIOD37H3 Biology of Plant Stress

Fourth Year

0.5 Credit in Advanced Molecular Techniques

BIOD21H3 Advanced Molecular Biology Laboratory

0.5 Credit of D-level Research-Oriented "Cell & Molecular" Course Work

Choose from:
BIOD17H3 Seminars in Cellular Microbiology
BIOD19H3 Epigenetics in Health and Disease
BIOD22H3 Molecular Biology of the Stress Response
BIOD23H3 Special Topics in Cell Biology
BIOD25H3 Genomics
BIOD26H3 Fungal Biology and Pathogenesis
BIOD27H3 Molecular Endocrinology
BIOD29H3 Pathobiology of Human Disease
BIOD95H3 Supervised Study in Biology
BIOD98Y3 Directed Research in Biology
Note: Any of these courses not used to satisfy this requirement can be used to fulfill the '0.5 Credit of Cognate Biology Courses.'

B. Work Term Requirements

The program requires eight four-month terms of study and two four-month work terms. Practical work experience in the fields of cell biology, genetics, molecular biology and biotechnology are alternated with study terms to enhance academic studies and develop

Minor modifications to curriculum submitted by the Department of Biological Sciences.

professional and personal skills. Students must submit both an oral and written report on each work term for evaluation, and will also complete a standardized form assessing the quality of their co-op work term. Students are expected to do at least one of their work placements in the fall or winter term.

To be eligible for their first work term, students must be in good standing in the program and have completed at least 10.0 credits, including BIOA01H3, BIOA02H3, CHMA10H3, CHMA11H3, [(MATA20H3) & (MATA21H3)] or [MATA30H3 & [MATA35H3 or MATA36H3]], [PHYA10H3 or PHYA11H3], BIOB10H3, BIOB11H3, BIOB12H3, CHMB41H3, CHMB42H3. Students must also successfully complete Arts & Science Co-op Work Term Preparation Activities, which include multiple networking sessions, speaker panels and industry tours along with seminars covering resumes, cover letters, job interviews and work term expectations, prior to their first work term.

To be eligible for their second work term placement, students must have completed at least 12.5 credits which must include [BIOC12H3 & BIOC15H3] or [BIOC13H3 & BIOC17H3] and have received a satisfactory evaluation for their performance and for their reports on their first work term. Completion of Statistics and Computer Science course work, before the second placement, is highly recommended.

Rationale:

The title of the programs is being changed so as to retain the core academic elements of the course (Molecular Biology) while better promoting the already existing practical aspects of the curriculum (Biotechnology). Cell biology remains an important part of the programs, and is adequately represented as a field of study within the broader umbrella of Molecular Biology and Biotechnology. Students in these programs explore topics in biotechnology (technological modification and application of biological elements for specific uses), including both medical and agricultural biotechnological approaches. This change does not alter the emphases or content of the programs.

The Department of Biological Sciences has re-organized its plant-focused courses and changed the content of the core second year curriculum. Plant physiology (BIOB31H3) has been shifted to the C level (BIOC40H3) as an optional course, while Plants and Society (BIOC38H3) has been shifted to the B level (BIOB38H3) and added to the core of second year courses required for all Specialist and Major Programs. This change is being made because plant physiology is more appropriate for the third year, and builds on second year courses in cell and molecular biology. Plants and Society is a gateway course that will both provide foundational knowledge in botany and spur interest in higher levels courses in plants (including plant ecology, evolution, physiology, development, and genetics).

BIOD29H3 is an existing course suitable as an option for these programs.

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

5. Program Change

Program: SPECIALIST IN HUMAN BIOLOGY (B.SC.)

Overview of Changes:

- Delete BIOB31H3 as a program requirement; add BIOB38H3 as a program requirement.
- Add BIOB40H3 as an option.

Calendar Copy Showing Changes:

SPECIALIST PROGRAM IN HUMAN BIOLOGY (SCIENCE)

Supervisor: A. Ashok *Email:* human-biology@utsc.utoronto.ca

The Human Biology specialist program provides a solid foundation of introductory science courses and core biology courses while emphasizing, in the upper years, issues related to human health, the nature of humans and their culture as well as the interaction of the human species with the environment. The first year of the program emphasizes introductory courses in biology, chemistry, calculus, physics and psychology. The second year of the program emphasizes core courses in cell biology, molecular biology, physiology, ecology, evolution and anatomy that provide the basis for continued specialization in the third and fourth years. The upper years of the program emphasize specialized courses in anatomy, histology, anthropology, biochemistry, endocrinology, immunology, microbiology, physiology, psychology, pathology and pathobiology. This program is suited for those students who wish to go onto health-related fields such as medicine, dentistry, nursing, pharmacy, physiotherapy and health policy/management or graduate studies in these, and other, areas such as physiology, medicine and endocrinology.

Program Requirements

This Program consists of 15.5 credits. In selecting options and electives, students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements).

Required Courses and Suggested Course Sequence

First Year

1.0 Credit of Introductory Biology Courses

BIOA01H3 Life on Earth: Unifying Principles

BIOA02H3 Life on Earth: Form, Function and Interactions

1.0 Credit of Introductory Chemistry Courses

CHMA10H3 Introductory Chemistry I: Structure and Bonding

CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

Minor modifications to curriculum submitted by the Department of Biological Sciences.

1.0 Credit of Mathematics

MATA30H3 & MATA35H3 Calculus I for Biological and Physical Sciences & Calculus II for Biological Sciences

1.0 Credit of Introductory Physics Courses

PHYA11H3 Introduction to Physics IB
PHYA22H3 Introduction to Physics IIB

1.0 Credit of Introductory Psychology Courses

PSYA01H3 Introductory Psychology: Part I
PSYA02H3 Introductory Psychology: Part II

Second Year

3.0 Credits of Biology Core Courses

BIOB10H3 Cell Biology
BIOB11H3 Molecular Aspects of Cellular and Genetic Processes
(BIOB30H3) Mammalian Physiology I or BIOB34H3 Animal Physiology
~~BIOB31H3 Plant Physiology~~ **BIOB38H3S Plants and Society**
BIOB50H3 Ecology
BIOB51H3 Evolutionary Biology

1.0 Credit of Biology Core Labs

BIOB32H3 Animal Physiology Laboratory
BIOB33H3 Human Development and Anatomy Laboratory

1.0 Credit of Organic Chemistry Courses

CHMB41H3 Organic Chemistry I
CHMB42H3 Organic Chemistry II

Third/Fourth Years

2.0 Credits of C-level Biology Core Courses

BIOC15H3 Genetics
BIOC17H3 Microbiology: The Bacterial Cell
BIOC32H3 Human Physiology I
BIOC39H3 Immunology

1.5 Credits of Additional C-level Biology Courses

Choose From:

BIOC10H3 Cell Biology: Intracellular Compartments and Protein Sorting
BIOC12H3 Biochemistry I: Proteins and Enzymes
BIOC13H3 Biochemistry II: Bioenergetics and Metabolism
BIOC14H3 Genes, Environment and Behaviour
BIOC16H3 Evolutionary Genetics and Genomics
BIOC19H3 Animal Developmental Biology
BIOC21H3 Vertebrate Histology: Cells and Tissues

Minor modifications to curriculum submitted by the Department of Biological Sciences.

[BIOC33H3 Human Physiology II: Lecture and Laboratory or BIOC34H3 Human Physiology II: Lecture]

BIOC40H3 Plant Physiology

BIOC58H3 Biological Consequences of Global Change

BIOC65H3 Environmental Toxicology

1.0 Credit of D-level Biology Courses

Choose From:

BIOD17H3 Seminars in Cellular Microbiology

BIOD19H3 Epigenetics in Health and Disease

BIOD26H3 Fungal Biology and Pathogenesis

BIOD27H3 Molecular Endocrinology

BIOD29H3 Pathobiology of Human Disease

BIOD33H3 Comparative Animal Physiology

BIOD43H3 Animal Movement and Exercise

BIOD65H3 Pathologies of the Nervous System

0.5 Credit in Statistics

Choose From:

STAB22H3 Statistics I

PSYB07H3 Data Analysis in Psychology

0.5 Credit in Psychology or Health Studies

Choose From any B-, C- or D-level Psychology course, or from the Health Studies courses listed below:

HLTB15H3 Introduction to Health Research Methodology

HLTB16H3 Introduction to Public Health

HLTB17H3 Conceptual Models of Health

HLTB20H3 Contemporary Human Evolution and Variation

HLTB21H3 Infectious Diseases

HLTB22H3 Biological Determinants of Health

HLTB40H3 Health Policy and Health Systems

Rationale:

The Department of Biological Sciences has re-organized its plant-focused courses and changed the content of the core second year curriculum. Plant physiology (BIOB31H3) has been shifted to the C level (BIOC40H3) as an optional course, while Plants and Society (BIOC38H3) has been shifted to the B level (BIOB38H3) and added to the core of second year courses required for all Specialist and Major Programs. This change is being made because plant physiology is more appropriate for the third year, and builds on second year courses in cell and molecular biology. Plants and Society is a gateway course that will both provide foundational knowledge in botany and spur interest in higher levels courses in plants (including plant ecology, evolution, physiology, development, and genetics).

BIOC40H3 is an existing course suitable as an option for this program.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

6. Program Change

Program: SPECIALIST IN INTEGRATIVE BIOLOGY (B.SC.)

Overview of Changes:

- Delete BIOB31H3 as a program requirement; add BIOB38H3 as a program requirement.
- Add BIOC40H3 and BIOD29H3 as options.
- Add BIOC60H3 (new) and BIOD54H3 (new) as options.

Calendar Copy Showing Changes:

SPECIALIST PROGRAM IN INTEGRATIVE BIOLOGY (SCIENCE)

Supervisor: I. Stehlik *Email:* integrative-biology@utsc.utoronto.ca

In today's rapidly changing world, the development of solutions to combat some of the most pressing global challenges such as climate change, emerging diseases, hunger and species extinction, requires an integrative approach in which expertise is drawn from disparate biological and other disciplines. The specialist program in Integrative Biology provides the student with a solid knowledge base in key core and foundational areas of biology while also providing a breadth of knowledge to support more specialized studies and focused training in a range of disciplines (for examples, see below under "Routes to Specialization"). Students who complete this program will be well positioned for a career in many aspects of the biological sciences or to undertake further studies at the professional or graduate level.

Program Requirements

This program consists of 14.5 required credits including at least 4.0 credits at the C- or D-level of which at least 1.0 must be at the D-level. In selecting options and electives students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements). It is advised that, including electives, students should plan to take 5 credits in each year of their four year degree.

A. Required Courses

First Year

1.0 Credit of Introductory Biology Courses

BIOA01H3 Life on Earth: Unifying Principles

BIOA02H3 Life on Earth: Form, Function and Interactions

Minor modifications to curriculum submitted by the Department of Biological Sciences.

1.0 Credit in Chemistry

CHMA10H3 Introductory Chemistry I: Structure and Bonding

CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

1.0 Credit in Mathematics

MATA30H3 & MATA35H3 Calculus I for Biological and Physical Sciences & Calculus II for Biological Sciences

0.5 Credit in Physics

Choose from:

PHYA10H3 Introduction to Physics IA

PHYA11H3 Introduction to Physics IB

0.5 Credit in Computer Science

Choose from:

CSCA08H3 Introduction to Computer Programming

CSCA20H3 Computer Science for the Sciences

PSCB57H3 Introduction to Scientific Computing (this course could also be taken in second year)

Second Year

3.0 Credits of Biology Core Courses

BIOB10H3 Cell Biology

BIOB11H3 Molecular Aspects of Cellular and Genetic Processes

[(BIOB30H3) Mammalian Physiology I or BIOB34H3 Animal Physiology]

~~BIOB34H3 Plant Physiology~~ **BIOB38H3 Plants and Society**

BIOB50H3 Ecology

BIOB51H3 Evolutionary Biology

0.5 Credit of Biology Core Labs

Choose from:

BIOB12H3 Cell and Molecular Biology Laboratory

BIOB32H3 Animal Physiology Laboratory

BIOB33H3 Human Development and Anatomy Laboratory

BIOB52H3 Ecology and Evolutionary Biology Laboratory

0.5 Credit in Statistics

Choose from:

STAB22H3 Statistics I

PSYB07H3 Data Analysis in Psychology

Third Year

1.5 Credits of Biology Foundation Courses

BIOC15H3 Genetics

BIOC17H3 Microbiology: The Bacterial Cell

Minor modifications to curriculum submitted by the Department of Biological Sciences.

BIOC54H3 Animal Behaviour

Third/Fourth Year

0.5 Credit of Advanced Courses in Physiology, Biochemistry and Neurobiology

Choose from:

BIOC12H3 Biochemistry I: Proteins and Enzymes
BIOC13H3 Biochemistry II: Bioenergetics and Metabolism
BIOC23H3 Practical Approaches to Biochemistry
BIOC32H3 Human Physiology I
BIOC33H3 Human Physiology II: Lecture and Laboratory
BIOC34H3 Human Physiology II: Lecture
BIOC39H3 Immunology
BIOC40H3 Plant Physiology
BIOC65H3 Environmental Toxicology
ANTC67H3 Foundations in Epidemiology
NROC34H3 Neuroethology
NROC61H3 Learning and Motivation
NROC64H3 Sensory and Motor Systems
PSYC31H3 Clinical Neuropsychology
BIOD27H3 Molecular Endocrinology
BIOD29H3 Pathobiology of Human Disease
BIOD43H3 Animal Movement and Exercise
BIOD65H3 Pathologies of the Nervous System
NROD67H3 Psychobiology of Aging

0.5 Credit of Advanced Courses in Ecology and Conservation

Choose from:

BIOC50H3 Macroevolution
BIOC51H3 Tropical Biodiversity Field Course
BIOC52H3 Ecology Field Course
BIOC58H3 Biological Consequences of Global Change
BIOC59H3 Advanced Population Ecology
BIOC61H3 Community Ecology and Environmental Biology
BIOC62H3 Role of Zoos in Conservation
BIOC63H3 Conservation Biology
BIOC67H3 Inter-University Biology Field Course
EESC04H3 Biodiversity and Biogeography
BIOD52H3 Special Topics in Biodiversity and Systematics
BIOD54H3 Applied Conservation Biology
BIOD60H3 Spatial Ecology
BIOD62H3 Species and Speciation
BIOD66H3 Causes and Consequences of Diversity

0.5 Credit of Advanced Courses in Genes and Development

Choose from:

BIOC10H3 Cell Biology: Intracellular Compartments and Protein Sorting

Minor modifications to curriculum submitted by the Department of Biological Sciences.

BIOC14H3 Genes, Environment and Behaviour
BIOC16H3 Evolutionary Genetics and Genomics
BIOC19H3 Animal Developmental Biology
BIOC31H3 Plant Development
BIOD19H3 Epigenetics in Health and Disease
BIOD21H3 Advanced Molecular Biology Laboratory
BIOD22H3 Molecular Biology of the Stress Response
BIOD23H3 Special Topics in Cell Biology
BIOD25H3 Genomics

0.5 Credit of Advanced Courses in Organismal Biology

Choose from:

BIOC21H3 Vertebrate Histology: Cells and Tissues
(BGYC22H3) Vertebrate Histology: Organs
ANTD22H3 Theory and Methodology of Primatology
ANTC68H3 Deconstructing Epidemics
EESC30H3 Microbial Biogeochemistry
BIOC37H3 Plants: Life on the Edge
BIOC38H3 Plants and Society
BIOC60H3 Winter Ecology
BIOD17H3 Seminars in Cellular Microbiology
BIOD26H3 Fungal Biology and Pathogenesis
BIOD29H3 Pathobiology of Human Disease
BIOD33H3 Comparative Animal Physiology
BIOD37H3 Biology of Plant Stress
BIOD45H3 Animal Communication
BIOD48H3 Ornithology and Herpetology
BIOD53H3 Special Topics in Behavioural Ecology

3.0 Credits of Additional C- or D-Level Biology Courses

Choose from:

Any BIO (or formerly BGY) C- or D-level courses offered by the department.

Note: this includes the Biology Team Research, Supervised Studies and Directed Research courses (BIOC99H3, BIOD95H3, BIOD98Y3 and BIOD99Y3).

Note: NROC34H3 (Neuroethology), EESC04H3 (Biodiversity and Biogeography) and EESC30H3 (Microbial Biogeochemistry) may also be used toward fulfilling this requirement, if not already used toward fulfilling one of the other requirements above.

Rationale:

The Department of Biological Sciences has re-organized its plant-focused courses and changed the content of the core second year curriculum. Plant physiology (BIOB31H3) has been shifted to the C level (BIOC40H3) as an optional course, while Plants and Society (BIOC38H3) has been shifted to the B level (BIOB38H3) and added to the core of second year courses required for all Specialist and Major Programs. This change is being made because plant physiology is more appropriate for the third year, and builds on second year courses in cell and molecular biology. Plants and Society is a gateway course that will both provide foundational knowledge in botany and spur interest in

Minor modifications to curriculum submitted by the Department of Biological Sciences.

higher levels courses in plants (including plant ecology, evolution, physiology, development, and genetics).

BIOC40H3 and BIOD29H3 are existing courses suitable as options for this program. BIOC60H3 and BIOD54H3 are new courses suitable as options for this program.

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

7. Program Change

Program: SPECIALIST (JOINT) IN PARAMEDICINE (B.SC.)

Overview of Changes:

- Replace BIOB33H3 (Human Development and Anatomy) with PMDB33H3 (Anatomy).
- Delete ANTC67H3 and ANTC68H3 as requirements.
- Reduce the total number of credits to complete the program from 18.0 to 17.0.

Calendar Copy Showing Changes:

SPECIALIST (JOINT) PROGRAM IN PARAMEDICINE (SCIENCE)

Supervisor of Studies: Shelley Brunt *Email:* paramedicine@utsc.utoronto.ca

This program consists of ~~18.0~~ 17.0 required credits and may be taken in fulfillment of the requirements of a four-year (20-credit) Honours Degree. Students taking this program must take an additional 3 credits of electives. When choosing electives keep in mind the minimum breadth requirements that must be met to complete a degree. It is advisable that, including electives, students plan to take 2.5 credits in each semester of their four year degree. Note that three of the PMD courses are 1 credit (Y courses) rather than 0.5 credit (H courses). Students who complete the requirements of the program will also qualify for the Paramedic Diploma from Centennial College. Students who have completed the requirements for Centennial's diploma are eligible to take the Ministry of Health exams required to qualify as a Primary Care Paramedic.

Program Admission

Limited enrolment. Applicants must fill out a joint program supplementary application form. Prior to taking courses at Centennial College, students must also fill out a medical certificate and have current qualifications in CPR and standard first aid. Other non-academic requirements such as a vulnerable sector police check, fitness standards and face mask fit certification will also ultimately be required. Additional details regarding these requirements may be found at Centennial's website or by contacting Walter Tavares at Centennial College (WTavares@centennialcollege.ca). Applicants may arrange to complete some of these requirements during their first year of study at the University of

Minor modifications to curriculum submitted by the Department of Biological Sciences.

Toronto Scarborough.

For more information on admission and deadlines, see the Joint Programs with Centennial College section of this *Calendar*.

Program Requirements

Notes:

1. In order to remain in the program, students must typically maintain a cumulative grade point average of at least 2.0. Students whose cumulative GPA falls below 2.0 should consult the program supervisor to discuss their options. Please note, space in some Centennial College courses is limited. Students who must repeat one of these courses and whose CGPA has fallen below 2.0 will be allowed to register in these courses only if space permits.

2. Suggested course sequences follow below:

1.0 Credit of Introductory Biology Courses

BIOA01H3 Life on Earth: Unifying Principles

BIOA02H3 Life on Earth: Form, Function and Interactions

~~2.0~~ 1.5 Credits of Core Biology Courses

BIOB10H3 Cell Biology

BIOB11H3 Molecular Aspects of Genetic Processes

[(BIOB30H3) Mammalian Physiology I or BIOB34H3 Animal Physiology]

~~BIOB33H3 Human Development and Anatomy~~

2.0 Credits of Foundational Biology Courses

BIOC15H3 Genetics

BIOC17H3 Microbiology: The Bacterial Cell

BIOC21H3 Vertebrate Histology: Cells and Tissues or BIOC32H3 Human Physiology I

BIOC34H3 Human Physiology II: Lecture

1.0 Credit of Advanced Biology Courses

Choose From:

BIOD17H3 Seminars in Cellular Microbiology

BIOD26H3 Fungal Biology and Pathogenesis

BIOD29H3 Pathobiology of Human Disease

BIOD33H3 Comparative Animal Physiology

BIOD43H3 Animal Movement and Exercise

BIOD65H3 Pathologies of the Nervous System

BIOD96Y3 Directed Research in Paramedicine

1.0 Credit of Introductory Chemistry Courses

CHMA10H3 Introductory Chemistry I: Structure and Bonding

CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

Minor modifications to curriculum submitted by the Department of Biological Sciences.

1.0 Credit of Introductory Psychology Courses

PSYA01H3 Introductory Psychology: Part I

PSYA02H3 Introductory Psychology: Part II

1.0 Credit of B-Level Psychology Courses

PSYB20H3 Introduction to Developmental Psychology

PSYB32H3 Abnormal Psychology

1.0 Credit of Statistics/Data Analysis Courses

[STAB22H3 Statistics I *or* PSYB07H3 Data Analysis in Psychology]

PSYC08H3 Advanced Data Analysis in Psychology

~~7.0~~ 7.5 Credits of Paramedicine Courses

*PMDB22H3 Pre-Hospital Care 1: Theory and Lab

*PMDB25H3 Therapeutic Approaches to Behaviour in Crisis

*PMDB30H3 Alterations of Human Body Function I

*PMDB32Y3 Pre-Hospital Care 2: Theory, Lab and Clinical

***PMDB33H3 Anatomy**

*PMDB36H3 Pharmacology for Allied Health Pre-requisite

*PMDB41H3 Professional Issues, Research and Leadership

*PMDC40H3 Alterations in Human Body Function II

*PMDC42Y3 Pre-Hospital Care 3: Theory, Lab and Field

*PMDC43H3 Medical Directed Therapeutics and Paramedic Responsibilities

*PMDC54Y3 Pre-Hospital Care 4: Theory, Lab and Field

*PMDC56H3 Primary Care Practice Integration and Decision Making

*A grade of 60% is required in these courses both to pass the course and to maintain standing in the program. All PMD courses are taught at Centennial College. Note some PMD courses require that 60% be achieved in all components of the course (i.e., lecture component, practical component, and clinical-placement component).

~~1.0 Credit of C Level Anthropology Courses~~

~~ANTC67H3 Foundations in Epidemiology~~

~~ANTC68H3 Deconstructing Epidemics~~

Suggested Program Sequence

Note: Students may also take courses in the summer, when offered. BIOB10Y3 may be taken in the summer in place of BIOB10H3 and BIOB11H3.

Year 1: Fall Session

1. BIOA01H3 Life on Earth: Unifying Principles
2. CHMA10H3 Introductory Chemistry I: Structure and Bonding
3. PSYA01H3 Introductory Psychology: Part I

Minor modifications to curriculum submitted by the Department of Biological Sciences.

4. PSYB07H3 Data Analysis in Psychology (fall) & 0.5 credits of elective courses
or
1.0 credits of elective courses

Year 1: Winter Session

1. BIOA02H3 Life on Earth: Form, Function and Interactions
2. CHMA11H3 Introductory Chemistry II; Reactions and Mechanisms
3. PSYA02H3 Introductory Psychology: Part II
4. STAB22H3 Statistics I & 0.5 credits of elective courses
or
1.0 credits of elective courses

Year 2: Fall Session

1. BIOB10H3 Cell Biology
2. ~~BIOB33H3 Human Development and Anatomy~~ **PMDB33H3 Anatomy**
3. PMDB22H3 Pre-Hospital Care 1: Theory and Lab
4. PMDB25H3 Therapeutic Approaches to Behaviour in Crisis
5. PMDB41H3 Professional Issues, Research and Leadership

Year 2: Winter Session

1. BIOB11H3 Molecular Aspects of Genetic Processes
2. PMDB30H3 Alterations of Human Body Function I
3. PMDB32Y3 Pre-Hospital Care 2: Theory, Lab and Clinical
4. PMDB36H3 Pharmacology for Allied Health Pre-requisite

Year 3: Fall Session

1. (BIOB30H3) Mammalian Physiology I or BIOB34H3 Animal Physiology
2. PMDC40H3 Alterations in Human Body Function II
3. PMDC42Y3 Pre-Hospital Care 3: Theory, Lab and Field
4. PMDC43H3 Medical Directed Therapeutics and Paramedic Responsibilities

Year 3: Winter Session

1. BIOC17H3 Microbiology: The Bacterial Cell
2. BIOC34H3 Human Physiology II: Lecture
3. PMDC54Y3 Pre-Hospital Care 4: Theory, Lab and Field
4. PMDC56H3 Primary Care Practice Integration and Decision Making

Year 4: Fall Session*

1. BIOC15H3 Genetics

Minor modifications to curriculum submitted by the Department of Biological Sciences.

2. BIOC21H3 Vertebrate Histology: Cells and Tissues or BIOC32H3 Human Physiology I
3. PSYB20H3 Introduction to Developmental Psychology
4. PSYB32H3 Abnormal Psychology
5. BIOD33H3 Comparative Animal Physiology *or* BIOD65H3 Pathologies of the Nervous System *or* BIOD26H3 Fungal Biology and Pathogenesis *or* BIOD96Y3 Directed Research in Paramedicine*

Year 4: Winter Session*

1. PSYC08H3 Advanced Data Analysis in Psychology
- ~~2. ANTC67H3 Foundations in Epidemiology~~
- ~~3. ANTC68H3 Deconstructing Epidemics~~
4. 2. BIOD17H3 Seminars in Cellular Microbiology *or* BIOD43H3 Animal Movement and Exercise *or* BIOD29H3 Pathobiology of Human Disease
- ~~5. 3. 0.5 credits of elective courses~~

***Note:** Students may take any 2 of these D-level courses to meet program requirements. The sequence here merely reflects current scheduling of courses in the various sessions.

Rationale:

The requirement of BIOB33H3 as the anatomy course for Joint Program students has been problematic as BIOB33H3, while providing sound background in basic anatomy, does not fully prepare the students for PMDB30H3 and PMDB36H3, two Paramedic courses for which BIOB33H3 is the prerequisite. The BIOB33H3 course was designed to meet the needs of the Human Biology program and does not touch on pediatric and geriatric variations important to the field of Paramedicine, nor does it provide needed physiological relevance specific to the field of Paramedicine. Over the course of the last few years' students, instructors and the program coordinator in the Paramedic portion of the program have expressed concern over student preparedness for PMDB30H3 and PMD36H3. Students in the joint program felt they were at a disadvantage relative to the college students in the Paramedic program, based on the different anatomy curriculum. This was a major point raised in the recent External Review of the Specialist Joint Paramedicine Program. The additional course content in the anatomy course taken by Paramedic students at Centennial (PMDB33H3) is necessary to properly prepare the Joint Paramedicine students for subsequent courses in the program. We feel this change is in the best interest of the students and fits with the proposed academic plan highlighted within the external review of the program.

ANTC67H3 (Foundations in Epidemiology) and ANTC68H3 (Deconstructing Epidemics) are being removed as requirements for the program since they are not consistently offered each academic year. Deletion of these courses does not impact the learning outcomes for the program. With the deletion of these two courses, the total credits for the program is reduced from 18.0 to 17.0, which is a more manageable for students.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

Consultation:

Within the Department of Biological Sciences. With Centennial College, the Department of Anthropology at UTSC and the Registrar's Office. Reviewed by the Dean's Office.

8. New Course

Calendar Copy:

BIOC60H3 Winter Ecology

Canada is characterized by its long and harsh winters. Any Canadian plant or animal has evolved one of three basic survival strategies: (1) migration (avoidance), (2) hibernation, and (3) resistance. These evolutionary adaptations are discussed by the example of organisms from across the GTA through indoor and outdoor activities.

Prerequisite: BIOB50H3 or BIOB51H3

Enrolment Limits: 48

Breadth Requirement: Natural Sciences

Rationale:

Large portions of ecosystems on earth are almost perpetually cold and hence form hostile environments, yet many organisms have evolved adaptations not just to survive, but to succeed in them. Canada with its long and harsh winters can serve as a showcase to study survival adaptations as well as population processes, because any living organism which occurs in Canada has successfully evolved one of three basic adaptations to survive the cold season: (1) migration (winter avoidance), (2) hibernation, or (3) resistance.

The study of how to survive our winters offers the unique opportunity to combine both plant and animal approaches to these three basic overwintering mechanisms, thus this course elegantly bridges the traditional gap between botany and zoology within the discipline of biology. In addition, as this course would run during the actual winter term, hands-on active learning in the outdoors is possible (in the Highland Creek Ravine or near campus), thus turning the winter, the low-point of organismal activity, and, thus traditionally regarded as an obstacle to experiential learning, into an advantage.

Learning Outcomes:

- The student will understand the basic winter survival strategies, what the constructive and destructive effects are of the snowpack and will know how selected, common local plants and animals survive the winter.
- The student will improve oral and written communication skills through classroom oral presentations in a peer-group approach and an active peer-learning approach to writing scientific reports.
- The student will improve scientific literacy by reading selected primary scientific publications.
- The student will improve social skills through a group-based approach to learning.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

Topics Covered:

- Basic three winter survival strategies: (1) migration (avoidance), (2) hibernation, (3) resistance
- Effects of the snowpack: destructive metamorphism, constructive metamorphism, melt metamorphism, insulative value of snow cover, snow and radiant energy
- Plants and the winter environment: acclimating to the cold, weather the winter drought, the evergreen advantage, mechanical forces, i.e. the brute forces of winter
- Animals and the winter environment: basics of energy exchange, warm bodies in cold environments, Bergmann's and Gloger's rules (is it really better to be big and white?), the cold-blooded gamble: to freeze or not to freeze
- Life under the ice (fish, amphibians, reptiles): temperature/density relationships, freezing around the edges, dormancy versus activity: compensating for the cold, dealing with oxygen depletion
- Plant-animal interactions: plant deterrents to winter browsing, coevolution of plants and browsers, plants and the quality of subnivean life

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office

9. New Course

Calendar Copy:

BIOD54H3 Applied Conservation Biology

Canada has a complex conservation landscape. Through lectures and interactive discussions with leading Canadian conservation practitioners, this course will examine how conservation theory is put into practice in Canada from our international obligations to federal and provincial legislation and policies, and the role of environmental non-government organizations.

Prerequisite: BIOC62H3 or BIOC63H3

Enrolment Limits: 35

Breadth Requirement: Natural Sciences

Rationale:

The proposed course will emphasize how conservation theory is put into practice in Canada, from its international obligation (Convention on Biological Diversity) to its federal legislation (Species at Risk Act) and policies (Canadian Biodiversity Strategy) to provincial legislation and policies, and the role of environmental non-government organizations (ENGOS). The course will link conservation science theory to policy in Canada through lectures and interactive panel discussions with leading Canadian conservation practitioners.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

The course will provide the students with an in-depth understanding of the role of science in Canadian conservation policy and the roles of conservation practitioners in government agencies and ENGOs and will better prepare students to engage in the Canadian conservation landscape.

Learning Outcomes:

- The student will understand the foundation of Canadian conservation policy and the science that informs it.
- The student will understand the various roles that conservation practitioners play in Canada.
- The student will improve oral communication and social skills through classroom oral participation and presentations in a peer-group approach to learning.
- The student will improve writing communication skills through an active peer-learning approach to writing scientific reports.
- The student will improve scientific and conservation literacy and critical thinking by using a wide range of multimedia information sources including primary literature, podcasts, and other resources.

Topics Covered:

- The role of conservation science in the implementation of:
 - International obligations (e.g. Convention on Biological Diversity, CITES, Migratory Birds Act)
 - Federal legislation (Species at Risk Act)
 - Federal policies (e.g. Canadian Biodiversity Strategy, Canadian Invasive Species Strategy, Canadian Aquatic Invasive Species Strategy)
 - Provincial legislation (e.g. Ontario Endangered Species Act)
 - Provincial policies (e.g. Ontario Biodiversity Strategy)
 - The role of environmental non-government organizations

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

10. New Course

Calendar Copy:

PMDB33H3 Anatomy

The basic anatomy of all the human body systems will be examined. The focus is on the normal functioning of the anatomy of all body systems and compensatory mechanisms, where applicable, to maintain homeostasis. Specific differences with respect to the pediatric/geriatric client will be highlighted. This course is taught at the Centennial HP Science and Technology Centre

Prerequisite: BIOA01H3 and BIOA02H3

Exclusions: ANA300Y, ANA301H, BIOB33H3, BGYB33H3

Enrolment Limits: Restricted to students in the Specialist (Joint) Program in Paramedicine

Breadth Requirement: Natural Sciences

Rationale:

The proposed course in anatomy is an existing Centennial College course taken by the Paramedic students at Centennial College. Students in the Specialist (Joint) Program in Paramedicine currently take BIOB33H3 (Human Development and Anatomy). While both courses offer similar basic anatomy the Centennial course is specifically designed to cover relevant material to the field of Paramedicine. The use of BIOB33H as the anatomy course for the Joint Paramedicine students has been problematic for the program as BIOB33H3, while providing sound background in basic anatomy, did not fully prepare the Joint Paramedicine students for PMDB30H3 and PMDB36H3, two courses for which BIOB33H3 is a prerequisite. BIOB33H3 does not touch on pediatric and geriatric variations important to the field of Paramedicine nor does it provide needed physiological relevance specific to the field of Paramedicine. The additional course content, covered in the anatomy course taken by Paramedic students at Centennial and proposed as PMDB33H3, is necessary to properly prepare the Joint Paramedicine students for subsequent courses in the program.

Over the last few years students, instructors and the program coordinator in the Paramedic portion of the program have expressed concern over student preparedness for PMDB30H3 and PMD36H3. Students in the Specialist Joint program felt they were at a disadvantage relative to their college peers based on the different anatomy curriculum. The proposed course will be available only to the students in the Specialist Joint program.

Learning Outcomes:

- Use the appropriate terminology to describe the human body.
- Analyze how the parts of a composite cell reflect the function of a particular cell type.
- Describe the normal structure of the various body systems.
- Analyze how the various body systems work together.
- Explain how many of the body systems complement one another in maintaining homeostasis.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

- Demonstrate the ability to use critical thinking skills in exploring physiological processes.
- Support their integration of the body systems through cooperative learning.

Topics Covered:

- Introduction to Medical Terminology
- Introduction to Human Anatomy Concepts
- Cell Structure and Tissues of the Body
- Nervous System: Introduction of Neurons
- The Brain
- The Skull
- The Spinal Cord: The vertebral column
- Peripheral Nervous System {PNS}
- Age and the Nervous System
- Respiratory System
- Cardiovascular System: Blood Coagulation
- Cardiovascular System: Blood Vessels
- Cardiovascular System: Heart
- Integumentary System
- Skeletal System
- Muscular System
- Special Senses
- Endocrine System
- Urinary System
- Digestive System
- Lymphatic System
- Immune System
- Reproductive System

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

11. Course Level Change

Existing Course Level and Code: BIOB31H3 Plant Physiology

New Course Level and Code: C-level – BIOC40H3

Calendar Copy Showing Changes:

BIOB31C40H3 Plant Physiology

An introduction to plant biology. Topics include plant and cell structure, water balance, nutrition, transport processes at the cell and whole plant level, physiological and biochemical aspects of photosynthesis, and growth and development in response to hormonal and environmental cues.

Prerequisite: ~~BIOA01H3 & BIOA02H3~~ **[[BIOB10H3 and BIOB11H3] or BIOB10Y3]] and BIOB38H3**

Exclusion: BIO251Y, (BOT251Y), (BGYB31H3) **(BIOB31H3)**

Breadth Requirement: Natural Sciences

Rationale:

The proposed change is part of an overall revision of the plant biology content in the biology curriculum. The intent of these changes is to strengthen enrolment in plant biology at the second year level and above by replacing the current second year core course, BIOB31H3, with a more broadly accessible course in plant biology that is currently offered in third year (BIOC38H3 – being changed to BIOB38H). The content of BIOC38H3 (to become BIOB38H3) follows more directly from the material on plant biology in first-year courses (and will be taught by the same instructor). The new second-year core course will provide a broader overview of plant biology and give students better preparation for third year plant biology. Students have found BIOB31H3 challenging as a second-year course, and moving it to third year, as BIOC40H3, will allow the material to be taught at a level more appropriate for students who have been exposed to the broader context of plant biology in second year. These changes parallel the reorganization of animal physiology courses completed last year.

Topics covered in BIOC40H3 will be the same as when the course was taught in second year; however, topics will be covered in more depth and detail, as appropriate for a third year course. Learning outcomes will be comparable, but commensurate with the course's third year level. Methods of assessment will be unchanged, but will evaluate students at a level of depth and detail appropriate for a third year course.

Pre-requisites have changed to ensure that students have appropriate background knowledge for understanding and learning topics at a level appropriate for a third year course.

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

12. Course Level Change

Existing Course Level and Code: BIOC38H3 Plants and Society

New Course Level and Code: B-level – BIOB38H3

Calendar Copy Showing Changes:

BIOB38H3 Plants and Society

How do plants feed humans? What are agricultural origins and what plant traits changed in domesticated plants? Human population is at 7 billion, but will climb to 10 billion in 2050. This will tax our planet's ability to sustain life and environmentally sustainable food production will become more integral.

Prerequisite: ~~BIOB31H3~~ **BIOA01H3 and BIOA02H3**

Exclusion: EEB202H, EESB16H3, (**BIOC38H**)

~~Enrolment Limits:~~ 48

Breadth Requirement: Natural Sciences

Rationale:

Currently BIOC38 is offered in third year. The course provides a broad survey of the uses of plants for food, medicine and other purposes such as brewing and paper-making. It emphasizes the importance and impact of studying plants on human society while linking this to the basic concepts of plant growth and structure.

The Department believes the content of BIOC38H3 is likely to be more accessible to students who are at the B level, than the current BIOB31H3 (Plant Physiology) course. They therefore propose to adapt BIOC38H3 to be taught in 2nd year as BIOB38H3, which would serve as a concrete way to highlight the importance of studying plants prior to exploring the in-depth concepts of plant physiology. With BIOC38H3 adapted for the 2nd year, another C-level plant physiology course could then discuss the manipulation of physiological and biochemical parameters such as water balance & nutrition, in the context of food production. These will be covered in BIOC40H3 (formerly BIOB31H3).

This change provides a more structured set of plant-focused courses for students and will improve the student learning experience at the B and C-level. Providing a foundation plant course at the B-level and a specialized plant course at C-level is likely to also have a broader appeal, improving student enrollment in both these courses. Please note that this change mirrors that made to the animal physiology courses last year.

The pre-requisites have changed due to the course changing from a C-level to a B-level and BIOA01 and BIOA02 are the appropriate choices for this course.

Consultation:

Within the Department of Biological Sciences. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Biological Sciences.

13. Course Level Change

Existing Course Level and Code: BIOC67H3 Inter-University Biology Field Course

New Course Level and Code: D-level – BIOD67H3

Calendar Copy Showing Changes:

BIOC~~D~~67H3 Inter-University Biology Field Course

Field courses offered by the Ontario Universities Program in Field Biology (OUPFB) in a variety of habitats and countries, usually during the summer. OUPFB modules (courses) are posted online in January, and students must apply by the indicated deadline. Additional information is provided on the Department of Biological Sciences website <http://www.utoronto.ca/~biosci/researchOpp.html>

Prerequisite: Varies by module (Permission of course co-ordinator required)

Exclusion: BIOC67H3, (BGYC67H3)

Breadth Requirement: Natural Sciences

Rationale:

This course allows students to take one of the field courses offered by participating universities across Ontario. These courses vary in requirements depending on the particular course offering; however, many of the courses require a level of preparation and experience commensurate with a fourth year course. Thus, it is most appropriate that this course have a D-level code.

Consultation:

Within the Department of Biological Sciences. With the Department of Physical and Environmental Sciences. Reviewed by the Dean's Office.



FOR APPROVAL

PUBLIC

OPEN SESSION

TO: University of Toronto Scarborough Academic Affairs Committee

SPONSOR: Dean and Vice-Principal (Academic), Rick Halpern
CONTACT INFO: vpdean@utsc.utoronto.ca

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

DATE: Wednesday, January 8, 2014

AGENDA ITEM: 3b

ITEM IDENTIFICATION:

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences

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] (Wednesday, January 8, 2014)**

PREVIOUS ACTION TAKEN:

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

HIGHLIGHTS:

This package includes all minor modifications to curriculum requiring governance approval submitted by the Department of Computer and Mathematical Sciences for the 2014-15 academic year. Minor modifications include new courses, changes to program

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

requirements, changes in course level. The Department of Computer and Mathematical Sciences is making minor modifications to 8 programs as follows:

- Specialist in Computer Science (B.Sc.)
- Minor in Computer Science (B.Sc.)
- Specialist (Co-operative) in Mathematics (B.Sc.); Major (Co-operative) in Mathematics (B.Sc.); Specialist (Co-operative) in Statistics (B.Sc.); and Major (Co-operative) in Statistics (B.Sc.)
- Major in Statistics (B.Sc.); and Minor in Statistics (B.Sc.)

FINANCIAL IMPLICATIONS:

There are no net implications for the campus' operating budget.

RECOMMENDATION:

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Computer and Mathematical Sciences, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved effective, April 1, 2014, for the academic year 2014-15.

DOCUMENTATION PROVIDED:

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

**Department of Computer and Mathematical Sciences
Minor Modification to Curriculum
December 13, 2013**

1. Program Change

Program: SPECIALIST IN COMPUTER SCIENCE (B.SC.)

Overview of Changes:

- Admission to program has been changed from Direct Entry to Entry After 1st year. The Program Admission paragraph in the Academic Calendar is being updated to reflect this change.
- For the Information Systems stream of the program: MGTB23H3 and MGTB29H3 have been deleted and replaced by MGHB02H3.

Calendar Copy Showing Changes:

SPECIALIST PROGRAM IN COMPUTER SCIENCE (SCIENCE)

Supervisor of Studies: R. Pancer (416-287-7679) Email: pancer@utsc.utoronto.ca

Program Objectives

This program provides a working knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises four streams with different emphases:

The Comprehensive Stream provides a broad and balanced exposure to the discipline. It is the stream best-suited for students planning to pursue graduate study in computer science, but it is also suitable for other career paths.

The Software Engineering Stream places a greater emphasis on the engineering side of the discipline, including computer systems and core applications.

The Information Systems Stream has a similar focus as the Software Engineering Stream, but it provides additional exposure to certain aspects of business management. It is of special interest to students wishing to pursue careers in technical management but who have a deep interest in the technology.

The Health Informatics Stream provides a broad perspective of the discipline and exposure to additional subjects, including statistics and social sciences, that are useful for a career as a computer scientist in the health sector.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

science students guidance in their course selection based on their broad (but possibly fluid) interests.

Program Admission

~~Each year up to 150 students are admitted directly from high school to the Comprehensive Streams of this program and the Co-operative Specialist Program in Computer Science (see below) on the basis of academic performance. Applicants must have completed Grade 12 Calculus & Vectors and Advanced Functions.~~

~~After first year, students may transfer from Comprehensive to other streams. Due to enrolment restrictions in required Management courses, entry to the Information Systems Stream is limited. Selection is based on grades in the program's A-level courses, including the two A-level MGT courses in requirement 6 of the Information Systems Stream below.~~

~~An additional number of students may transfer to the program after first year. To be eligible for late entry to a stream of the program, a student must have completed all A-level courses required in that stream. Admission is based on CGPA and grades in computer science, mathematics, and statistics courses that the student has taken. The minimum CGPA for admission is calculated annually.~~

Students may apply to a Computer Science Specialist stream after completing first year. An applicant must have passed all of the first-year computer science and mathematics courses required for their program. A CGPA of 2.5 or greater guarantees admission. Admission for students with a CGPA less than 2.5 will depend on their CGPA and the available space in the program.

Program Requirements

To remain in the program, a student must maintain a CGPA of 2.0 or higher throughout the program. To complete the program, a student must meet the course requirements described below. (One credit is equivalent to two courses). The program requirements comprise a core of 18 courses (9.0 credits), common to all three streams and additional requirements which depend on the stream, for a total of 27 courses (13.5 credits) for the Comprehensive and Software Engineering Streams, **29 courses (14.5 credits) for the Information Systems Stream**, and 30 courses (15.0 credits) for the ~~Information Systems and Health Informatics Streams~~.

Note: Many Computer Science courses are offered both at U of T Scarborough and at the St. George campus. When a course is offered at both campuses in a given session, U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus cannot guarantee space for U of T Scarborough students in their courses, especially those offered at both campuses.

Core (9.0 credits)

1. Writing Requirement (0.5 credit) (*)

One of: ANTA01H3, ANTA02H3, (CLAA02H3), (CTLA19H3), CTLA01H3, ENGA10H3, ENGA11H3, ENGB06H3, ENGB07H3, ENGB08H3, ENGB09H3, ENGB17H3, ENGB19H3, ENGB50H3, ENGB51H3, GGRA02H3, GGRA03H3, GGRB05H3, (GGRB06H3), (HISA01H3), (HLTA01H3), ACMA01H3, (HUMA01H3), (HUMA11H3), (HUMA17H3), (LGGA99H3), LINA01H3, PHLA10H3, PHLA11H3, WSTA01H3.

(*) It is recommended that this requirement be satisfied by the end of the second year.

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

2. A-level courses (3.0 credits)

CSCA08H3 Introduction to Computer Programming
CSCA48H3 Introduction to Computer Science
CSCA67H3 Discrete Mathematics for Computer Scientists
MATA23H3 Linear Algebra I
MATA31H3 Calculus I for Mathematical Sciences
MATA37H3 Calculus II for Mathematical Sciences

3. B-level courses (3.5 credits)

CSCB07H3 Software Design
CSCB09H3 Software Tools and Systems Programming
CSCB36H3 Introduction to the Theory of Computation
CSCB58H3 Computer Organization
CSCB63H3 Design and Analysis of Data Structures
MATB24H3 Linear Algebra II
STAB52H3 Introduction to Probability

4. C-level courses (1.5 credits)

CSCC43H3 Introduction to Databases
CSCC69H3 Operating Systems
CSCC73H3 Algorithm Design and Analysis

5. D-level courses (0.5 credit)

CSCD03H3 Social Impact of Information Technology

A. Comprehensive Stream

This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-5 common to all streams, 9 other distinct courses (4.5 credits) must be chosen satisfying all of the following requirements:

6. Additional required courses (2.5 credits)

MATB41H3 Techniques of the Calculus of Several Variables I
CSCC24H3 Principles of Programming Languages
CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics
CSCC63H3 Computability and Computational Complexity
CSCD37H3 Analysis of Numerical Algorithms for Computational Mathematics

7. Electives from courses on computers systems and applications (1.0 credit)

Two of:

CSCC01H3 Introduction to Software Engineering
CSCC09H3 Programming on the Web
CSCC11H3 Introduction to Machine Learning and Data Mining
CSCC85H3 Introduction to Embedded Systems
CSCD01H3 Engineering Large Software Systems
CSCD18H3 Computer Graphics
CSCD27H3 Computer and Network Security
CSCD43H3 Database System Technology
CSCD58H3 Computer Networks
CSCD84H3 Artificial Intelligence
CSC318H Design of Interactive Computational Media
CSC320H Visual Computing

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

CSC321H Introduction to Neural Networks and Machine Learning
CSC401H Natural Language Computing
CSC469H Operating Systems Design and Implementation
CSC485H Computational Linguistics
CSC488H Compilers and Interpreters

8. Electives from courses related to the theory of computing (0.5 credit)

One of:

MATC09H3 Introduction to Mathematical Logic
MATC16H3 Coding Theory and Cryptography
MATC32H3 Graph Theory and Algorithms for its Applications
MATC44H3 Introduction to Combinatorics
CSC438H Computability and Logic
CSC448H Formal Languages and Automata
CSC465H Formal Methods in Software Design

9. CSC, MAT, or STA elective (0.5 credit)

One of:

Any C- or D-level CSC, MAT, or STA course, excluding MATC82H3, MATC90H3, and STAD29H3.

B. Software Engineering Stream

This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-5 common to all streams, 9 other distinct courses (4.5 credits) must be chosen satisfying all of the following requirements:

6. Additional required courses (3.0 credits)

MATB41H3 Techniques of the Calculus of Several Variables I
CSCC01H3 Introduction to Software Engineering
CSCC24H3 Principles of Programming Languages
CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics
CSCC63H3 Computability and Computational Complexity
CSCD01H3 Engineering Large Software Systems

7. Electives from courses on computer systems and applications (1.5 credits)

Three of:

CSCC09H3 Programming on the Web
CSCC11H3 Introduction to Machine Learning and Data Mining
CSCC85H3 Introduction to Embedded Systems
CSCD18H3 Computer Graphics
CSCD27H3 Computer and Network Security
CSCD43H3 Database System Technology
CSCD58H3 Computer Networks
CSCD84H3 Artificial Intelligence
CSC318H Design of Interactive Computational Media
CSC320H Visual Computing
CSC321H Introduction to Neural Networks and Machine Learning
CSC401H Natural Language Computing
CSC469H Operating Systems Design and Implementation
CSC485H Computational Linguistics
CSC488H Compilers and Interpreters

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

C. Information Systems Stream

This stream requires a total of ~~29~~ ~~30~~ courses (~~14.5~~ ~~15~~ credits). In addition to the core requirements 1-5 common to all streams, ~~11~~ ~~12~~ other distinct courses (~~5.5~~ ~~6.0~~ credits) must be chosen satisfying all of the following requirements:

6. Required management courses (1.5 ~~2.0~~ credits)

MGTA01H3/(MGTA03H3) Introduction to Management I

MGTA02H3/(MGTA04H3) Introduction to Management II

~~MGHB02H3 Managing People and Groups in Organizations~~

~~MGTB23H3 Managing People in Organizations~~

~~MGTB29H3 Managing Groups and Organizations~~

7. Additional required mathematics and computer science courses (3.0 credits)

MATB41H3 Techniques of the Calculus of Several Variables I

CSCC01H3 Introduction to Software Engineering

CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics

CSCC63H3 Computability and Computational Complexity

CSCD01H3 Engineering Large Software Systems

CSCD43H3 Database System Technology

8. Electives from courses on computer systems and applications (1.0 credit)

Two of:

CSCC09H3 Programming on the Web

CSCC11H3 Introduction to Machine Learning and Data Mining

CSCC85H3 Introduction to Embedded Systems

CSCD18H3 Computer Graphics

CSCD27H3 Computer and Network Security

CSCD58H3 Computer Networks

CSCD84H3 Artificial Intelligence

CSC318H Design of Interactive Computational Media

CSC320H Visual Computing

CSC321H Introduction to Neural Networks and Machine Learning

CSC401H Natural Language Computing

CSC469H Operating Systems Design and Implementation

CSC485H Computational Linguistics

CSC488H Compilers and Interpreters

D. Health Informatics Stream

This stream requires a total of 30 courses (15.0 credits). In addition to the core requirements 1-5 common to all streams, 12 other distinct courses (6.0 credits) must be chosen satisfying all of the following requirements:

6. Additional courses related to health studies (2 credits)

PHLB09H3 Biomedical Ethics

MGTA06H3 Introduction to Health Management*

One of: (courses on health policy and politics)

HLTB16H3 Introduction to Public Health

HLTB17H3 Conceptual Models of Health

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

HLTB40H3 Health Policy and Health Systems

HLTC40H3 Introduction to Health Economics

One of: (other courses on health studies)

HLTB22H3 Biological Determinants of Health

HLTC05H3 Social Determinants of Health*

(*) These courses have prerequisites not included in this program's requirements.

7. Additional required computer science and statistics courses (1.5 credits)

CSCC01H3 Introduction to Software Engineering

STAB57H3 Introduction to Statistics

STAC50H3 Data Collection

8. Additional CSC, MAT and STA courses (2.5 credits)

MATB41H3 Techniques of the Calculus of Several Variables I

Four of:

any other C- or D-level CSC or STA courses, excluding STAD29H3 **†

NOTE: Of the five courses taken to satisfy this requirement, at least one must be a D-level course, and at least three must be CSC courses.

** Some C- and D-level CSC and STA courses have prerequisites that are not included among the required courses for this stream. Review the prerequisites carefully before selecting courses for this requirement. One or more courses taken to satisfy this requirement can be prerequisites for other courses also taken to satisfy this requirement.

† Among the CSC courses that can be used to satisfy this requirement there are two categories of courses that are particularly well aligned with the goals of the Health Informatics stream: software engineering and systems, and computer science applications. Courses in the category of software engineering and systems include: CSCC09H3, CSCC85H3, CSCD01H3, CSCD43H3, and CSCD58H3. Courses in the category of computer science applications include: CSCC11H3, CSCD18H3, and CSCD84H3.

Rationale:

- In consultation with the Dean's Office, the Registrar's Office reformed and reduced the number of Direct Entry programs at UTSC. This change necessitated the revision of admission requirements for the Specialist in Computer Science to remove Direct Entry and to accommodate Admission-After-First-Year. No changes have been made to the program requirements or the program learning outcomes as a result of this change.
- The Department of Management is updating its curriculum and MGTB23H3 and MGTB29H3 are being deleted and replaced by MGHB02H3. The requirements for the Information Systems stream have been modified to accommodate this change.

Consultation:

Within the Department of Computer and Mathematical Sciences. With the Dean's Office, the Registrar's Office and the Department of Management. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

2. Program Change

Program: MINOR IN COMPUTER SCIENCE (B.SC.)

Overview of Changes:

- CSCA08H3 replaces CSCA20H3 as a requirement of the program. Students may substitute CSCA20H3 for CSCA08H3 with the permission of the program Supervisor of Studies.

Calendar Copy Showing Changes:

MINOR PROGRAM IN COMPUTER SCIENCE (SCIENCE)

Supervisor of Studies: R. Pancer (416-287-7679) Email: pancer@utsc.utoronto.ca

Program Objectives

This program provides a basic introduction to the tools and methodologies of computer science and equips students with the knowledge necessary to use the tools and methodologies as they relate to other subjects. The program is intended to complement programs in other disciplines.

Program Requirements

This program may not be combined with any Major or Specialist Program in Computer Science, Mathematics or Statistics. It requires 4.0 credits as follows:

1. Introductory programming courses (1.0 credit)

~~CSCA20H3 Computer Science for the Sciences(*)~~

CSCA08H3 Introduction to Computer Science I(*)

CSCA48H3 Introduction to Computer Science II

~~(*) CSCA08H3 may be substituted for CSCA20H3 with permission of the Supervisor of Studies.~~

(*) CSCA20H3 may be substituted for CSCA08H3 with permission of the Supervisor of Studies.

2. Basic mathematics courses (0.5 credit)

One of:

CSCA67H3 Discrete Mathematics for Computer Scientists

MATA23H3 Linear Algebra I

MATA30H3 Calculus I for Biological and Physical Sciences

MATA31H3 Calculus I for Mathematical Sciences

MATA32H3 Calculus for Management I

PHLB50H3 Symbolic Logic I

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

3. Intermediate programming, systems, and theory courses (1.5 credits)

Three of:

CSCB07H3 Software Design

CSCB09H3 Software Tools and Systems Programming

CSCB20H3 Introduction to Databases and Web Applications

CSCB36H3 Introduction to the Theory of Computation(**)

CSCB58H3 Computer Organization

CSCB63H3 Design and Analysis of Data Structures(***)

(**) CSCB36H3 requires CSCA67H3

(***) CSCB63H3 requires CSCB36H3

4. CSC electives (1.0 credit)

Two of:

Any C- or D-level CSC courses (*)

(*) Some C- or D-level courses have prerequisites that would have to be taken in addition to the 4 credits required for this program. Check the prerequisites carefully before selecting courses to satisfy this requirement.

Rationale:

CSCA08H3 will now be a prerequisite for CSCA48H3. Replacing CSCA20H3 with CSCA08H3 removes a hidden prerequisite from the program. This change will make the Minor in Computer Science program somewhat more challenging for students, but not inordinately so, since students who do well in CSCA20H3 will be granted permission to take CSCA48H3. As such, a student who does not know that they wish to complete a Minor in Computer Science prior to first year, who therefore takes CSCA20H3 instead of CSCA08H3, will not be precluded from taking the Minor.

Consultation:

Within the Department of Computer and Mathematical Sciences. Reviewed by the Dean's Office.

3. Program Change

Programs: SPECIALIST (CO-OPERATIVE) IN MATHEMATICS (B.SC.)

MAJOR (CO-OPERATIVE) IN MATHEMATICS (B.SC.)

SPECIALIST (CO-OPERATIVE) IN STATISTICS (B.SC.)

MAJOR (CO-OPERATIVE) IN STATISTICS (B.SC.)

Overview of Changes:

- Revise program Admission Requirements to clarify that students will enter the program after first year; increase the CGPA to enter from 2.5 to 2.75.

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

Calendar Copy Showing Changes:

SPECIALIST (CO-OPERATIVE) PROGRAM IN MATHEMATICS (B.SC.)

Admission Requirements

Refer to the Program Admission requirements for the Specialist Program in Mathematics described above and the Co-operative Programs section in this Calendar. Students entering this program **after first year** must have a CGPA of at least 2.75.

MAJOR (CO-OPERATIVE) PROGRAM IN MATHEMATICS (B.SC.)

Admission Requirements

Refer to the Program Admission requirements for the Major Program in Mathematics described above and the Co-operative Programs section in this *Calendar*. Students entering this program **after first year** must have a CGPA of at least 2.75.

SPECIALIST (CO-OPERATIVE) PROGRAM IN STATISTICS (B.SC.)

Admission Requirements

Refer to the Program Admission requirements for the Specialist Program in Statistics described above and the Co-operative Programs section in this Calendar. Students entering this program **after first year** must have a CGPA of at least 2.75.

MAJOR (CO-OPERATIVE) PROGRAM IN STATISTICS (B.SC.)

Admission Requirements

Refer to the Program Admission requirements for the Major Program in Statistics described above and the Co-operative Programs section in this Calendar. Students entering this program **after first year** must have a CGPA of at least 2.75.

Rationale:

Adding “after first year” to the standard language clarifies that students enter these programs after completing first year.

Currently, students with a CGPA of at least 2.5 may be admitted to these co-op programs, but students in co-operative programs are required to maintain a minimum CGPA of 2.5. It is not uncommon for students to experience a marginal drop in their GPA after their first term in these programs, and students at the low end subsequently find themselves removed from co-op. To avoid this, the admission requirement is being raised to 2.75 thus creating a small buffer zone.

Consultation:

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

Within the Department of Computer and Mathematical Sciences. With the Office of Arts and Science Co-op. Reviewed by the Dean's Office.

4. Program Change

Program: MAJOR IN STATISTICS (B.SC.)
MINOR IN STATISTICS (B.SC.)

Overview of Changes:

- Add CSCA20H3 as an option; change CSCA08H3 from a requirement to an option.

Calendar Copy Showing Changes:

MAJOR PROGRAM IN STATISTICS (SCIENCE)

Supervisor of Studies: M. Samarakoon Email: mahinda@utsc.utoronto.ca

Recommended Writing Course: Students are urged to take a course from the following list of courses by the end of their second year.

ANTA01H3, ANTA02H3, (CLAA02H3), (CTLA19H3), CTLA01H3, ENGA10H3, ENGA11H3, ENGB06H3, ENGB07H3, ENGB08H3, ENGB09H3, ENGB17H3, ENGB19H3, ENGB50H3, ENGB51H3, GGRA02H3, GGRA03H3, GGRB05H3, (GGRB06H3), (HISA01H3), (HLTA01H3), ACMA01H3, (HUMA01H3), (HUMA11H3), (HUMA17H3), (LGGA99H3), LINA01H3, PHLA10H3, PHLA11H3, WSTA01H3.

Program Requirements

This program requires 8.0 full credits.

1. A-level courses

One of:

CSCA08H3 Introduction to Computer Programming

CSCA20H3 Computer Science for the Sciences

MATA23H3 Linear Algebra I

One of:

MATA30H3 Calculus I for Biological and Physical Sciences

MATA31H3 Calculus I for Mathematical Sciences*

One of:

MATA36H3 Calculus II for Physical Sciences

MATA37H3 Calculus II for Mathematical Sciences*

*The sequence MATA31H3 and MATA37H3 is recommended. MATA31H3 is the pre-requisite for MATA37H3.

2. B-level courses

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

MATB24H3 Linear Algebra II
MATB41H3 Techniques of the Calculus of Several Variables I
MATB42H3 Techniques of the Calculus of Several Variables II
STAB52H3 An Introduction to Probability*
STAB57H3 An Introduction to Statistics*

Upper-level courses

STAC67H3 Regression Analysis*

Four of:

any C- or D-level (or 300-400 on St. George) STA courses, except STAD29H3

Two of:

ACTB40H3, or any C- or D-level (or 300-400 on St. George) CSC, MAT or STA courses

* STAB52H3, STAB57H3, STAC67H3 - These courses must be taken at UTSC. No substitutes are permitted without permission of the program supervisor.

MINOR PROGRAM IN STATISTICS (SCIENCE)

Supervisor of Studies: M. Samarakoon Email: mahinda@utsc.utoronto.ca

Program Requirements

This program requires 4.0 full credits.

First Year (2.0 credits)

One of:

CSCA08H3 Introduction to Computer Programming

CSCA20H3 Computer Science for the Sciences

MATA23H3 Linear Algebra I

[MATA30H3 Calculus I for Biological and Physical Sciences or MATA31H3 Calculus I for Mathematical Sciences] and

[MATA36H3 Calculus II for Physical Sciences or MATA37H3 Calculus II for Mathematical Sciences.]

Notes:

The sequence MATA31H3 and MATA37H3 is recommended.

MATA31H3 is the pre-requisite for MATA37H3.

Second Year (1.0 credit)

STAB52H3 An Introduction to Probability

STAB57H3 An Introduction to Statistics

Third and Fourth Year (1.0 credit)

STAC67H3 Regression Analysis

Minor modifications to curriculum submitted by the Department of Computer and Mathematical Sciences.

In addition 0.5 credits must be chosen from any C- or D-level STA course but not STAD29H3.

Rationale:

CSCA08H3 has become a more challenging course aimed at Computer Science Programs and students. As such, it is more than necessary for the needs of students in the Minor and Major Statistics Programs, who do not necessarily require upper year Computer Science courses. As a consequence, it will be sufficient to allow students to take either CSCA08H3 or CSCA20H3.

Consultation:

Within the Department of Computer and Mathematical Sciences. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of English.

English (B.A.), adding 4 new courses at various levels, and changing the level of two existing courses.

FINANCIAL IMPLICATIONS:

There are no net implications for the campus' operating budget.

RECOMMENDATION:

Be It Resolved,

THAT all minor modifications to the curriculum in the Department of English, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

DOCUMENTATION PROVIDED:

Department of English, Minor Modifications to Curriculum, December 13, 2013.

Minor modifications to curriculum submitted by the Department of English.

**Department of English
Minor Modifications to Curriculum
December 13, 2013**

1. Program Change

Program: MAJOR IN ENGLISH (B.A.)

Overview of Changes:

- Add a general requirement for 0.5 credit at the D-level.
- Reduce the general requirement for “additional credits in English” from 4.0 to 3.5 to maintain total credits of 7.5 for the program.

Calendar Copy Showing Changes:

MAJOR PROGRAM IN ENGLISH (ARTS)

Program Supervisor: Until June 30th, 2013: K. Larson (416-287-7169). After July 1, 2013: TBA. Email: english-program-supervisor@utsc.utoronto.ca

Program Requirements

7.5 credits in English are required of which at least 2.0 must be at the C- or D-level. They should be selected as follows:

1. [ENGB03H3](#) Critical Thinking About Narrative
2. [ENGB04H3](#) Critical Thinking About Poetry
3. [ENGB05H3](#) Critical Writing about Literature
4. [ENGB27H3](#) Charting Literary History I
5. [ENGB28H3](#) Charting Literary History II
6. 1.0 credit from courses whose content is pre-1900
7. **0.5 credit in an ENG D-level course**
8. ~~4.0~~ **3.5** additional credits in English

Notes:

1. Students may count no more than one of the following courses towards the Major requirements: [ENGB35H3](#) Children's Literature, (ENGB36H3) Detective Fiction, (ENGB41H3) Science Fiction.
2. Students may count no more than one full credit of D-level independent study [[ENGD26Y3](#), [ENGD27Y3](#), [ENGD28Y3](#), (ENGD97H3), [ENGD98Y3](#), (ENGD99H3)] towards an English program.
3. The following courses do not count towards any English programs: ENG100H, ENG185Y.

Rationale:

A seminar experience should be the culmination of a student's training in the Major program in English and not something to be avoided or feared. Making a D-level seminar an expected component of the program will demystify the classes, and will help students

Minor modifications to curriculum submitted by the Department of English.

to see discussion and the completion of a significant writing project as an integral component of their work.

Consultation:

Within the Department of English. Reviewed by the Dean's Office.

2. New Course

Calendar Copy:

ENGB52H3 Literature and Science

An exploration of the many intersections between the worlds of literature and science. The focus will be on classic and contemporary works of fiction, non-fiction, poetry and drama that have illuminated, borrowed from or been inspired by the major discoveries and growing cultural significance of the scientific enterprise.

Enrolment Limits: 85

Breadth Requirement: Arts, Literature & Language

Rationale:

This course provides new breadth at the B-level in English. It will draw upon a diverse set of literary disciplines (fiction, non-fiction, drama and poetry) to elucidate the connections between literature and science throughout history. Students will have the opportunity to apply what they are learning in other literature classes to a somewhat unorthodox topic for the humanities. This will encourage new forms of critical thinking about literature and a new appreciation for the value of interdisciplinary exchange.

The course will focus on classic and contemporary works of fiction, non-fiction, poetry and drama that have either illuminated, borrowed from or been inspired by the major discoveries and growing cultural significance of the scientific enterprise. The University of Toronto is Canada's leading research-intensive university; it is also a powerhouse in the study of English and the humanities. This course will bring these two institutional identities into one room. It will provide English students with a deeper appreciation of how science has revolutionized the way writers view the world from the Renaissance to the modern-day, and it will demonstrate to non-English majors how advances in science have always informed and inspired the literary arts.

Learning Outcomes:

The learning outcomes for this course are threefold: practical, historical-theoretical, and professional. First, in terms of practical learning outcomes, students will be able to trace the concrete and existential impacts of major scientific breakthroughs on the thinking and creative production of writers throughout the ages, thereby gaining a deeper appreciation of the interconnectedness between science and the literary arts. They will be challenged to think about their chosen field, be it English or science, from new perspectives and in unorthodox ways. Students will also gain increased confidence with the vocabularies

Minor modifications to curriculum submitted by the Department of English.

specific to the worlds of science and literature, and they will understand that revolutions in one cultural segment always have the potential to revolutionize another. In terms of the historical-theoretical learning outcome, students will gain a sophisticated understanding of the history, development and impacts of the scientific revolution on human creativity and, by extension, literary production. Finally, in terms of the professional learning outcome, students will move into the latter years of their undergraduate education with a new appreciation for interdisciplinary exchange and, hopefully, a newfound passion for exploring unorthodox perspectives on their chosen field.

Topics Covered:

The Scientific Revolution and the Renaissance, Darwin's literary legacy, the writings of Einstein, science fiction, utopian/dystopian literature, environmentalism and nature writing, the literature of animal behaviour, narrative medicine, the quest as a literary and scientific model, the instructive value of the metaphor, the interpretive value of literature, the rare breed of scientist-writers. Scientific fields covered: environmental science, biology, health sciences, astronomy, theoretical physics, ecology, and ethology.

Consultation:

Within the Department of English. Reviewed by the Dean's Office

3. New Course

Calendar Copy:

ENGB63H3 Creative Non-Fiction I

An introduction to the craft of creative non-fiction. Through in-depth reading, discussion of exceptional texts and constructive workshop sessions, students will explore the many key elements of great true stories and produce several original works of creative non-fiction.

Enrolment Limits: 20

Breadth Requirement: Arts, Literature & Language

NOTE: Admission by portfolio. The portfolio should contain 5-10 pp. of your strongest fiction or non-fiction writing. Please email your portfolio to awestoll@utsc.utoronto.ca no later than the first Tuesday of August (for Fall course offering) or the first Monday of October (for Winter course offering).

Rationale:

The Department of English recently launched a Minor program in Creative Writing. This course will expand B-level creative writing offerings, double the number of creative non-fiction workshops available to our students, and enable the C-level offering in the genre (ENGC88H3) to engage more deeply with special topics and longer writing projects.

The purpose of this undergraduate-level creative writing course is to introduce students to the craft of creative non-fiction writing, to explore exceptional works of the genre, and to

Minor modifications to curriculum submitted by the Department of English.

provide students with a constructive workshop venue in which to improve and embolden their creative writing practice.

Learning Outcomes:

The learning outcomes for this course are threefold: practical, historical-theoretical, and professional. First, in terms of the practical learning outcome, the students will know how to compose exceptional and original works of creative non-fiction. Methodologically speaking, the students will possess the vocabulary needed to describe the various parts and layers of the literary text, and, in turn, students will learn how to build their own literary works by composing with and manipulating this textual material. Secondly, in terms of the historical-theoretical learning outcome, the student will gain a sophisticated understanding of the conventions, history, and theory of creative non-fiction. This knowledge will deeply inform the students' respective creative practices by asking them to carefully read what other writers have written and to reflect on how and why other writers wrote what they wrote, to what end, and to what effect. Finally, in terms of the professional learning outcome, the student will enter the writing world with a firm grasp of the necessary professional skills (for example, how to find a good story, how to conduct research) and an awareness of all the professional opportunities (for example, where to submit their work for publication).

Topics Covered:

This course will introduce students to the core skills and issues of creative nonfiction: Narrative Voice, Narrative Drive, Narrative Structure, Point of View, Memoir and Truth, Travel Writing, Personal Essay, Rhetoric, Interview Skills, Deep Research, Reporting versus Writing, Scene and Detail, Ethics of Creative Non-Fiction, How to Get Published, Long-Form Writing and the Digital Age.

Consultation:

Within the Department of English. Reviewed by the Dean's Office.

4. New Course

Calendar Copy:

ENGC43H3 Nineteenth-Century Literature and Contemporary Culture

An investigation of how nineteenth-century literature is translated into our contemporary world through art forms like music, architecture, film, television, graphic novels, or online and social media. What is it that makes us keep returning to the past, and how does each adaptation re-make the original into something new and relevant?

Pre-1900 course.

Prerequisite: ENGB03H3 and ENGB04H3 and [one of ENGB05H3 or (ENGB01H3) or (ENGB02H3)]

Enrolment Limits: 45

Breadth Requirement: Arts, Literature & Language

Minor modifications to curriculum submitted by the Department of English.

Rationale:

As a pre-1900 course, ENGC43H3 offers another option for the credits required of English Specialists and Majors, and might relax some of the oversubscribing in other pre-1900 courses.

It offers an intersection between the English Department's growing new media courses (film, comics and graphic novels, technology and social media), multiple media or interdisciplinary approaches (e.g., ENGC05H3: Creative Writing: Poetry & New Media, ENGC23H3 Fantasy and the Fantastic in Literature and the Other Arts, ENGC35H3 Imagined Communities in Early Modern England, 1500-1700; ENGC38H3 Novel Genres: Fiction, Journalism, News, and Autobiography, 1640-1750; ENGC76/77H3 The Body; ENGC91H3 American Realisms) and our strong collection of historical courses centered around the long 19th century. ENGC43H3 is framed to be a flexible course that changes from semester to semester, depending on various faculty teaching interests.

Learning Outcomes:

This course will give students a contextual grounding in the literature of at least one era or genre of the 19th century (e.g., Romanticism, Victorian and/or American realism, the novel, Darwin and scientific writing, popular or mass-market fiction, poetry, etc.), and will help them to hone close-reading skills across different artistic forms (text, film, music, architecture, and other visual formats, comics and graphic novels, online and social media). By the end of the course, students will be able to construct a strong and supported compare/contrast argument, and will have a basic technical vocabulary for the genres and media studied. ENGC43H3 will also help students to recognize and appreciate the contemporary, living relevance of "distant" historical periods by demonstrating the links between the society and culture of the nineteenth century and our own contemporary moment.

Topics Covered:

ENGC43 might cover any of the following topics:

- "Costume Drama Mania": Nineteenth-century fiction and film adaptation.
- Jane Austen Revisited: Contemporary updates of Austen's novels (e.g., the films *Clueless*, *Bridget Jones's Diary*, or *Bride and Prejudice*; the 2008 television series *Lost in Austen*).
- Drawing Late-Victorian Literature: The graphic novels of Alan Moore (e.g., *The League of Extraordinary Gentlemen*; *From Hell*) and their inspiration (genre fiction, sensation journalism).
- Exploring Steampunk: Neo-Victorian aesthetics in film, comics, art, fashion & design.
- "Ahoy-hoy": Communication technology and rapid change (e.g., telegraph/telephone and other communication developments explored in 19th-century literature and journalism, compared to the rise of contemporary social media).

Minor modifications to curriculum submitted by the Department of English.

- High Victorian Serialization and Television's New "Golden Age": Exploring (and expanding) the observation that HBO's *The Wire* is, in effect, a Dickens novel on television.

Consultation:

Within the Department of English. Reviewed by the Dean's Office.

5. New Course

Calendar Copy:

ENGD29H3 Chaucer at Work

Advanced study of Chaucer that explores the process of writing poetry in fourteenth-century England. Specific topics vary from year to year and might include an exploration of Chaucer's cultural and literary contexts or a survey of contemporary critical approaches to Chaucer and Medieval English literature.

Prerequisite: ENGB27H3 and ENGC29H3

Enrolment Limits: 22

Breadth Requirement: Arts, Literature & Language

Note: Texts will be read in Middle English.

Rationale:

This course is intended as a continuation of ENGC29H3, but would be open to all students with some experience in Middle English. Students will explore different critical and historical contexts for reading medieval English literature. "Chaucer at Work" refers both to Chaucer's day job as Clerk of the King's Works and to his work writing poetry. The approach taken will vary from semester to semesters, for example: the course might investigate the details of Chaucer's creative process, including how he reads major Latin, French, and Italian texts and uses them in his own writing; or, the course might take a New Historical approach to Chaucer, reading his literary work through his work at the court of Richard II.

Learning Outcomes:

In keeping with the English Department's D-level Working Group's recommendations, this course aims to develop students' competence in discussion, oral skills (developed by reading and performing Middle English aloud), writing and research (achieved through a final research paper), and theoretical and critical context.

Topics Covered:

- Chaucer as a bureaucrat
- Chaucer as a poet
- Middle English
- Medieval Literature

Minor modifications to curriculum submitted by the Department of English.

Consultation:

Within the Department of English. Reviewed by the Dean's Office.

6. Course Level Change

Existing Course Level and Code: ENGA18H3 Poetry and Popular Culture

New Course Level and Code: C-level - ENGC11H3

Calendar Copy Showing Changes:

ENGA18C11H3 Poetry and Popular Culture

Poetry is often seen as distant from daily life. We will instead see how poetry is crucial in popular culture, which in turn impacts poetry. We will read such popular poets as Ginsberg and Plath, look at poetry in film, and consider song lyrics as a form of popular poetry.

Exclusion: (ENGA18H3)

Enrolment Limits: ~~22~~ 45

Breadth Requirement: Arts, Literature & Language

Rationale:

The Department of English needs more courses at the C-level and ENGA18H3 can be modified and offered as a C-level course. The learning outcomes for the course will not change – e.g., being able to see how poetry impacts popular culture and how poets incorporate popular culture into their work, but students will be expected to produce work suitable for the C-level, and will be assessed according to C-level norms.

Consultation:

Within the Department of English. Reviewed by the Dean's Office.

7. Course Level Change

Existing Course Level and Code: ENG73H3 Rap Poetics

New Course Level and Code: D-level - ENGD13H3

Calendar Copy Showing Changes:

~~ENG73~~D13H3 Rap Poetics

An intensive study of rhetoric, genre, meaning, and form in rap lyrics. The three-decade-plus recorded history of this popular poetry will be discussed in rough chronological order. Aspects of African-American poetics, as well as folk and popular song, germane to the development of rap will be considered, as will narrative and vernacular strategies in lyric more generally; poetry's role in responding to personal need and to social reality will also prove relevant.

Minor modifications to curriculum submitted by the Department of English.

Prerequisite: [ENGB03H3](#) & [ENGB04H3](#) & [one of [ENGB05H3](#) or (ENGB01H3) or (ENGB02H3)]

Exclusion: (ENGD63H3), (ENG73H3)

Enrolment Limits: ~~45~~ 22

Breadth Requirement: Arts, Literature & Language

Rationale:

Moving the course to the D-level will allow the class to foster the seminar learning environment: small-group and informed discussions, longer research papers, and more theoretically contextualized conversations- all central to the success of the course.

Consultation:

Within the Department of English. With the Department of Historical and Cultural Studies. Reviewed by the Dean's Office.



FOR APPROVAL

PUBLIC

OPEN SESSION

TO: University of Toronto Scarborough Academic Affairs Committee

SPONSOR: Dean and Vice-Principal (Academic), Rick Halpern
CONTACT INFO: vpdean@utsc.utoronto.ca

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

DATE: Wednesday, January 8, 2014

AGENDA ITEM: 3d

ITEM IDENTIFICATION:

Minor modifications to curriculum submitted by the Centre for French and Linguistics.

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] (Wednesday, January 8, 2014)**

PREVIOUS ACTION TAKEN:

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

HIGHLIGHTS:

This package includes all minor modifications to curriculum requiring governance approval submitted by the Centre for French and Linguistics for the 2014-15 academic year. Minor modifications include new courses, changes to program requirements, changes in course level. The Centre for French and Linguistics is making minor

Minor modifications to curriculum submitted by the Centre for French and Linguistics.

modifications to its Major program in French (B.A.), adding 2 new courses –one at the B- and one at the C-level, and changing the level of one existing course.

FINANCIAL IMPLICATIONS:

There are no net implications for the campus' operating budget.

RECOMMENDATION:

Be It Resolved,

THAT all minor modifications to curriculum in the Centre for French and Linguistics, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved effective, April 1, 2014, for the academic year 2014-15.

DOCUMENTATION PROVIDED:

Minor modifications to curriculum submitted by the Centre for French and Linguistics.

Minor modifications to curriculum submitted by the Centre for French and Linguistics.

**Centre for French and Linguistics
Minor Modification to Curriculum
December 13, 2013**

1. Program Change

Program: MAJOR IN FRENCH (B.A.)

Overview of Changes:

- Increase the total credits to complete the program from 7.0 to 8.0.
- Move FREC01H3 and FREC02H3 from requirement 2 to requirement 1 of the program, and them requirements rather than options.
- Add 1.0 credit in linguistics course as a requirement to the program.
- Combine requirement 2 with requirement 1 of the program and revise the list of course options.
- Revise the list of course options for requirement 3.
- Reduce the number of credits to complete requirement 4 from 3.0 to 2.5; change FREB50H3 from an option to a requirement; revise the list of options.

Calendar Copy Showing Changes:

MAJOR PROGRAM IN FRENCH (ARTS)

For curriculum inquiries, contact the CFL Undergraduate Assistant: cfl-ua@utsc.utoronto.ca

Program Requirements

Students must complete ~~7.0~~ **8.0** credits in French, of which at least 2.0 credits must be at the C- or D-level, ~~including:~~

1. 3.5 credits as follows:

FREA01H3* **Language Practice I**

FREA02H3* **Language Practice II**

FREB01H3* ~~and~~ **Language Practice III**

FREB02H3* **Language Practice IV**

FREC01H3* **Language Practice V**

FREC02H3* **Language Practice VI**

one of [FREB08H3, (FREB09H3), FREB17H3, FREC05H3, FREC18H3, FRED01H3, or FRED06H3]

~~*(except where the Program Supervisor permits substitution of other FRE courses for s~~
Students with special proficiency in the French language may substitute other FRE courses with the permission of the Program Supervisor.)

~~2. One further full credit in language.~~

~~Language courses are: FREB08H3,~~

~~(FREB09H3), FREB17H3, FREB18H3, FREB43H3, FREB44H3, FREB45H3, FREC~~

Minor modifications to curriculum submitted by the Centre for French and Linguistics.

~~01H3, FREC02H3, FREC05H3, FREC12H3, FREC18H3, FREC45H3, FREC46H3, FREC47H3, FREC48H3, FRED01H3, FRED06H3, FRED46H3, (FRED49H3)~~

2. 1.0 credit in Linguistics:

Linguistics courses taught in French are: FREB44H3, FREB45H3, and FREC48H3

Linguistics courses taught in English are: FREC12H3, FREC45H3, FREC46H3, FREC47H3, and FRED46H3

3. ~~One full~~ 1.0 credit in literature and/or e Culture:

~~Literature courses~~

~~are: FREB20H3, FREB35H3, FREB36H3, FREB37H3, FREB50H3, FREB51H3, FREB55H3,~~

~~(FREB60H3), FREC38H3, FREC56H3, FREC61H3, FREC63H3, FRED12H3~~

~~Culture courses~~

~~are: FREB22H3, FREB27H3, FREB28H3, FREB70H3, FREB84H3, FREC83H3~~

4. ~~Three additional full~~ 2.5 additional credits in French, as follows:

FREB50H3 Introduction to Literature in French I

1.0 credit in French Literature taken from [FREB35H3, FREB36H3, FREB37H3, FREB51H3, FREB55H3, FREB84H3, FREC38H3, FREC58H3, FREC61H3, FREC63H3, and FRED12H3]

1.0 credit in French courses not already taken

Note: At the A-level, only FREA01H3 and FREA02H3 **may** be counted towards a French Program.

Note: For Co-op opportunities related to the Major Program in French please see the [Humanities and Social Sciences Co-operative](#) section in this *Calendar*.

Note: Major students cannot obtain more than 0.5 credits (out of 78.0) by taking a course taught in English.

Rationale:

Increasing the total number of credits to complete the program from 7.0 to 8.0 will strengthen the Major and also allow us to restructure the requirements in a more coherent and extensive manner. Under this revised structure students will be exposed to French language, literature, linguistics and culture, and their knowledge of, and skills in, French will be strengthened. Students will be better prepared for opportunities in the workplace, and better placed to pursue a career in teaching. Most students planning to become French teachers require more than 7.0 credits in French in order to be proficient enough with the language to teach it.

Consultation:

Within the Centre for French and Linguistics. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Centre for French and Linguistics.

2. New Course

Calendar Copy:

FREB46H3 History of the French Language

An introduction to the origin and development of French, from the Latin of the Gauls to current varieties of the language. The course examines the internal grammatical and phonological history undergone by the language itself as well as the external history which includes ethnic, social, political, technological, and cultural changes.

Prerequisite: FREA01H3 and FREA02H3

Exclusion: FRE273H, FRE372H, FRE373H

Breadth Requirement: Arts, Literature & Language

Rationale:

The proposed course expands the available offerings in French linguistics and also fills a currently existing gap in historical linguistics. In addition, it will add to the list of linguistics course taught in French. Similar courses are offered as part of the French programs at UTSG (FRE273H) and UTM (FRE372H and FRE373H) and increasingly UTSC students are taking these courses to fulfill their program requirements. FREB46H3 strengthens UTSC course offerings, and allows students to complete their programs at UTSC.

Learning Outcomes:

Upon completion of the course, students will have more historical knowledge of the French language, its origins and its development. This knowledge will inform subsequent courses in which students will discuss relationships between language, culture and society. Students will be able to place the French language into context and will be more familiar with other Romance Languages that have also derived from Latin. They will also better understand the spelling, grammar and phonology of Modern French, which will be particularly useful for students intending to become French teachers.

Topics Covered:

- Phonetic, social, political, and cultural causes of language change.
- Origin of the French language from Latin to modern day (including regional dialects).
- Medieval bilingualism.
- The gradual spread of the language of northern France.
- The role of reading and writing and the impact of print.
- The regulation of language through the Académie française and modern legislation.
- The political use of the French language (for example during the French Revolution).
- The influence of other languages on French (and vice-versa) including modern «franglais».
- The emergence of the Francophonie.
- Canadian, African, and Caribbean French.

Minor modifications to curriculum submitted by the Centre for French and Linguistics.

Consultation:

Within the Centre for French and Linguistics. Reviewed by the Dean's Office

3. New Course

Calendar Copy:

FREC58H3 Literature of the Ancien Régime

An introduction to major French writers from the 16th century (Rabelais, Montaigne), 17th century (Corneille, Molière, La Fontaine) or 18th century (Voltaire, Rousseau, Diderot). Students will learn skills required for textual analysis and will apply them to the cultural and intellectual context of literature from the Ancien Régime.

Prerequisite: FREB50H3

Exclusion: FRE319H and FRE320H

Breadth Requirement: Arts, Literature & Language

Rationale:

The proposed course expands the offerings in French literature, and focuses on the Ancien Régime - an area not covered in other French literature courses.

Learning Outcomes:

Students will develop their reading as well as their writing skills in French. The course will include some training dedicated to the art of writing a dissertation. The course examines the Ancien Régime's literature in its context, which means that students will have to understand some historical events in order to correctly interpret the literature. Students will improve their interpretative skills by learning how to use research in a personal written work. The course will provide some training in bibliographical research. At the end of the course, students will be able to analyze the language, the context and the content of some the Ancien Régime's major masterpieces.

Topics Covered:

- Ancien Régime French Literature and Philosophy (Montaigne, Diderot).
- Ancien Régime French Literature and Anthropology (Montaigne, Voltaire).
- Ancien Régime French Literature and Mythology (La Fontaine, Corneille).
- Ancien Régime French Theater (Molière, Corneille).
- Ancien Régime French Literature in context: Discovery of the New World, Copernican Revolution, War of Religions, French Politics, Arts and Music History, Book history.

Consultation:

Within the Centre for French and Linguistics. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Centre for French and Linguistics.

4. Course Level Change

Existing Course Level and Code: LINC60H3 Special Topics: Structure of a Language
New Course Level and Code: B-level – LINB60H3

Calendar Copy Showing Changes:

LINC60B60H3 ~~Special Topics: Structure of a Language~~ Structure of Chinese

An introduction to the phonetics, ~~phonology~~, morphology, word formation rules, syntax, semantics, discourse and various writing styles in the Chinese language, and script of a featured language other than English or French. Students will use the tools of linguistic analysis learned in prior courses to examine the structural and related key properties of Chinese this language. No prior knowledge of the language is necessary.

Prerequisite: ~~{LINA01H3 or {FREB44H3 and FREB45H3}}~~ and ~~{LINB06H3 or LINB09H3}~~

Exclusion: (LINC60H3)

Breadth Requirement: Arts, Literature & Language

Note: Students are expected to be proficient in Chinese and English

Rationale:

LINC60H3 is being changed to a B-level course as part of a proposal to introduce a new freestanding Minor program in Chinese/English Translation. Topics covered consider the issues that arise in Chinese/English translation.

Changes to the learning outcomes include a better understanding of the structure of Chinese using the tools of linguistic analysis learned in LINA01H3 and LINB06H3; an understanding of some of the essential similarities and differences between Chinese and other languages the students are familiar with such as English, French and Japanese; and new familiarity with some of the cultural norms and practices in Chinese-speaking countries through the study of Chinese lexis and grammar (e.g., honorifics and adversity passives).

Consultation:

Within the Centre for French and Linguistics. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Management.

FINANCIAL IMPLICATIONS:

There are no net implications for the campus' operating budget.

RECOMMENDATION:

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Management, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

DOCUMENTATION PROVIDED:

Department of Management, Minor Modifications to Curriculum, December 13, 2013.

Minor modifications to curriculum submitted by the Department of Management.

**Department of Management
Minor Modification to Curriculum
December 13, 2013**

1. New Course

Calendar Copy:

MGSC40H3 Corporate Governance

This course examines issues in Corporate Governance in today's business environment. Through case studies of corporate "ethical scandals", students will consider workplace ethical risks, opportunities and legal issues. Students will also examine professional accounting in the public interest as well as accounting and planning for sustainability.

Prerequisite: MGAB01H3 and MGAB02H3

Corequisite: MGSC30H3

Enrolment Limits: 40

Breadth Requirement: Social & Behavioural Sciences

Rationale:

Corporate Governance includes a study of cases with topics concerning ethical governance and accountability, corporate sustainability and the impact on accounting and regulation. These topics are not covered in detail in other courses in either accounting or business law, but they are significant for any business. Students need to know how to prepare accounting statements that comply with regulations in various jurisdictions, which Canadian and international law impact how business is carried on, something about sustainable business so they can set a strategic course that allows sustainability, and the ethical implications of their business activities and the implications of those activities for Canadian and international human rights. All of these important topics, which are not currently covered in detail in other courses, would be covered in this new course.

Learning Outcomes:

Students will acquire a solid understanding of the legal and ethical environment for business, corporate governance and accountability issues. They will develop an appreciation of the complexities of accounting and planning for sustainability concerns. As well, they will acquire an understanding of the management of ethical risks and opportunities.

Topics Covered:

- Ethical Environment in Business
- Laws Governing Corporate Action
- The Corporation as Criminal
- International Human Rights and Local Laws in Conflict
- Governance, Accounting and Auditing Reforms
- Ethical governance and Accountability
- Professional Accounting in the Public Interest

Minor modifications to curriculum submitted by the Department of Management.

- Accounting and Planning for Sustainability
- Approaches to Ethical Decision Making
- Managing Ethics Risks and Opportunities
- Accounting for Sustainability

Consultation:

Within the Department of Management. Reviewed by the Dean's Office

2. Course Level Change

Existing Course Level and Code: MGSC22H3 Entrepreneurship

New Course Level and Code: B-level – MGSB22H3

Calendar Copy Showing Changes:

MGSC22 B22H3 Entrepreneurship

This course focuses on the skills required and issues - personal, financial, sales, operational, personnel - entrepreneurs face as their smaller business grows from start-up to maturity. The course should interest those who wish to own, or seek careers with, an entrepreneurial business in either the "old" or "new" economies.

Prerequisite: MGAB03H3/(MGTB03H3) and [MGHB02H3 or [(MGTB23H3) and (MGTB29H3)] or [(MGTB27Y3)]

Exclusion: (MGSC22H3)/(MGTC38H3), MGT493H3, RSM493H3

Enrolment Limits: 60

Breadth Requirement: Social & Behavioural Sciences

Rationale:

During the academic year 2012 – 2013, as part of its ongoing review of the Department of Management's courses and programs, the Departmental Curriculum Committee realized that the suite of courses related to Entrepreneurship could be reorganized to offer a more logical progression, and be promoted as a coherent whole.

The change in designation for MGSC22H3 from a C-level to a B-level course is part of an effort to offer a broader suite of entrepreneurship courses, organised in a more coherent and progressive fashion. This course follows on logically from the brief overview of "Entrepreneurship and New Ventures" offered in the A-level MGTA05 "Foundations of business Management" course, and functions logically as an introduction to the further study of Entrepreneurship at UTSC.

No change is envisioned to the course's learning outcomes, the topics to be covered, or the methods of assessment.

Consultation:

Minor modifications to curriculum submitted by the Department of Management.

Within the Department of Management. Reviewed by the Dean's Office.

3. Course Level Change

Existing Course Level and Code: MGSC24H3 New Venture Creation and Planning
New Course Level and Code: D-level – MGSD24H3

Calendar Copy Showing Changes:

MGSC24D24H3 New Venture Creation and Planning

Aimed at students interested in launching their own entrepreneurial venture. The core of the course is the development of a complete business plan which details the student's plans for the venture's initial marketing, finance and growth. This course provides a framework for the evaluation of the commercial potential of business ideas.

Prerequisite: MGMA01H3/(MGTB04H3) and MGAB01H3/(MGTB05H3) and MGAB02H3/(MGTB06H3)

Exclusion: (MGSC24H3)/(MGTC39H3)

Breadth Requirement: Social & Behavioural Sciences

Rationale:

During the academic year 2012 – 2013, as part of its ongoing review of the Department of Management's courses and programs, the Departmental Curriculum Committee realized that the suite of courses related to Entrepreneurship could be reorganized to offer a more logical progression, and be promoted as a coherent whole. The change in designation for MGSC24H3 from a C-level to a D-level course is part of an effort to offer a broader suite of entrepreneurship courses, organised in a more coherent and progressive fashion. The new "Venture Capital" course will provide more extensive preparation, and this course functions most logically as a capstone to the study of Entrepreneurship at UTSC. No change is envisioned to the course's learning outcomes, the topics to be covered, or the methods of assessment.

Consultation:

Within the Department of Management. Reviewed by the Dean's Office.



FOR APPROVAL

PUBLIC

OPEN SESSION

TO: University of Toronto Scarborough Academic Affairs Committee

SPONSOR: Dean and Vice-Principal (Academic), Rick Halpern
CONTACT INFO: vpdean@utsc.utoronto.ca

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

DATE: Wednesday, January 8, 2014

AGENDA ITEM: 4a

ITEM IDENTIFICATION:

Minor modifications to curriculum submitted by the Department of Philosophy.

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] (Wednesday, January 8, 2014)**

PREVIOUS ACTION TAKEN:

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

HIGHLIGHTS:

This package includes all minor modifications to curriculum requiring governance approval submitted by the Department of Philosophy for the 2014-15 academic year. Minor modifications include new courses, changes to program requirements, and changes in course level. The Department of Philosophy is adding 2 new courses at various levels.

Minor modifications to curriculum submitted by the Department of Philosophy.

FINANCIAL IMPLICATIONS:

There are no net implications for the campus' operating budget.

RECOMMENDATION:

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Philosophy, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

DOCUMENTATION PROVIDED:

Department of Philosophy, Minor Modifications to Curriculum, December 13, 2013.

Minor modifications to curriculum submitted by the Department of Philosophy.

**Department of Philosophy
Minor Modifications to Curriculum
December 13, 2013**

1. New Course

Calendar Copy:

PHLC22H3 Topics in Theory of Knowledge

This course addresses particular issues in the theory of knowledge in detail. Topics will vary from year to year but may typically include such topics as The Nature of Knowledge, Scepticism, Epistemic Justification, Rationality and Rational Belief Formation.

Prerequisite: 5.0 full credits, including one of [PHLB20H3, PHLB55H3, PHLB60H3, (PHLB70H3), (PHLB72H3), (PHLB80H3), PHLB81H3, (PHLB86H3)] and an additional 1.0 credit in Philosophy.

Exclusion: PHL332H

Breadth Requirement: History, Philosophy & Cultural Studies

Rationale:

B-level courses are being streamlined so that there is a single, introductory course for the core subjects in philosophy. Building on this foundation, there will be a more advanced core course at the C-level, in addition to two specialized courses for each subject.

PHLC22H3 will serve as one of two specialized courses in epistemology at the C-level, consistent with restructuring efforts.

Learning Outcomes:

General learning outcomes include further development of students' writing ability, extension of their facility at critical thinking and analysis of complex and abstract argumentation. Particular learning outcomes will include deeper and more extensive knowledge and understanding of epistemology, one of the central core areas of modern philosophy.

Topics Covered:

Content will be dictated by instructor's interests and significance of proposed topics. Typical topics would be The Nature of Knowledge, Scepticism, Epistemic Justification, Rationality and Rational Belief Formation.

Consultation:

Within the Department of Philosophy. Reviewed by the Dean's Office.

Minor modifications to curriculum submitted by the Department of Philosophy.

2. New Course

Calendar Copy:

PHLD20H3 Advanced Seminar in Theory of Knowledge

This course addresses core issues in the theory of knowledge at an advanced level. Topics to be discussed may include The Nature of Knowledge, Scepticism, Epistemic Justification, Rationality and Rational Belief Formation.

Prerequisite: 3.5 credits in Philosophy, including [PHLC20H3 or PHLC22H3] and an additional 0.5 credit at the C-level.

Breadth Requirement: History, Philosophy & Cultural Studies

Rationale:

There is currently no advanced seminar in epistemology, and therefore no linear course progression in this subject area. PHLD20H3 will address this void and remain consistent with restructuring efforts. The course descriptions for PHLC22H3 and PHLD20H3 are intentionally similar. D20 will function as the advanced seminar in epistemology, so the same topics and themes will be treated, albeit in greater depth/detail.

Learning Outcomes:

The learning outcomes will include:

- The ability to read and analyze a text closely
- The ability to think critically about a complex view or argument
- The ability to identify questions that are in need of further investigation
- The ability to engage in a sustained, productive discussion with others
- The ability to develop one's own line of argument and articulate it clearly, both verbally and in writing

Topics Covered:

Content will be dictated by instructor's interests and significance of proposed topics. Typical topics would be The Nature of Knowledge, Scepticism, Epistemic Justification, Rationality and Rational Belief Formation.

Consultation:

Within the Department of Philosophy. Reviewed by the Dean's Office.



FOR APPROVAL

PUBLIC

OPEN SESSION

TO: University of Toronto Scarborough Academic Affairs Committee

SPONSOR: Dean and Vice-Principal (Academic), Rick Halpern
CONTACT INFO: vpdean@utsc.utoronto.ca

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

DATE: Wednesday, January 8, 2014

AGENDA ITEM: 4b

ITEM IDENTIFICATION:

Minor modifications to curriculum submitted by the Department of Psychology.

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] (Wednesday, January 8, 2014)**

PREVIOUS ACTION TAKEN:

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

HIGHLIGHTS:

This package includes all minor modifications to curriculum requiring governance approval submitted by the Department of Psychology for the 2014-15 academic year. Minor modifications include new courses, changes to program requirements, changes in course level. The Department of Psychology is adding 3 new courses: 1 at the B-level and 2 and the the C-level.

Minor modifications to curriculum submitted by the Department of Psychology.

FINANCIAL IMPLICATIONS:

There are no net implications for the campus' operating budget.

RECOMMENDATION:

Be It Resolved,

THAT all minor modifications to curriculum in the Department of Psychology, as recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, in the proposal dated December 13, 2013, be approved, effective April 1, 2014, for the academic year 2014-15.

DOCUMENTATION PROVIDED:

Minor modifications to curriculum submitted by the Department of Psychology.

Minor modifications to curriculum submitted by the Department of Psychology.

**Department of Psychology
Minor Modifications to Curriculum
December 13, 2013**

1. New Course

Calendar Copy:

PSYB03H3 Introduction to Computers in Psychological Research

The course will provide introductory knowledge and hands-on training in computer-based implementations of experimental design, data processing and result interpretation in psychology. The course covers implementations of experimental testing paradigms, computational explorations of empirical data structure and result visualization with the aid of specific programming tools (e.g., Matlab).

Prerequisites: PSYA01H3 and PSYA02H3

Co-requisite: PSYB07H3

Enrolment Limits: 70

Breadth Requirement: Quantitative Reasoning

NOTE: Priority will be given to Specialist, Specialist Co-op, and Major students in Psychology, Mental Health Studies and Neuroscience. Students in the Minor in Psychology will be admitted if space permits.

Rationale:

PSYB03H3 is designed for students in the Specialist/Specialist Co-op, or Major Programs in Psychology at UTSC. Students taking this course will have the requisite background knowledge in statistics and research methods prior to enrolling in the course. The course will contribute to the department's B-level course offerings and will be a lecture course supplemented by a laboratory component.

PSYB03H3 fills an important need in the Department Psychology by integrating theoretical and practical knowledge in the context of computer-based implementations of psychological research. More generally, this course aims to shape critical thinking in approaching scientific research with the aid of modern-day computer technologies while appreciating their extensive range of strengths along with the constraints that they pose. It will provide students with introductory knowledge and concrete skills regarding computer-based implementations of experimental testing, data analysis, and result visualization in psychological and neuroscience research. More generally, the course encourages and allows students to conceptualize and evaluate experimental research from a practical computational perspective.

Learning Outcomes:

- Students will learn the process of acquiring, preparing, analyzing, and presenting psychological research data using computers and a programming language. Specifically, they will be able to:

Minor modifications to curriculum submitted by the Department of Psychology.

- Recognize and articulate the wide scope of computer-use in the behavioural sciences: Students will be able to use self-determined criteria and a range of reliable information to communicate how computer-use contributes to research methodologies.
- Understand and demonstrate procedural abstraction when writing computer code: Students will identify and define a problem, devise innovative approaches to build a solution, and critically evaluate underlying assumptions and arguments to support their solution.
- Demonstrate good commenting and documentation practices when writing computer code: Students will be able to write concise and coherent documentation so that external readers will be able to comprehend the author's purpose of the code.
- Use variables/values/types, assignment, and control flow (conditionals/loops/error handling) as well as recognize the importance of memory considerations and file management in a programming environment: Students will be able to interpret quantitative information, apply reasoning, and perform the appropriate calculations to draw conclusions about their applications and their intended outcomes.
- Generate graphical data and export this for use in reports and presentations: Students will be able to represent analyzed data using charts, diagrams, and other formats to convey information in clear and creative ways.

Topics Covered:

The topics covered will include a general overview of the use of computers in psychology along with more detailed graphical user interfaces, basic programming skills, matrices, visual/auditory stimulus design, stimulus presentation, behavioral data recording, and data visualization.

Consultation:

Within the Department of Psychology. Reviewed by the Dean's Office.

2. New Course

Calendar Copy:

PSYC03H3 Computers in Psychological Research: Advanced Topics

The course will provide advanced knowledge and hands-on training in computer-based implementations of experimental design, data processing and result interpretation in psychology. The course covers implementations of experimental testing paradigms, computational explorations of empirical data structure, and result visualization with the aid of specific programming tools (e.g., Matlab).

Prerequisite: PSYB07H3 and PSYB03H3

Enrolment Limits: 35

Breadth Requirement: Quantitative Reasoning

Minor modifications to curriculum submitted by the Department of Psychology.

NOTE: Priority will be given to Specialist, Specialist Co-op, and Major students in Psychology, Mental Health Studies and Neuroscience. Students in the Minor in Psychology will be admitted if space permits.

Rationale:

PSYC03H3 is designed for students in the Specialist/Specialist Co-op or Major Programs in Psychology at UTSC. Students taking this course will have the requisite background knowledge in statistics, research methods and computer programming prior to enrolling in the course. The course will contribute to the department's C-level course offerings and will be a lecture course supplemented by a laboratory component.

PSYC03H3 fills an important need in the department by integrating theoretical and practical knowledge in the context of computer-based implementations of psychological research. More generally, this course aims to shape critical thinking in approaching scientific research with the aid of modern-day computer technologies while appreciating their extensive range of strengths along with the constraints that they pose. The course aims to provide students with advanced knowledge and concrete skills regarding computer-based implementations of experimental testing, data analysis and result visualization. More generally, the course encourages and allows students to conceptualize and evaluate experimental research from a practical computational perspective.

PSYC03H3 builds upon a number of other courses (PSYB07H3 Data Analysis in Psychology; PSYC08H3 Advanced Data Analysis in Psychology; PSYB01H3 Psychological Research Laboratory; PSYB03H3 Introduction to Computers in Psychological Research). Importantly, this course brings together theoretical knowledge (PSYB07H3) and basic programming skills (PSYB03H3) with the goal of providing an overall implementation-driven approach to assessing and conducting scientific research in psychology.

Learning Outcomes:

The students will be able to handle critical aspects of psychological research by using appropriate computer programming techniques and strategies. Specifically, they will be able to:

- Implement behavioral testing paradigms, including stimulus construction, manipulation and display as well as experimental data recording;
- Explore data structure via statistical tests and basic computational models;
- Visualize and interpret results using suitable graphical representations of data structure;
- Evaluate if and how specific research issues can benefit when approached from a computational implementation-driven perspective.

More generally, this course will be instrumental in developing critical and creative thinking skills as involved in the development, implementation, and the evaluation of alternative solutions to complex problems in psychological research. Also, the course will deepen and expand the students' mastery of programming methods and techniques

Minor modifications to curriculum submitted by the Department of Psychology.

relevant to empirical and computational research in psychology. Last, the course aims to sharpen quantitative reasoning skills related to the implementation of specific algorithms/computations as well as to improve on graphical communication skills as involved in the plotting of complex data sets.

Topics Covered:

The topics covered will include visual/auditory stimulus design, fixed and adaptive stimulus presentation, behavioral data recording, practical implementation and assessment of univariate/multivariate statistical tests, data exploration via basic computational models, graphical representation of data structure and result interpretation. Training relies on, and further develops, programming skills of broad relevance and utility for psychological research – computer implementations involve the Matlab computing environment with the addition of specific toolboxes: Statistics, Image processing, Bioinformatics, & Psychtoolbox.

Consultation:

Within the Department of Psychology. Reviewed by the Dean's Office.

3. New Course

Calendar Copy:

PSYC09H3 Applied Multiple Regression in Psychology

An introduction to multiple regression and its applications in psychological research. The course covers the data analysis process from data collection to interpretation: how to deal with missing data, the testing of assumptions, addressing problem of multicollinearity, significance testing, and deciding on the most appropriate model. Several illustrative data sets will be explored in detail. The course contains a brief introduction to factor analysis. The goal is to provide the students with the skills and understanding to conduct and interpret data analysis in non-experimental areas of psychology.

Prerequisite: [PSYB07H3 or STAB22H3] and an additional 0.5 credit at the B-level in Psychology

Enrolment Limits: 90

Breadth Requirement: Quantitative Reasoning

NOTE: Restricted to students in the Specialist/Specialist Co-op and Major programs in Psychology, Mental Health Studies, and Neuroscience. Students in the Minor in Psychology will be admitted if space permits.

Rationale:

Multiple regression is the typical form of data analysis in non-experimental and applied areas in psychology. Currently courses covering multiple regression are being offered only on an *ad hoc* basis to a limited number of advanced students, usually under the rubric of an independent-study course (e.g., PSYC90H3). In terms of our curriculum, this has meant that some students have not been as prepared as they might have been for

Minor modifications to curriculum submitted by the Department of Psychology.

advanced undergraduate courses in non-experimental areas, including individual research work (PSYC90H3) and the thesis course (PSYD90H3).

Feedback from students who have gone on to graduate and professional programs, as well as feedback from colleagues in various graduate and professional programs, reveals that the Department of Psychology has been successful in preparing students in terms of experimental design and analysis of variance, but less successful in terms of multiple regression techniques. The proposed course fills this gap.

Learning Outcomes:

Upon completion of the course students will be able to understand and do the following with respect to multiple regression:

- Understand the framework of the general linear model.
- Identify univariate outliers and where appropriate either remove or transform them.
- Identify bi-ivariate and multivariate outliers and where appropriate either remove or transform them.
- Examine the variables with respect to normality and linearity and transform data when needed and where possible.
- Identify problems concerning multicollinearity and understand the assumptions and limitations of the various techniques used for addressing the problem.
- Understand the process of testing for the significance for the overall model and the individual predictors.
- Decide on a final model and understand its limitations, e.g., unmeasured important variables.
- Use factor analysis (factor scores) as a tool for addressing the issue of multicollinearity under certain circumstances.
- How to report multiple regression analyses in scientific reports and publications.

Topics Covered:

- Overview of the general linear model.
- A step-by-step presentation of how to conduct a multiple regression analysis on data typically collected in various non-experimental areas in psychology, including the testing of assumptions.
- An introduction to factor analysis.

Consultation:

Within the Department of Psychology. Reviewed by the Dean's Office.

UNIVERSITY OF TORONTO

THE UNIVERSITY OF TORONTO SCARBOROUGH CAMPUS COUNCIL

REPORT NUMBER 2 OF THE ACADEMIC AFFAIRS COMMITTEE

November 12, 2013

To the University of Toronto Scarborough Campus Council,
University of Toronto Scarborough,

Your committee reports that it met on Tuesday, November 12, 2013 at 4:00 p.m. in the Council Chamber, Arts and Administration Building, with the following members present:

Present:

Ms Kathy Fellowes (Chair)
Professor Suzanne Erb (Vice-Chair)
Mr. Syed W. Ahmed
Dr. Johann Bayer
Professor William R. Bowen
Professor Nick Cheng
Dr. Curtis Cole
Professor George S. Cree
Mr. Adrian De Leon
Ms Hanan Domloge
Professor Kelin Emmett
Professor David J. Fleet
Professor John Hannigan
Dr. Brian Harrington
Professor Paula Hastings
Professor Rena Helms-Park
Professor Matthew Hoffmann
Mr. Jerry Jien
Dr. Nancy Johnston
Mr. John Kapageridis
Dr. Sarah D. King
Professor Heinz-Bernhard Kraatz
Professor Patricia Landolt

Mr. Andrew Leung
Professor Nathan R. Lovejoy
Professor Andrew C. Mason
Professor Alice Maurice
Professor Karen Lyda McCrindle
Professor John Robert Miron
Dr. Christopher Ollson
Ms Charmaine Ramirez
Professor Stephen Rockel
Ms Paulina Rousseau
Professor Larry A. Sawchuk
Professor Mark A. Schmuckler
Professor Grace Skogstad
Ms Tisha Tan
Professor David Zweig

Non-Voting Assessors:

Ms Annette Knott

Secretariat:

Mr. Louis Charpentier
Mr. Jim Delaney
Ms Rena Parsan

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Regrets:

Professor Daniel Bender

Mr. Luki Danukarjanto

Ms Ariane Ganji

Professor Rick Halpern

Professor Sherri Helwig

Professor Philip Kremer (Bill Seager)

Professor Michael J. Lambek

Professor Garry Martin Leonard

Ms Victoria Owen

Ms Lindsay Raoufi

Professor Andre Sorensen

Dr. Sisi Tran

Ms Georgette Zinaty

In Attendance:

Professor George Archontitsis, Associate Professor, Department of Physical and Environmental Science

Mr. Chris Bovaird, Senior Lecturer, Department of Management Studies

Professor Mandy Meriano, Lecturer, Department of Physical and Environmental Science

Mr. Desmond Pouyat, Dean of Student Affairs

Ms Kim Richard, Director, Human Resource Services

1. Chair's Remarks

The Chair welcomed members to the meeting and introduced Jim Delaney, Acting Assistant Secretary of the Governing Council who would be filling in for Amorell Saunders N'Daw, Director of Governance UTSC, and Assistant Secretary of the Governing Council, because she was attending the Ontario Institute for Studies in Education/University of Toronto convocation to receive her Masters of Education degree. The Chair congratulated Ms Saunders N'Daw *in absentia* on her graduation.

The Chair introduced, Professor Kelin Emmette, Professor David Fleet and Professor Matthew Hoffmann who were participating in the meeting via teleconference.

2. Voting Assessors Remarks

There were no reports from the Voting Assessors.

3. Undergraduate Curriculum Changes

The Chair noted that the bulk of the meeting agenda was focused on undergraduate curriculum changes brought forward by the Dean and Vice-Principal, Academic. She noted that there were six proposed changes (five for approval and one for recommendation to the Committee on

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Academic Policy and Programs), and mentioned that the detailed proposals for each change were provided with the meeting documentation.

a. Introducing Two Streams to the Currently Undifferentiated Specialist Program in Strategic Management

The Chair invited Acting Dean and Vice-Principal, Professor Mark Schmuckler, to speak to the item. Professor Schmuckler explained that the Department of Management offered a specialist in Strategic Management, but without streams. The department wished to add two streams to the program: management strategy, which was designed to give students broad exposure to all functional aspects of management, and an entrepreneurial stream, which was designed to encourage students to think about self-employment as a potential career path. Professor Schmuckler indicated that the program could run using the existing budget of the Department of Management, and that there would be a need for only one new additional course, MGS26H3 Venture Capital. Professor Schmuckler also mentioned that the department consulted with several other departments at UTSC and within the broader UofT community on this change.

On motion duly made, seconded and carried,

YOUR COMMITTEE APPROVED,

THAT proposed streams in Strategic Management and Entrepreneurship being introduced to the existing undifferentiated Specialist program in Strategic Management (B.B.A.), as described in the proposal recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, dated August 20, 2013, be approved effective April 1, 2014 for the academic year 2014-15; and

THAT one associated new course – MGSC26H3 Venture Capital – as described in the same proposal dated August 20, 2013, be approved effective April 1, 2014 for the academic year 2014-15.

b. Separating (in Calendar Copy) Specialist B.A. and B.Sc. and Major B.A. and B.Sc. Programs in Anthropology, and Rename these Programs

The Chair invited Professor Schmuckler to speak to the item. Professor Schmuckler explained that the separation and renaming of these programs were to establish distinct learning outcomes for each program, and to better differentiate programs for students. He elaborated that the B.A. degree would be a Specialist or Major in Socio-Cultural Anthropology with a focus on qualitative methods and ways of life around the world, and that the BSc degree would be a Specialist or Major in Evolutionary Anthropology with an

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emphasis on quantitative methods and the emergence of the human species. Professor Schmuckler indicated that there were no resource implications, and that consultation had been done with the Department of Anthropology and senior administrative offices. One Committee member asked whether the proposal was for a new program in Anthropology, and Professor Schmuckler replied that it was a program modification.

On motion duly made, seconded and carried,

YOUR COMMITTEE APPROVED,

THAT the B.A. and B.Sc. Specialist and Major programs in Anthropology be explicitly separated in Calendar Copy, as described in the proposals recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, dated October 10, 2013, be approved effective April 1, 2014 for the academic year 2014-15; and

THAT the title of B.A. Specialist and Major programs be changed to Specialist and Major programs in Socio-Cultural Anthropology, as described in the aforementioned proposals dated October 10, 2013, be approved to be effective April 1, 2014 for the academic year 2014-15; and

THAT the title of the B.Sc. Specialist and Major programs be changed to Specialist and Major programs in Evolutionary Anthropology, as described in the aforementioned proposals dated October 10, 2013, be approved to be effective April 1, 2014 for the academic year 2014-15

c. Closing Four Streams within the Specialist Program in Art and Culture (B.A.) and Rename the Remaining Program

The Chair invited Professor Schmuckler to speak to the item. Professor Schmuckler explained that there were currently five specialist streams within the Art and Culture program and that four would be closed. Professor Schmuckler noted that the closure took into account the department's academic goals and available resources. He also explained that the Specialist in Art and Culture, Studio stream would be renamed to the Specialist in Studio. He reported that the closure does not have any resource implications. A Committee member asked what the enrollment numbers were for each stream prior to the closure, and Professor Schmucker indicated that there were one or two students enrolled in each stream.

On motion duly made, seconded and carried,

YOUR COMMITTEE APPROVED,

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THAT the Art History stream, Curatorial Studies stream, Music stream and Theatre & Performance Studies stream of the Specialist program in Art and Culture (B.A.), as described in the proposal recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, dated September 30, 2013, be closed effective April 1, 2014 for the academic year 2014-15; and

THAT the remaining program, currently called the Specialist in Art and Culture, Studio stream (B.A.), be renamed as the Specialist in Studio (B.A.) aforementioned in the proposal dated September 30, 2013, be approved to be effective April 1, 2014 for the academic year 2014-15.

d. Introducing a New Freestanding Minor Program in Public Law (B.A.)

The Chair invited Professor Schmuckler to speak to the item. Professor Schmuckler explained that the new freestanding minor program in Public Law would be housed in the Department of Political Science. Professor Schmuckler indicated that the minor program in Public Law would complement the existing specialist, major and minor programs in political science by highlighting questions fundamental to contemporary politics, principles of justice, the role of constitutions in safeguarding the rule of law, and civil liberties. Professor Schmuckler indicated that the minor program in Public Law would include five new associated courses, and that current faculty in the Department of Political Science had shown interest in teaching courses in the Public Law program. He described the consultation process and all those involved at the UTSC level as well as the broader UofT Community.

On motion duly made, seconded and carried,

YOUR COMMITTEE APPROVED,

THAT the proposed freestanding Minor program in Public Law (B.A.), as described in the proposal recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, dated September 24, 2013, be approved to be effective April 1, 2014 for the academic year 2014-15; and

THAT five associated new courses: POLB30H3, POLC32H3, POLC36H3, POLC38H3, and POLC39H3, as described in the aforementioned proposal dated September 24, 2013, be approved to be effective April 1, 2014 for the academic year 2014-15.

e. Closing the Minor Program in French for Francophones (B.A.)

The Chair reported that this item was for recommendation to the Committee on Academic Policy and Programs. She also noted that the documentation for the item and meeting agenda, originally posted on Diligent Boardbooks and the UTSC governance website, had indicated that the

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program was proposed to be closed to admissions on May 1, 2014. The date was revised on Friday, November 8, 2013 to be closed to admissions on April 1, 2014 in order to coincide with the date when the 2014-15 calendar would come into effect. The Chair invited Professor Schmuckler to speak to the item. Professor Schmuckler explained that the Centre for French and Linguistics did not offer other programs in French for Francophones, and that the existing specialist program in French could accommodate students with varying levels of French proficiency, including native speakers. Thus, francophone students could pursue a similar program by enrolling in a minor program in French. He also noted that as of October 11, 2013 there were two students enrolled in the program who would be able to complete it with no disruption.

On motion duly made, seconded and carried,

YOUR COMMITTEE RECOMMENDS TO THE COMMITTEE ON ACADEMIC POLICY AND PROGRAMS,

THAT, the proposed closure of the Minor program in French for Francophones, as described in the proposal recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, dated October 10, 2013, be approved with an effective date of April 1, 2014 for the closure of admissions, and an anticipated program closure date of June 1, 2016.

f. Introducing a New Course –Communicating Science: Film, Media, Journalism, and Society (PSCA01H3)

The Chair invited Professor Mark Schmuckler to speak to the item. Professor Schmuckler explained that the focus of the course was to examine how scientific issues were communicated to a wider audience through film, media, journalism and society. He indicated that there were not any courses similar to this one at the University of Toronto. Professor Schmuckler indicated that the course would be subsidized initially using iExplore funding, which was a fund that provided innovative curricular programs to first year students, but that ongoing financial obligations would be met by the Department of Physical and Environmental Sciences. A member sought clarification on the title of the course. Professor Mandy Meriano from the Department of Physical and Environmental Sciences explained that the course would focus on how science was communicated and how the public perceived scientific evidence outside of peer reviewed findings. One member asked how the course would be taught. In response, Professor Meriano explained that the course would be taught through experts inside and outside of the university. A member inquired as to how the department was planning to attract students to the course. Professor Meriano indicated that the course would be promoted in classrooms, through social media, and by working with the registrar's office. A member commented that they noticed that one of the learning outcomes was writing and asked what type of writing skills would be taught.

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Professor Meriano indicated that students would learn science writing techniques. A member inquired about the breadth requirement and its rationale. Professor Meriano explained that the feedback and advice the department had received indicated that students without a science background tended to struggle in science courses. The department had a desire to attract students who would continue to pursue science at the undergraduate level and who would envision themselves as scientists.

On motion duly made, seconded and carried,

YOUR COMMITTEE APPROVED,

THAT the new course, PSCA01H3, as described in the proposal recommended by the Dean and Vice-Principal (Academic), Professor Rick Halpern, dated October 23, 2013, be approved effective immediately for the academic year 2013-14.

4. Calendar Change: Revisions of the Description of the Credit/No Credit Option

The Chair invited Professor Schmuckler to speak to the item, which was presented for information. Professor Schmuckler explained that the calendar was being updated to explicitly state that supervised readings and directed research courses not be eligible for Credit/No Credit assessment effective April 1, 2014. This change was in line with current practices at UTSC, UTM and the Faculty of Arts and Science. Consultation on this change had included the Office of the Vice-Principal and Dean, Academic, Office of the Registrar, the Academic Advising and Career Centre and the Scarborough Campus Student's Union.

5. Undergraduate Calendar Information: Sessional Dates, 2014-15

The Chair invited Professor Schmuckler to speak to the item. Professor Schmuckler indicated that the 2014-15 Sessional Dates had been brought to the Academic Affairs Committee for information because the dates were directly related to the teaching, learning and research function of the campus. A member asked whether information was being collected on the impact of the fall reading week on students. Professor Schmuckler replied by stating that the Office of the Dean and Vice-Principal, Academic was currently working with the Academic Advising and Career Centre to determine what programs were used during the fall reading week. In addition, information was being gathered from first year students on the effectiveness of having a mental break during the fall semester in their first year of university.

CONSENT AGENDA

6. Report of the Previous Meeting: Report 1- September 10, 2013 *(for approval)*

7. Business Arising from the Report of the Previous Meeting

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8. Date of the Next Meeting- Wednesday, January 8, 2014, 4:00 p.m.- 6:00 p.m.

On motion duly made, seconded and carried,

YOU COMMITTEE APPROVED,
THAT the consent agenda be adopted and the item requiring approval be approved.

The Chair reminded members that the next scheduled meeting of the Committee was on Wednesday, January 8, 2014 at 4:00 p.m.

9. Other Business

The Chair noted that this meeting was the last time the committee would meet before 2014, and wished everyone a happy holiday. She also directed members' attention to the post cards distributed around the table, which were promoting the 2014 Elections process. She encouraged members to share the post cards with anyone they thought would be interested in getting involved in governance at the University of Toronto.

The meeting adjourned at 5:07 p.m.

Secretary

Chair